

# Selling Industry 4.0

The new sales mind-set for connected products

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# A complex product to sell

**T**HE introduction of Industry 4.0 technologies into products, and the ability to transform the data generated by machines into value-added intelligence are radically changing what products companies make, how they make them, and how they sell them. Failing to clearly understand this—and failing to alter the approach to customers when pitching the new products—can result in lost opportunities.

Philips Lighting was eager to sell its smart lighting solutions to a client that was building a new office. The lighting company was already responsible for the connected lighting system in the Edge, an innovative 40,000-square-meter multi-tenant office building in the Dutch capital, Amsterdam, and had heard the client was looking to do something similar with its new building.

The Edge demonstrated what a smart, sustainable lighting system could do. Philips Lighting had installed 6,500 LED luminaires over 15 floors to create a “digital ceiling,” of which 3,000 were equipped with integrated sensors. These were linked to the IT network through 750 power-over-Ethernet switches that provided both power and connectivity. The sensors captured data on room occupancy, temperature, and natural light levels; this data was then used to tailor the lighting, heating and cooling, and to organize cleaning services. Employees working in the office could control light levels and temperature right down to the desk level through a custom app on their smartphones. Philips Lighting claims that the system has provided over €100,000

(\$123,000) in energy savings and over €1.5 million (\$1.84 million) in space utilization costs since the Edge opened in 2015.<sup>1</sup>

The client had a number of considerations with its new office building. A range of competing technologies could deliver an intelligent building, and included other functionalities that the lighting solution did not. Which one to choose? The client wanted to be innovative but was reluctant to invest in a new or unproven product, especially at twice the price of a more typical lighting solution.

The client’s property team overseeing the formulation of the technical specifications sought to understand the value in terms of larger operational improvements, or how it was supposed to deal with the vast amounts of data collected in the Philips solution. How should they put a price on the data?

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**Sales teams need to engage with customers at the right time and be able to articulate what the added value of the new system actually is and how it is delivered.**

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This example highlights some of the many challenges that arise when manufacturers try to sell smart, connected products. Indeed, products with increased capabilities and performance don't just sell themselves, especially when they're relatively novel. And an inability to articulate the benefits or new capabilities afforded with a "smart" option can mean missed sales opportunities—and missed value for the client.

In this paper, we examine how the sales process changes in an Industry 4.0-enabled world. It is a world full of opportunity but also challenges. Clients can approach the process with varying degrees of openness to new technologies and new ways of working with products, but many do not always understand the value proposition right away.

Further complicating matters, such investments can carry a higher price tag, beyond the cost of the smart system itself, because of the need to analyze the data generated and put it to use. These additional costs can further deter already-tentative customers.

With this in mind, sales teams need to engage with customers at the right time and be able to articulate what the added value of the new system actually is and how it is delivered. This may require starting the sales process earlier, talking to a wider, more senior set of stakeholders, and other changes to the sales strategy and process.

Companies can change and learn how to sell Industry 4.0-enabled products and services, as Philips did. We'll explore how.

