



SCHNEIDER ELECTRIC: CONNECTIVITY INSPIRES A DIGITAL TRANSFORMATION

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CASE STUDY

*an in-depth description of a firm's approach to an IT management issue
(intended for MBA and executive education)*

INTERNET OF THINGS
DIGITAL TRANSFORMATION
PLATFORM AS A SERVICE
ANALYTICS
ARCHITECTURE

This story traces Schneider Electric's journey to becoming a digital company. It highlights the company's development of an IoT platform to support asset performance management and other information-based services. It also describes the organizational changes accompanying Schneider Electric's transformation from an electrical products company to a digital company.

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SCHNEIDER ELECTRIC: CONNECTIVITY INSPIRES A DIGITAL TRANSFORMATION

At the World Economic Forum in 2016, Jean-Pascal Tricoire, the chairman and CEO of Schneider Electric, described the opportunities that digital technologies had opened up for his energy management and automation company:

Connectivity is not new for us. We started to connect things to the Internet in 1995. But what is happening today is that we are connecting from power plant to plug—everything is connected to the Internet ... That means we can bring customers new value, new capabilities, and a lot of new services.¹

People throughout Schneider Electric recognized that the Internet of Things offered massive new opportunities to monitor and analyze the performance of connected assets as part of new digital business service offerings. It was not apparent, though, which services would excite customers so much that they would be willing to pay for them. Moreover, to offer an integrated set of products and services, leaders knew that the company would need to make enormous changes to the way it operated:

We must design an organization that can deliver new business models—even though we don't know exactly what those business models will be from the outset.

—HERVÉ COUREIL, EXECUTIVE VICE PRESIDENT, INFORMATION SYSTEMS

In late 2016, Schneider Electric was piloting with fifty customers the first digital business service offering built on its new digital services platform: asset performance management as a service, which was branded EcoStruxure™ Asset Advisor. EcoStruxure™ was the name given to the company's IoT-enabled architecture and platform, which delivered enhanced value around safety, reliability, efficiency, sustainability, and connectivity to customers.

1 "The Digital Transformation of Industries," video of a panel at the World Economic Forum Annual Meeting 2016, 59:34, Davos-Klosters, Switzerland, January 20, 2016, <https://www.weforum.org/events/world-economic-forum-annual-meeting-2016/sessions/the-digital-transformation-of-industries/>.

EcoStruxure™ Asset Advisor collected structured (from sensors) and unstructured (from logs completed by maintenance people) data on the set of Schneider Electric products at a given customer's site. Using a dynamic risk monitoring algorithm, the system was able to detect operating risks and drill down to find the source of the risk. This offering represented an early but critical step in developing new business models. In developing the capability to deliver EcoStruxure™ Asset Advisor, Schneider Electric had adopted new roles and processes that would fuel ongoing business model innovations.

BACKGROUND

Founded in 1836, Schneider Electric SE was a global specialist in energy management and automation. In the 21st century, the company had grown dramatically through a series of acquisitions that transformed its historical portfolio of discrete electrical distribution and industrial control products into high-technology products intended to drive operational and energy efficiency for its customers.

Headquartered in France, Schneider Electric's 144,000+ employees operated in more than 100 countries. In 2016, it generated revenues of €24.7 billion. Traditional markets in Europe and North America provided a little more than half that revenue, with the rest generated in Asia-Pacific and emerging markets.

In 2016 Schneider Electric assigned P&L responsibilities to forty-eight lines of business organized into three Businesses that closely reflected its customer segments: Buildings and IT (serving builders and managers of residential and non-residential buildings, including data centers), Infrastructure (e.g., for energy utilities), and Industry (industrial firms and original equipment manufacturers). Products were developed, manufactured, and distributed by the lines of business.

Local sales and field services staff were organized under five regional presidents: Europe, North America, China, France, and International. A separate sales team sold products and solutions to a small set of global, strategic accounts. The company essentially served customers using two business models: **products** were mainly sold indirectly, through partners and large distributors that provided reach to many small and medium-sized customers; **solutions** (systems and services) were sold directly to large end users.

Schneider Electric's acquisitions in the early 2000s had provided valuable competencies for a strategic redirection into energy management solutions. In 2016, solutions accounted for about 45% of revenues.² However, the acquisitions had also created a more complex company that could not readily integrate products and services across the company. Starting around 2009, management attacked that complexity through a series of initiatives focused on reducing business silos and facilitating sales integration. Particularly important was the adoption of a Salesforce platform that enabled cross-selling and greater transparency of customer data.³ Also helpful was the ongoing consolidation of ERP systems (i.e., ERP federation) from hundreds of instances down to twelve. But that was just the start of a long journey towards the creation of new digital business services:

It may take longer, and it's probably more complicated than we thought. But we haven't reconsidered once. We know digitized services is the way forward. It's partly defensive, partly offensive, but there's no question.

—HERVÉ COUREIL, EXECUTIVE VICE PRESIDENT, INFORMATION SYSTEMS

2 "Schneider Electric at a glance," Schneider Electric SE, <http://www.schneider-electric.com/en/about-us/investor-relations/new-investor/overview.jsp>.

3 For more information on earlier transformations see A. Karunakaran, J.G. Mooney, and J.W. Ross, "Accelerating Digital Platform Deployment Using the Cloud: A Case Study of Schneider Electric's 'bridge Front Office' Program," MIT Sloan CISR Working Paper No. 399, January 2015.

DIGITAL BUSINESS SERVICES

By 2000, most of the electrical products Schneider Electric was manufacturing (e.g., switches, circuit breakers, transformers) had sensors. Thus, while the Internet of Things was creating increased opportunities for collecting, moving, and analyzing data, remote monitoring (e.g., monitoring a device remotely) was not a new idea.

Indeed, IoT offers sold under the EcoStruxure™ banner (connected products, edge control, software, and analytics) represented about 45% of Schneider's revenues by the end of 2016.⁴

We look at IoT today like something very new, but remote monitoring already exists on premises, in plants, in factories. You've got a network of devices, sensors, PCs, speaking with a central system that is doing some monitoring and controlling.

—CHRISTOPHE CLERC, BUSINESS ENGAGEMENT DIRECTOR, DIGITAL SERVICES

In fact, remote monitoring had been the norm in the industry up until 2016. Both Schneider Electric and its competitors were packaging monitoring capabilities with their products. But remote monitoring was largely a device-by-device service—each product set off alarms when it malfunctioned. That was useful for identifying when a particular piece of equipment needed to be fixed or replaced, but it did not help customers anticipate problems or manage energy more efficiently across a system of devices. It did not present a unique value proposition:

Remote monitoring services were free and promoted to increase product pull-through: "There might be a failure, and your warranty is expiring. Let's talk about replacing the equipment."