**WHAT IS INDUSTRY 4.0?**

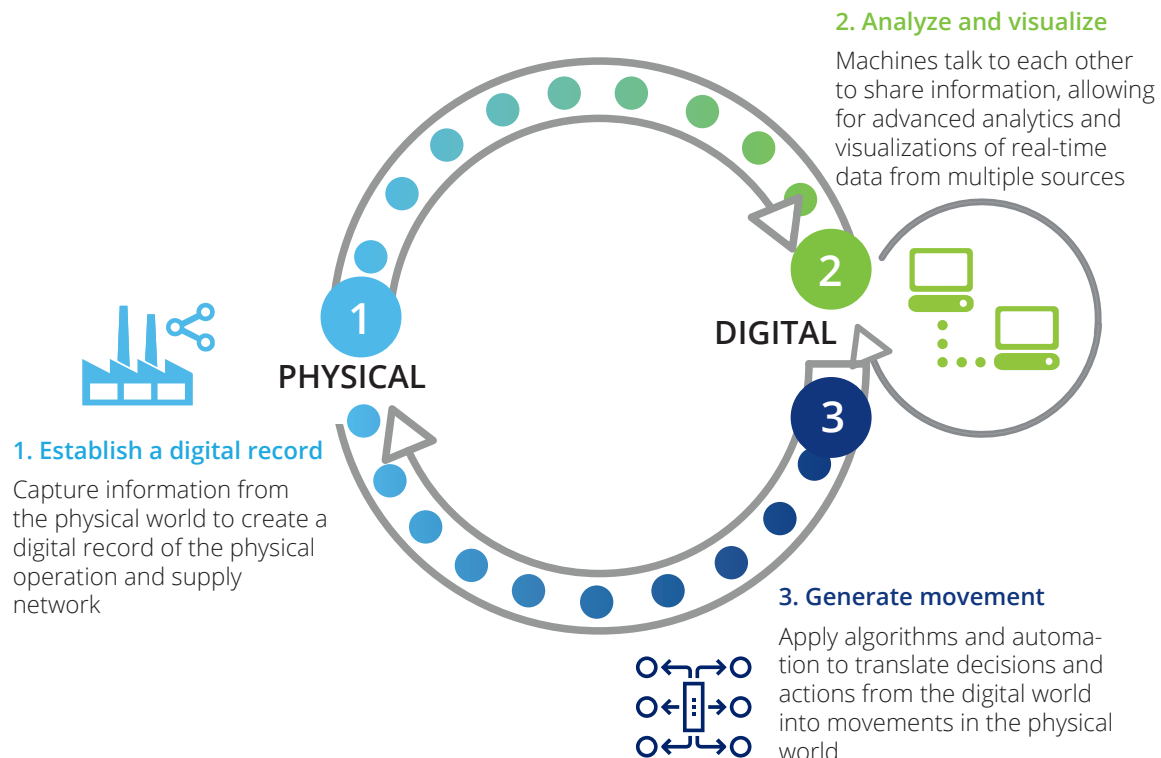
The concept of Industry 4.0 incorporates and extends digital connectivity within the context of the physical world in digital enterprises and digital supply networks. This drives the physical act of manufacturing, distribution, and performance in an ongoing cycle known as the physical-to-digital-to-physical (PDP) loop (figure 1).

The Industry 4.0 technologies combine digital information from many different physical and digital sources and locations, including the Internet of Things and analytics, additive manufacturing, robotics, high-performance computing, artificial intelligence and cognitive technologies, advanced materials, and augmented reality.

Throughout this cycle, real-time access to data and intelligence is driven by the continuous and cyclical flow of information and actions between the physical and digital worlds. Many manufacturing and supply chain organizations already have some portions of the PDP loop in place, namely, the physical-to-digital, and digital-to-digital processes. However, it is the leap from digital back to physical—from connected, digital technologies to action in the physical world—that constitutes the essence of Industry 4.0.<sup>2</sup>

As these technologies are deployed in factories<sup>3</sup> and throughout the supply networks,<sup>4</sup> we have seen how Industry 4.0 has reshaped not just which products manufacturers make, but also how they make them. It has also changed the relationships customers have with these manufacturers to something more continuous and open-ended.<sup>5</sup> In many downstream uses of Industry 4.0, technologies can fundamentally change how companies connect with their clients, through deeper customer relationships and enhanced sales and account management efficiency.

**Figure 1. The physical-digital-physical loop and the technologies used**



Source: Center for Integrated Research.

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For further information, see *Forces of change: Industry 4.0* and *Industry 4.0 and manufacturing ecosystems: Exploring the world of connected enterprises*.

# Changes to the sales process

**I**NDUSTRY 4.0 alters the landscape for products in key ways. First, the smart, connected objects produce enormous amounts of data, which can be harnessed to drive improvements across a range of metrics, including price and performance. Second, their ability to connect to other machines creates, contributes to, and benefits from a broader ecosystem of activity and intelligence. Successfully managing data can result in richer, relationship-based sales models and help create new products to sell.