—JEAN-PHILIPPE BONNAFOUX, VICE PRESIDENT, DIGITAL CUSTOMER EXPERIENCE, END USERS, AND CONNECTED OFFERS

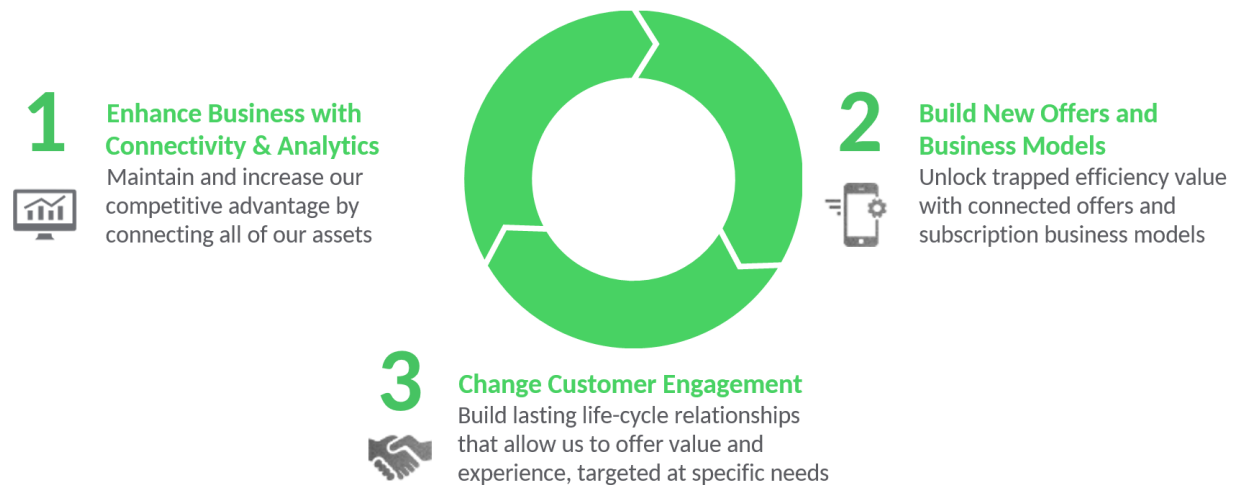
In contrast, Schneider Electric leaders viewed IoT as a game changer. Massive amounts of data from multiple devices presented opportunities for new value propositions (see exhibit 1 for the three key types of value propositions):

In 2014, we started to talk about connectivity to connect the dots between our own IT, the digital customer experience, and our offerings. We started to think about our digital offerings and, as a consequence, our business models.

—CYRIL PERDUCAT, EXECUTIVE VICE PRESIDENT, DIGITAL SERVICES AND IOT

⁴ For more detail on Schneider Electric's IoT strategy, see Cyril Perducat, "Reinforce our core and create value with the IoT" (presentation, 2016 Schneider Electric Investor Day, London, UK, October 27, 2016), http://www.schneider-electric.com/ww/en/Images/iot-investor-day-2016_tcm50-277812.pdf.

Exhibit 1: Schneider Electric IoT Strategy in Three Ideas



Source: Perducat, "Reinforce our core and create value with the IoT."

The idea behind EcoStruxure™ Asset Advisor was that customers could benefit from a sophisticated analysis of the sensor data produced by an integrated set of assets from Schneider's diverse product lines:

- Energy distribution products like circuit breakers and transformers
- Metering products that measured energy consumption
- Building management products like HVAC or entry access controls

EcoStruxure™ Asset Advisor would allow a facility manager to manage the performance of assets directly or to rely on a Schneider Electric service center to oversee asset performance management.

DEVELOPING NEW DIGITAL BUSINESS SERVICES

To identify new breakthrough opportunities in digital services, management initially encouraged individual business units to experiment with new solutions. Product development staff in the business units identified digital enhancements to products and worked with customers to understand their expectations. Individual lines of business funded these early efforts and ideas proliferated:

At the start, it was probably the right way to go, to say to the businesses that they could do what they had to do: have local initiatives, have local success, local failures sometimes. They could make decisions and learn.

—CHRISTOPHE CLERC, BUSINESS ENGAGEMENT DIRECTOR, DIGITAL SERVICES

This approach generated some successes. In particular, the Data Centers business introduced its Data Center Infrastructure Management (DCIM) solution, which offered an integrated set of monitoring systems for managing energy in data centers. Forty percent of the ongoing cost of managing a data center is energy and availability, so this kind of solution possessed a strong use case. And data center customers were eager customers:

We've done really well in data centers because of the nature of the customer base—large cloud providers ... They are technology savvy and very demanding. Connectivity and innovation is their world. We were pushed by our ecosystem to develop intelligent systems, and our DCIM software was the lead-in.

—JEAN-PHILIPPE BONNAFOUX, VICE PRESIDENT, DIGITAL CUSTOMER EXPERIENCE, END USERS, AND CONNECTED OFFERS

In general, however, the business unit-driven approach was not working well. The proliferation of local offerings was not building significant new revenue streams, nor, more importantly, strategic capabilities. Cyril Perducat, who was tapped to lead the corporate effort around digital services, described the core problem:

Everyone across the company is trying to reinvent digital for our products, so everybody is establishing partnerships with different start-ups offering all types of all technology innovations. But this results in multiplication of partnerships, multiplication of cloud providers, multiplication of connectivity protocols, anything you can imagine in digital. This multiplicity is great, but we need to ensure there are economies of scale for everyone.

—CYRIL PERDUCAT, EXECUTIVE VICE PRESIDENT, DIGITAL SERVICES AND IOT

Perducat's Digital Services Transformation (DST) team took responsibility for mapping out the company's digital strategy and creating the reusable enterprise capabilities needed to deliver on that strategy. The CEO's concerns shaped the team's approach to building capabilities:

Jean-Pascal [Tricoire] told me, "Fix this and bring it under one umbrella." And to achieve that, I think we need a platform.

—CYRIL PERDUCAT

BUILDING A DIGITAL SERVICES PLATFORM

Among Schneider Electric's leaders, Perducat found enthusiastic support for a digital platform. He noted that individuals had different perspectives on the nature of that platform:

Some people will call it an IoT platform; others will say it's a cloud platform; some others will say it's a connectivity platform. Some will say it's analytics. Those are all different angles of the same thing.

—CYRIL PERDUCAT

Perducat wanted his organization to build reusable services that could both contain costs and accelerate delivery of new business offerings. His definition of the platform incorporated the views of the rest of the company:

It's a set of capabilities that goes from the product to the cloud and enables more intelligence and ultimately enables services. It's how we will connect, collect data, transform data into information with analytics, and then close the loop with business systems.

—CYRIL PERDUCAT

Schneider Electric leaders were committed to investing up front in a platform that would deliver benefits over time. In their view, the platform would offer a repository of reusable technical capabilities. As a result, Perducat initially thought that building a digital services platform would be primarily a technology challenge:

I started purely with technical resources. I had a team of people doing remote connectivity; I had some people that had started to do things around a cloud platform, in partnership with Microsoft. I had some other people working on analytics. So there were different pieces of things, but the common theme was that it was centered on technology.

—CYRIL PERDUCAT

The platform would also need to be able to connect with products not manufactured by Schneider Electric. The plan also included the ability to open the platform to an ecosystem of third-party developers in the future.

Perducat's DST team set about culling external partners to reduce partner variety, and developing shared capabilities concurrently with customer service offerings (e.g., dashboards, analytics, customer apps, energy management software tools). They found that indeed, the technological requirements for digital business services were significant. But many of the toughest technology challenges were being addressed at the infrastructure level. Core infrastructure was the responsibility of Hervé Coureil's Information and Process Organization (IPO):

Everything that touches integration [of core processes and data] is done by IPO. Everything that touches the development of new offers is with the DST team. I'd say it's working pretty well.

—HERVÉ COUREIL, EXECUTIVE VICE PRESIDENT, INFORMATION SYSTEMS

Coureil assigned Alfons Marquez, Vice President for Software and Digital Services, primary responsibility for building four crucial platforms needed by the DST team to build and operate digital business services: (1) identity, (2) complex event processing, (3) subscription (billing), and (4) cybersecurity.

The **identity** platform elaborated on an existing database of installed assets. It associated customer data with product data, and in doing so provided a complete picture of a customer's devices. It also distinguished devices manufactured by Schneider Electric from those of other manufacturers. And to develop a valuable identity platform, Schneider Electric needed to install sensors on many of its older devices that were not yet connected to monitoring systems:

What we are doing first is we are connecting the equipment to the Internet. Once you connect it, you monitor it from our platform, and from there we perform analytics on it. From there we go back to the client with predictive maintenance recommendations.