In fact, Industry 4.0 technologies can change the sales relationship in several key ways: through longer sales cycles and broader sets of stakeholders; greater vendor involvement; new opportunities in aftermarket support; and even an expanded “product” range with new pricing models.<sup>6</sup>

## Longer cycle, more stakeholders

Industry 4.0-driven products and services are often characterized by increased complexity, a broader array of functionality and technological specifications, and capability for deeper connectivity.<sup>7</sup> Much of their value derives from their ability to integrate with other systems to provide deeper intelligence.<sup>8</sup> As such, sales often need to begin earlier in the customers’ planning process, may involve a more complex set of stakeholders, and can require a longer timeframe to realize.

Getting in early can mean the difference between making the sale—or missing out. Consider the Philips Lighting example discussed earlier. The smart lighting system needed to be incorporated within the building’s heating/ventilation/air conditioning (HVAC) and security and fire systems, among others—areas that are typically designed and decided earlier on in the process. A late addition of a lighting system affecting these systems could potentially require a redesign, adding cost and complexity for the customer and significantly lowering the chances of product selection. Thus, the sales team may need to fundamentally alter its typical strategy and process to move further up the decision-making cycle.

Given the novelty of smart, connected industrial systems, more conservative clients may require time to fully grasp the value proposition.

As a result, sales teams may also need to approach a different—and wider—set of decision-makers, adding to the time required to make the sale. Selling a smart building system can mean talking to

the IT teams, integrators, and other teams involved in actually implementing the physical elements of the new system—as well as other third-party providers, discussed in the following section. But as the Philips case suggests, it might also involve selling the benefits of overall building efficiency, employee comfort, and productivity to the end users of the new space. Given the novelty of smart, connected industrial systems, more conservative clients may require time to fully grasp the value proposition. These systems can come with a significantly higher price tag, too, which tends to require more deliberation and a wider range of sign-offs.

## Greater involvement and support from a network of vendors and providers

Large, more complex deals requiring integration of multiple systems can mean that selling extends beyond a single organization—and even the customer—to a network of contributors. In the Philips example, integration and coordination with architects, builders, the HVAC or security providers, and others would be necessary. Of course, the network of third-party vendors will vary widely depending on the product or service being sold. In general, however, because smart systems require the power of a network and ecosystem to realize their full potential, manufacturers will want to make sure their services can be incorporated into, interoperate with, or be supported by the systems of other complementary service providers.

Partnerships with other providers might be necessary for the manufacturer to successfully sell its product—but it should also provide benefits for both parties. For firms that sell predominantly through third-party distribution channels, for example, Industry 4.0 can provide insight into their clients that they did not have previously, and can arm the channel partner with new information as well. The manufacturers can use this information to enhance channel relationships; improve coordination through real-time, reliable production and delivery information to the customer; and reduce selling and administrative costs.<sup>9</sup>

For their part, sales and distribution channels will need to accommodate the increased intelligence that the data offers. To help manage this challenge, manufacturers can offer training and development to help the channels market and deliver the new offerings.<sup>10</sup> For example, electrical product manufacturer Legrand has developed an Android app to use when installing its home automation products. The app is designed so that Legrand can provide digital assistance to its licensed electricians and installers, most of whom are small firms, and bolster its reputation of easy product installation.<sup>11</sup>

In some cases, manufacturers may need to work with a different range of retailers or distributors who can deliver more sophisticated solutions. In Legrand's case, the increasing sophistication of its product range has led it to widen its channels beyond the specialist electrical distributors it has traditionally worked with. Now, it also sells through home improvement/do-it-yourself chains, IT distributors, audio-video integrators, and security systems distributors.<sup>12</sup>

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**Manufacturers who sell heavy equipment through third parties can lose sight of who owns the asset, where it is, and what it is doing.**

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## New opportunities in aftermarket support

For original equipment manufacturers that have seen value “leakage” to third-party providers of aftercare services, Industry 4.0-enabled products can help reclaim the relationship with the customer.