—JEAN-YVES LAGARDE, VICE PRESIDENT, DIGITIZED FIELD SERVICES, AND ECOSTRUXURE™ ASSET ADVISOR GM

The **complex event processing** (CEP) platform allowed the company to "close the loop" by automatically routing signals from sensor data and related analytics to appropriate operational support systems and staff.

The goal of the CEP platform was to connect signals produced by IoT-enabled devices with Schneider Electric's back-end processes in order to generate events (e.g., the dispatch of a field service engineer, the subscription to a new service).

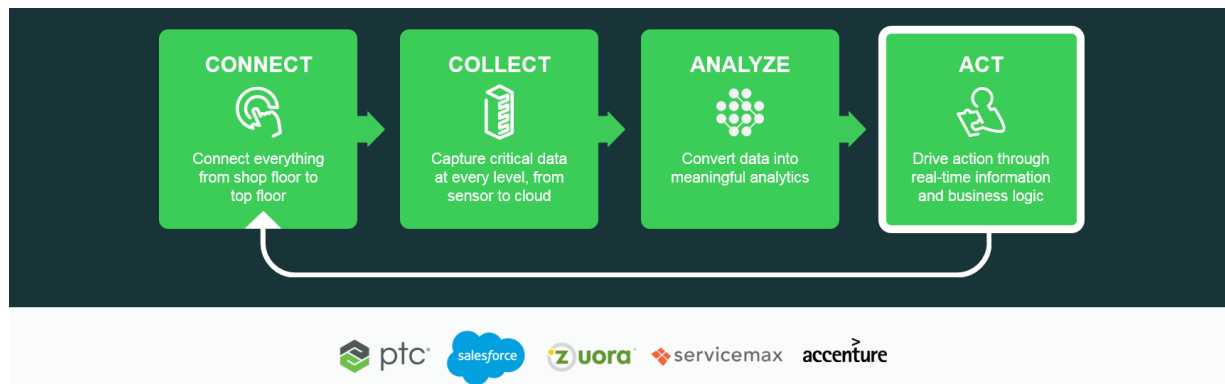
The real magic of a CEP system is that you're driving the event to the right field service engineer—somebody who's on duty in that area, who preferably has the right spare part. Sounds ridiculously simple. But it's super complicated. We call this "closing the loop."

—HERVÉ COUREIL

Exhibit 2 summarizes the CEP concept.

Exhibit 2: EcoStruxure™ Platform Bridges the IT/OT Gap

Translating data into actionable intelligence and better (actionable) business decisions



Source: Perducat, "Reinforce our core and create value with the IoT."

The **subscription** platform was essential for supporting the company's transition to business models built on recurring revenue from the sale of on-demand services. This platform provided a billing engine that allowed microtransactions, including a credit card transaction of a mere \$5:

Billing is super complex, and Billing is a core functionality, because that's where you have a lot of data about usage.

—HERVÉ COUREIL, EXECUTIVE VICE PRESIDENT, INFORMATION SYSTEMS

Cybersecurity was a perpetual concern. Schneider Electric had long focused on ensuring the security of its own data. Delivering digital services meant that the company needed to protect customer data as well. To succeed with an IoT model, Schneider Electric would need to allay the significant security concerns of its customers. Coureil noted that customers would constantly be assessing the potential value of the services that they received against having to share their data:

We all have our iPhone, and we constantly do privacy and convenience trade-offs. Do I let Google track me with Google Maps? It's convenient, but I'm giving away data and privacy. I think you have the same kind of trade-off in a company. You have to create a value proposition that's meaty enough, so that the customer feels it's worthwhile.

—HERVÉ COUREIL

Marquez's teams connected these four platforms to Schneider's existing CRM and ERP platforms. In doing so, he was reaping the benefits of the earlier transformation initiatives that had simplified Schneider Electric's technology platform:

This is huge because it means that, except for ERP, it's just one integration. ERP is 1 integration x 12, but that's better than it was. If it was not in place, I have no idea how we would even start at this stage. That's the beauty of a platform.