Manufacturers who sell heavy equipment through third parties can lose sight of who owns the asset, where it is, and what it is doing. Connected technologies can help to keep track of assets, even



if they have new owners—potentially leading to new relationships with a broader base of customers. (See the sidebar “A word on risk” for a deeper discussion on related data privacy concerns.)

This can potentially lead to higher aftermarket sales and more satisfying customer relationships that last the life of the asset, not individual tenures of ownership. “Data should help keep equipment from leaving the dealer service network as dealers have better understanding of the location and active fleet of equipment,” one bank’s equity research team notes.<sup>13</sup>

In one example, industrial tools and equipment manufacturer Atlas Copco’s FleetLink fleet management system enables it to track the location and monitor the condition of its road construction equipment.<sup>14</sup> By understanding the state of the equipment, it can send a notification that the equipment needs servicing, establishing a relationship with the new asset owner.

## New pricing models

Firms can use the data to develop pricing models based on outcome, which opens up opportunities to sell in new and different ways. If customers balk at a higher price tag, for example, the “X-as-a-service” model, with potentially no immediate down payment, can help sweeten the deal. But sales teams must also develop their own understanding of—and, in turn, be able to communicate effectively with customers about—product performance if pricing is based on it, and if the risk lies with the manufacturer to deliver.

For example, Philips Lighting signed its first lighting-as-a-service model with the Washington Metropolitan Area Transit Authority in 2013, who paid no up-front costs for the upgrade of 13,000 lighting fixtures in its municipal parking lots. Philips signed a ten-year maintenance contract to service

the lots, taking a share of the cost savings, estimated at \$2 million annually.<sup>15</sup>

Similarly, in the area of wind power generation, manufacturers are moving to risk-based pricing models. Vestas Wind Systems, a manufacturer of wind turbines, has seen nearly 90 percent of its wind turbine orders accompanied by its full-service active output management (AOM) service contracts. These have been especially popular among independent operators and financial investors, who prefer predictable cash flows, as they pay little for the installation. Vestas guarantees a specific amount of power upgrade over the life of the contract and shares the increased revenues with the operator.<sup>16</sup>

## New products and services

The digital aspect of smart, connected products means the vast amounts of data generated by the machines can become a product in their own right. New monetization opportunities can be created from selling additional analyses of data beyond the contracted parameters, or from generating new customers for the new offerings.<sup>17</sup>

Many firms making the transformation to digitally enabled products do recognize the opportunity. The issue, however, is being able to use the data to create valuable insights that drive action.

As sales teams transition to selling more data-based solutions, they may need to involve a wide range of functions across the firm to develop and price the solution. Sales teams must have a clear understanding of customer needs and usage. They will then need to work with their own engineering teams to understand the technical performance possibilities, analytics teams to model potential scenarios, and finance teams to understand pricing, especially if the manufacturer gets paid on the basis of performance improvements. Other teams may need to be involved as well, depending on the nature of the service and its target use.

# How Industry 4.0 benefits customers

THE addition of Industry 4.0 technologies allows a company to understand to a much greater extent its products' performance in the field. As an example, ABB's "next-level" mining equipment,<sup>18</sup> and Volvo Truck's WirelessCar suite of services<sup>19</sup> allow the companies to "see" consumers throughout the product life cycle. The company can use this information to offer deeper insights around operations, reliability, and planning. They can then

examine ways to align price with use, through the "X-as-a-service" model. This can lead to multiple benefits for both the customer and the manufacturer.

But this is just one illustration of the ways in which Industry 4.0 technologies can benefit the sales process. Table 1 provides additional examples of how Industry 4.0 product transformation can drive new kinds of sales and have a strong impact on the customer as well.

**Table 1. How Industry 4.0 product transformations can impact sales and customers**

Potential applications Use data and analytics to . . .	Customer impact
<ul style="list-style-type: none"> <li>• Develop customer intelligence</li> <li>• Develop intelligent pricing strategies based on customer usage data</li> </ul>	Market and sell products and services more intelligently
<ul style="list-style-type: none"> <li>• Track asset condition to optimize maintenance</li> <li>• Predict customer needs and maximize uptime</li> <li>• Enhance the user experience through sensor-enabled apps</li> </ul>	Improve the aftermarket experience
<ul style="list-style-type: none"> <li>• Work with channel partners to give them the right products at the right time to manage inventory more efficiently</li> <li>• Remotely track asset usage, performance, and location</li> </ul>	Optimize performance and distribution
<ul style="list-style-type: none"> <li>• Work with customers to innovate and "cocreate" solutions</li> <li>• Carry out regular planning with customers to quantify value</li> </ul>	Collaborate and deepen relationship with customers

Source: Deloitte analysis.

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## Improved visibility and value for customers

Manufacturers can use Industry 4.0 technologies during the sales process to gain more visibility of the product while it is being made,<sup>20</sup> how it is being customized and, after the sale, how it is deployed. This enables manufacturers to develop proactive or predictive suggestions to improve the customer experience. The data can demonstrate where changing use patterns can improve, say, jet engine fuel efficiency, rotary drill performance, or wind turbine power uprates. With this data in hand, sellers have the opportunity to offer additional services or expertise to clients, such as predictive maintenance,<sup>21</sup> or when a different machine might be more appropriate in a particular use case, for example.

In this way, sales teams are no longer selling only products, but rather a product with a suite of data-driven services. To do this successfully, they may need to go beyond their traditional focus on the technical specifications of a physical product to discuss how the overall package delivers value to the customer.

## A better understanding of what is profitable for manufacturers

Industry 4.0-enabled products can illuminate the long tail better, by generating data that enables manufacturers to see which customizations made for specific clients are profitable and which are not. This can, in turn, enable product managers and salespeople to work with finance teams to revise pricing where appropriate—and inform other changes that better serve customers and realize increased revenue.

Even as connected, smart assets can create greater value for customers and increase revenue opportunities for manufacturers, the shifts they bring to the sales process can be significant. We describe some of the potential changes for which salespeople will need to prepare in the following section.

## **A WORD ON RISK**

As Industry 4.0-enabled products create some compelling sales opportunities, they can also create risks that affect sales teams.

### ***Reputational risk***

No matter what the specific flavor of risk, be it financial, geographic, or security, anything that affects the performance and reliability of what is being sold can impact the ability of the sales teams to sell it.

If products and services fail to perform according to what is agreed upon with the customer, manufacturers can face reputational risks—not to mention legal risks. This is not particular to Industry 4.0, but the potential of smart, connected products to do so much more can correspondingly create more possibilities for offerings to fail. Sales teams, given their close engagement with clients, can be the most sensitive to this.

### ***Data risk***

Different privacy laws in different jurisdictions can have tangible implications for sales. Data can be generated in one location, and stored, managed, analyzed and directed in another. Sales teams will need to understand different legal requirements and regulations, articulate those practices to clients, and adequately address clients' security-related concerns.

It should be noted that this is more of an issue for data containing personal information. When it comes to industrial data, or machine-generated data, very little legislation or regulation exists dealing with specific ownership issues—the topic is still so new. In the European Union, most rules and regulations concern trade secrets, copyright, and privacy.<sup>22</sup>

Sales teams must clarify who owns the data and which data sets are included in the service and which fall outside. Does the manufacturer of Industry 4.0 products still own, or at least get to see, the data the products generate once they're installed at the client sites? And, once a customer buys a connected system, is it up to them to collect, store, analyze, and use the data without additional support from the manufacturer?

Firms that do not differentiate which data is included and which is not can lose opportunities to sell more involved packages.

### ***Financial risk***

Sales teams will need to work closely with their own internal data and financial teams to price the contract right. Manufacturers need to have a very good handle on performance data and a detailed understanding of how the client plans to use the product, particularly in the "X-as-a-service" models. Getting either of these wrong can mean significantly more risk and loss of margin.