—HERVÉ COUREIL

Meanwhile, as Perducat's team started to build out digital services and Schneider's digital services platform, they found that the technical issues were more readily resolved than the organizational issues.

SELLING THE PLATFORM AND SHAPING DEMAND FOR DIGITAL SERVICES

Given the long history of business unit autonomy at Schneider Electric, Perducat recognized that he would have to build business unit enthusiasm for an enterprise digital services platform. The business units had been encouraged to create digital services locally. Those businesses that were furthest along were initially unenthusiastic about shifting to a corporate platform. Perducat noted that it was easier to bring on board business units that had not yet built anything:

When we started from scratch, we didn't have to tell them, "Well, you built a standalone cloud infrastructure, but look, we have decided to partner with Microsoft. So we'll have to translate all that you have done to a Microsoft context."

—CYRIL PERDUCAT, EXECUTIVE VICE PRESIDENT, DIGITAL SERVICES AND IOT

In general, however, prototypes that had been built within business units were expensive and prone to scalability and security issues. Perducat started selling business leaders on the value of “sharing the risk of failure with somebody else in the organization.” As lines of business turned to the Digital Services Transformation team for support, they initially submitted requirements for projects already in progress and the DST team built services accordingly. But this approach did not lead to successful, important digital business services:

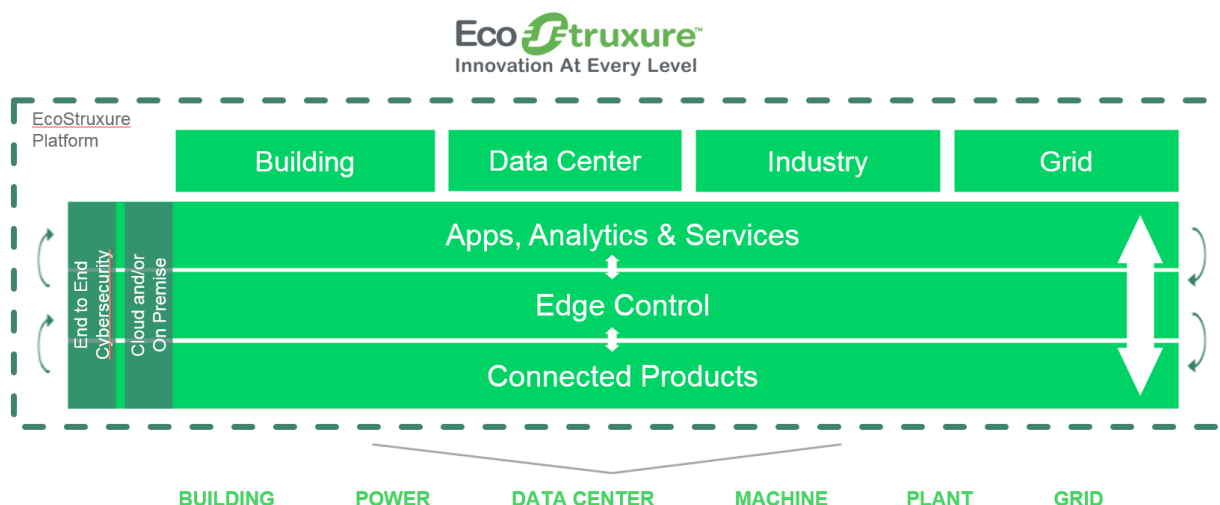
We were not creating more demand. We were not creating more projects, because we were purely relying on the fact of the business deciding to start a new project. We were in the platform adoption model.

—CYRIL PERDUCAT

To generate more strategic innovations, Perducat expanded the mandate of his team beyond platform adoption. He adopted a funnel model to surface the most promising innovations using three stages: ideation, incubation, and industrialization. His goal was to continuously—and rapidly—move offerings through these three stages, killing off projects that didn't demonstrate a viable business case.