# Better techniques for selling Industry 4.0–connected products

**T**HE pressures faced by manufacturers selling Industry 4.0-enabled products are not new; they are the nexus of two larger trends: digitization and servitization.<sup>23</sup> Many firms that are quite advanced in selling connected systems have seen a flip in their revenue models: the asset sale accounts for 20–40 percent of profit, and the services make up the rest.<sup>24</sup> This suggests significant opportunity, but can require real changes in what is being sold and how. We describe several opportunities below.

## Incrementally expand existing services

Organizations whose core competency includes large and complex engineering and manufacturing of products may find challenging the shift to a model where the data is seen as equally valuable, or as a product in their own right.

Firms can start with enhancements to core offerings, then pursue adjacent opportunities before finally venturing into the transformational territory. Smaller, incremental projects can often deliver a greater total value, and will work better as internal capacity in the firm expands. As they move along this transformational journey and explore new routes to revenue outside of “core” business processes, sales and marketing teams can consider several approaches.

One approach, for example, is charging for a tiered level of access to data and service provision. Companies will need to demonstrate that the addi-

tional fee is for something new that adds value, and convince their customers of the value of paying for data, something that the latter are often used to getting for free.

Atlas Copco, for example, offers three levels of access to the data it collects on its compressors. The basic level, SmartLink Service, is free, providing customers access to service logs and maintenance schedules, and allowing users to request quotes for spare parts and services. The next level, SmartLink Uptime, sends users notifications of machine indicators and can warn them when a problem occurs. The top level, SmartLink Energy, provides detailed reports on energy use, aimed at improving operating costs.<sup>25</sup>

## Consolidate product-related services

Many companies that sell “intelligence” to support their products often do so along specific product lines, across various divisions of the organization. This fragmentation can mean teams may fail to see the larger picture of how products are used, and by whom, and where specific up- or cross-selling opportunities exist.

Firms can bring all services together in a single unit, a “one-stop shop.” The goal is to provide a seamless customer experience through a single point of contact for sales and service across the full range of products. To do so, organizations may need to explore approaches such as creating outcome-

oriented teams that bring together people from various silos and perspectives to devise and deliver Industry 4.0-enabled solutions.<sup>26</sup>

## The goal is to provide a seamless customer experience through a single point of contact for sales and service across the full range of products.

As an example, Rolls-Royce created a new business in 2014, Controls and Data Services, which sells “safety critical controls and asset intelligence solutions.” It had existed for a long time as two separate subsidiaries that both centered around telematics, but on different platforms and to different markets. One subsidiary, Optimized System and Solutions (OSyS), had a significant presence in US nuclear power industries, while the other, Aero Engine and Controls (AEC), designed and manufactured engine control systems for a wide range of Rolls-Royce engines and other programs.<sup>27</sup> By combining the two entities, the new division could share R&D and create synergies across its product range and complement its existing aftercare services.<sup>28</sup>

Expanding and consolidating the sales/service teams into a single, larger business unit within the company can also be useful in protecting the emerging service culture—with its different metrics, control systems and incentives—from being influenced by the values and incentives predominant in the manufacturing organization. When firms start selling smart, connected products, it becomes ever more important for them to connect and consolidate their own service offerings. The sales team is no longer just hawking the product/service to the client but is actually providing part of the service.

## “Industrialize” the back office

Companies that start making and selling Industry 4.0-enabled products and systems may find that they need to broaden their scope beyond traditional manufacturing to incorporate capabilities around data, analytics, and software. This can necessitate acquiring new capabilities in, for example, software development, data analytics, digital interfaces, and solutions development. In these areas, a high level of “hard” technical skills are required.

### UNDERSTAND THE DATA

Manufacturing firms that excel at efficient, cost-driven production need to approach data-driven service sales with the same sense of discipline and business control. Manufacturers can get a much more detailed picture of usage patterns and can segment and customize based on very detailed parameters, such as industry, geography, or product line. They may need to have a strong grasp of asset performance, and how that affects cost and risk when developing and pricing a long-term Industry 4.0-enabled system. For their part, salespeople should be able to articulate these insights in a way that helps customers see and understand their value.