Perducat established six digital clusters across business units and sales organizations to work with his team to generate ideas and guide them through the funnel that would deliver value from Schneider's EcoStruxure™ (see exhibit 3 for an overview of the three innovation layers of EcoStruxure™). Each cluster was a virtual team organized roughly around a market segment with potentially similar or related needs. Most clusters had membership across multiple business units and all were headed by a business leader.

Exhibit 3: Three Innovation Layers, Four End Markets, Six Architectures



Source: Perducat, "Reinforce our core and create value with the IoT."

In **ideation** DST members worked with the business units and selling organizations in a cluster to generate myriad ideas for new offerings. Some ideas emerged from concepts jointly explored with a customer, while others were formulated by the cluster or DST members based on reported customer needs, problems, pain points, and desires. In the future, customer insights gained from the new digital services might generate ideas:

Once we have these products connected, and we extract a lot of data from them—how the customer uses them, how the product is performing—these data eventually become the basis of good insights to redesign the products.

—CARLOS JAVARONI, IOT BUSINESS DESIGN DIRECTOR

During ideation, the team structured and documented ideas with an eye towards identifying recurring and similar ideas. These were candidates to become reusable services. Once a cluster had accumulated 40–60 ideas, the ideation phase culminated in a two-day workshop to discuss the ideas. Workshop participants did not vote on which ideas would proceed to incubation. Instead, the DST leaders used input from the workshop to identify the 2–5 highest-potential ideas to take forward.

In the **incubation** stage, cluster and DST members developed what they called “demonstrators”—a combination of mock-up, proof of concept, and prototype. They engaged customers in reviewing demonstrators so they could learn what a customer would find valuable enough to pay for:

We need to make sure we hear from customers from the beginning, so we know if the idea will result in an offering, and more important, if customers are getting insights and if they are willing to pay for this type of solution. In several cases, we have gotten very positive customer feedback, but it’s not necessarily enough for them to spend money on it.

—CARLOS JAVARONI

During ideation or incubation, new offerings were assigned a product owner. This owner would take responsibility for the product’s commercial success and continue to develop it over time:

We try to avoid a situation where we have a handover from one group to the other. What we have are gates to see if the project is mature enough to move to an incubation phase or an industrialization phase, but these gates are not a handover from one team to the other.

—CARLOS JAVARONI

The goal of the incubation phase was to initiate a pilot that a customer was willing to fund—given the value they received in return. At that point, technologists joined the team to put a solution into place.

Following a successful pilot, Schneider Electric would move an offering into **industrialization**. Scaling up a digital service was a complicated and possibly risky venture. To provide the sophisticated ongoing customer support that digital services like EcoStruxure™ Asset Advisor required, the company needed geographically dispersed service bureaus with analytic capabilities.

When we scale we have to have service bureaus in multiple geographies. We don’t want to end up in a situation where we have to invest €100 for something for which the customer is only willing to pay €10. We don’t want a mismatch between the perceived value and the cost to deliver this value.

—CYRIL PERDUCAT, EXECUTIVE VICE PRESIDENT, DIGITAL SERVICES AND IOT

In time, the company would be able to develop AI solutions to reduce the costs of staffing service bureaus, but that capability was not imminent. As of the end of 2016, one subscription-based digital service—EcoStruxure™

Asset Advisor—was nearing global rollout on the new Digital Service Platform, but many other offerings were quickly moving towards adoption.

Schneider Electric's leaders recognized that the company would need to introduce organizational changes to ensure sales growth and profitability as they took more EcoStruxure™ Asset Advisor offerings from incubation to industrialization.

SELLING AND SERVICING DIGITAL SERVICES

Digital services represented a very new value proposition for Schneider Electric's customers. In the past, customers would make a one-time purchase of a product that was nearly maintenance-free. Going forward, rather than products, customers would be offered a solution to a business problem (e.g., energy management). This meant that salespeople needed to establish customer relationships that were outcome-based rather than transaction-based.