### BALANCE STANDARDIZATION AND CUSTOMIZATION

Developing an understanding of what the data says can enable sales teams to create packages tailored to customers’ specific needs. Firms will need to find the right balance between customization and standardization, and between customer needs and firm offerings.

Even more important, however, is the need for the organization and its salespeople to develop a clear picture of its suite of offerings, so they understand what is being offered, to whom, and how successfully its various offerings are performing—illuminating new product and service ideas, or potential failures that can be addressed.

One heavy equipment manufacturer, for example, had thousands of effective variations to its products after customizations—and no idea how

profitable the variations were. The Industry 4.0 technologies used in its products helped it understand where it could reengineer a product to improve performance and profitability, where it could shift customers into a more standardized product and service package, and where it could discontinue specific product lines.<sup>29</sup>

#### MAKE SURE THE PRICING IS RIGHT

The financial logic of selling Industry 4.0-enabled systems is different than selling products alone. The data and the insights they generate become their own “product.” Sales teams will need to work with clients to understand what has value to them, and with their own teams to price it right.

This is one of the more difficult aspects to get right at the start and will likely require refinement

over time. At the outset, firms will have to increase their tolerance for results not proceeding perfectly to plan.

#### ASSEMBLE MIX OF HARD AND SOFT SKILLS

As sales move from an arm’s-length, transactional approach to a longer-term, consultative relationship with the customer, firms must hire—or seek to retrain—people with the right mix of technical, analytical, communication, and business skills.

The smart, connected product has become a means to deliver customer value. The success or failure of this depends on the manufacturer making changes not only to its product offering but also to its organizational structure, culture, and talent mix to create an integrated, longer-term customer engagement process.

# No longer a hard sell

AS organizations shift toward Industry 4.0-driven products and services, it will be increasingly important to develop a sales force that can deliver state-of-the-art solutions that utilize some of the aforementioned tactics: know the client, start the sales process earlier, expand the scope of relationships both within and outside of the customers' organization, explore new service offerings, develop a strong understanding of the data and the possibilities, and start with smaller pilot programs to demonstrate value. Doing so requires a shift in thinking, and a willingness to change the sales mind-set.

As part of an effort to work with a major financial services client, Philips Lighting demonstrated that its sales teams were able to adjust their approaches to deliver a complex, tailor-made solution. Philips built on the relationship it had had with Citibank since 2005 to install a smart lighting solution in the bank's EMEA headquarters in London. In 2012, it commenced a pilot program to install a bespoke lighting solution in two floors of one of the two-building Citigroup Centre. The pilot program enabled Citi to validate the energy savings and overall effectiveness of the solution before agreeing to a larger rollout. An additional 11 floors then had the same lighting system installed by 2015.

Philips had also made technological improvements to its lighting solution that enabled it to retrofit the floors and install the new lighting outside of office hours, thus reducing downtime. Continuous monitoring and analysis of the data meant Philips could understand how the space was utilized and its sales teams could recommend where additional modifications could generate savings. The result was an average savings of 40 percent of energy

costs, meaning Citi was able to recoup its investment within three to four years.<sup>30</sup>

The result was an average savings of 40 percent of energy costs, meaning Citi was able to recoup its investment within three to four years.

As data has moved from being the by-product of a process to a source of value in its own right, it has enabled a more detailed understanding of how customers use the machines, and resulted in the ability to tailor solutions to create more value. In this way, the relationship manufacturers have with customers has shifted, from reactive to proactive to predictive. It has helped bring clients back into longer-term, higher-margin contracts and significantly enhanced the sales proposition.

Manufacturers may not get this relationship just right in the early days, but they can use the experience to invest and learn: incorporating new types of skills for the staff, new ways of selling for the teams, and potentially new business partnerships with the clients. The results, when successful, can mean new business opportunities and revenue streams as well as a longer-term focus on shifting customer concerns, collaboration, and creating value.



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