At the time, the new value proposition presented a challenge not just for Schneider Electric's own salesforce but also for its value chain partners, who sold products to small and medium-sized end customers. Schneider's value chain partners recognized the potential disruption digital services entailed:

You might know that the value is there for the end customer, yet there are so many partners or intermediaries that fear being cut out of the value chain. And they don't know how to sell that new value proposition. Education and change management are as critical as the technology evolution.

—JEAN-PHILIPPE BONNAFOUX, VICE PRESIDENT, DIGITAL CUSTOMER EXPERIENCE, END USERS, AND CONNECTED OFFERS

The company saw the need to invest in training to sell new digital service offerings:

We had to train our partners, to educate them to sell such a service. But also in our field service department, our service people were more trained to sell field services that are electromechanical-based services, like maintenance contracts. We had to educate our own service salespeople about this new approach of connecting devices and the future of digital services.

—SEBASTIEN CUGNET, VICE PRESIDENT, FEEDER AUTOMATION

Initially, the salespeople who worked with global strategic customers were leading sales of products like EcoStruxure™ Asset Advisor. Companies that were piloting the full EcoStruxure™ Asset Advisor offering were receiving valuable insights on their operations. Most of the pilot sites, however, had signed up for just part of the offering (such as collection and analysis of performance data) within the customer's firewall. Additional features of EcoStruxure™ Asset Advisor brought additional value for the customers that were willing to also leverage the cloud.

You have some customers that are early adopters and willing to share data on the cloud, as they see the value they can get with data analytics. Yet there is the question of who owns the data, particularly in Europe—the customer or the service provider. Some customers are not yet ready to leap forward, because some of the information is fairly proprietary and very core to their business.

—JEAN-PHILIPPE BONNAFOUX

As Schneider Electric introduced new selling propositions, management was debating metrics for success. Revenues from digital services were an obvious indicator, but management also wanted to track progress in customer connectivity. One simple option was to count the number of connected assets, but it wasn't clear that the number of assets would necessarily indicate the impact of connectivity:

If one plant is connected with five devices or one hundred devices, I'm not sure it makes a huge difference. Once I'm in the plant and I'm connected to those five, ten, or twenty critical assets, I may derive as much business as if it were one hundred assets. It's the quality of the connection more than it is the quantity of connections. At least on the B2B side. Those assets are associated with critical processes that cannot afford downtime or catastrophic failure.

—JEAN-YVES LAGARDE, VICE PRESIDENT, DIGITIZED FIELD SERVICES, AND ECOSTRUXURE™ ASSET ADVISOR GM

LOOKING AHEAD

In late 2016, Schneider Electric was still generating the vast majority of its revenues from business models other than subscription to digital services. Thus, deciding when to ramp up resources in DST, global sales, and distributed service centers always involved a delicate cost vs. opportunity balance. The commitment to digital services had, however, gained profound traction in the company.

DST had delivered ten reusable services—with assigned service owners—that could be leveraged in new offerings. Those reusable services accelerated the delivery of digital service offerings. However, most new offerings required DST to allocate more development resources to project-specific efforts:

The marketing people, the service people, the technology teams in the businesses, they are all coming with new offers and requirements that are very often ahead of what we have available. We have to connect the dots and manage the timing and prioritize what makes the most sense from a business standpoint. It's the name of the game.

—CHRISTOPHE CLERC, BUSINESS ENGAGEMENT DIRECTOR, DIGITAL SERVICES

In addition to building reusable services and developing new capabilities, Schneider Electric found that it also needed to transform its culture. Over its history, the company had built a culture of product excellence. A culture focused on rapid delivery of customer solutions is very different and not entirely comfortable:

R&D will take time to release a product, because it has to be more than perfect. And with good reason. Our products have safety functions. Then you have the world of software which says, "Okay. Let's experiment. Let's iterate. Let's do it like startups do. Let's give them a Minimum Viable Product." There's no love lost. Connecting the two is one of the interesting challenges of business leaders.

—HERVÉ COUREIL, EXECUTIVE VICE PRESIDENT, INFORMATION SYSTEMS

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