



Schneider Electric Innovation Summit Paris 2018

Research Report



We are living in the most exciting time of our lives: a digitized world where everything can be connected – products to people, products to products, product to cloud or what we like to call IoT. Schneider Electric is leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries. One of the most important roles we can play is enabling our customers, with our incredible portfolio of partners, to leverage the full potential of IoT to make their businesses safer, more reliable, connected, efficient and sustainable. With EcoStruxure, our IoT-enabled, plug-and-play, open, interoperable architecture and platform, we can bring this to life to deliver true business value for our customers.

Chris Leong
Executive Vice President,
Global Marketing, Schneider Electric

As the world's number one business and financial news network, CNBC plays an essential role in delivering actionable insight and analysis to the world's business leaders. A key function of our coverage is to highlight the opportunities transformation delivers to business. We are delighted to be able to delve deeper into these opportunities by partnering with Schneider Electric to deliver this comprehensive report complementing the panel debate curated by CNBC at the Innovation Summit.

KC Sullivan
President, CNBC International



Introduction

Evidence of the fourth industrial revolution is all around us.

The key technologies powering Industry 4.0 are entering the home, the office and the factory at an accelerating pace. Artificial intelligence, mixed reality, and the internet of things are reshaping business processes, unlocking opportunities and encouraging new business partnerships.

A rich ecosystem of tools, organizations and experts is paving the way to a healthier workplace, efficient businesses and a greener planet.

Making the most of new technology requires openness, agility, collaboration and a clear understanding of the benefits that digital transformation will bring.

This report explores these benefits in four areas:

- Building
- Industry
- Infrastructure
- Data Center

CNBC Catalyst sent two analysts to the Schneider Electric Innovation Summit in Paris, on 5th and 6th April 2018. They attended keynote presentations, liaised with Schneider engineers and participated in product demonstrations.

In addition, the analysts filmed interviews with 15 key customers of Schneider Electric during the event, and explored critical factors that enable successful digital transformation across Building, Industry, Infrastructure and Data Center.



If you are not digital it will be very difficult to be competitive in industry, or in the buildings you produce. Because what you are building is here for the next 50 years, and it has to be green, smart, and automated.

Jean-Pascal Tricoire, CEO of Schneider Electric, speaking during the CNBC IoT debate



Building Management System (BMS)

BMS provides a common language for all devices in a smart building to 'talk' with each other. The BMS has open architecture which allows it to send data to a Building Energy Management System (BEMs), which processes the data at a more complex level.

Buildings Re-Invented

A new breed of living buildings is appearing. EcoStruxure for Buildings is making this transformation possible by enabling sustainable design and Active Energy Management – creating modern, more sustainable cities.

[Click here to watch the Building Strategy Talk at the Paris Innovation Summit.](#)

35% | Decrease in short-term sick leave in well-ventilated buildings

42% | Hotel guest complaints are room related

29% | Potential reduction in unscheduled maintenance

30% | Potential engineering time saved

Building

Connected buildings blend the physical and digital worlds and create a wealth of opportunities through data collection and analysis. The data is fed into intelligent, real-time dashboards that provide a rich picture of how the building is performing.

The benefits of connected buildings include:

- smart ventilation systems that improve health and safety
- smart lighting that saves energy
- smart garages that tell you where to park
- more productive use of space through initiatives such as hot desks

Facility managers are the main beneficiaries of this revolution. They gain a comprehensive and highly revealing view of a building, enabling them to play a more strategic and proactive role. They have immediate insights on a building's performance and can access all the operational information they need.

For example, reports can easily be viewed on smart phones, while predictive maintenance avoids manual inspection and can reveal faults that might otherwise go undetected. Action can be taken before there is a power outage, and energy wastage can be prevented because faults can be quickly identified and resolved. The result is a significant saving in both time and money.

With a new, efficiently-operational macro view of the building, the role of the facility manager becomes a key strategic asset. The manager is proactive rather than reactive – and able to focus on integrating facilities into other business areas.



We're using technology to help us make better decisions. We've signed up to a global platform with Schneider Electric. We take all of our invoices, and put it into one system, which then starts to give us baselines, performance targets, potential goals in the future around carbon, around water and around waste. We didn't have that level of sophistication before. Now with this new data we can say 'okay we know what we're using, how do we improve that?'

*John Conlon, Head of Engineering and Facilities,
Marriott International*



**Click here to understand how
EcoStruxure™ ensures efficiency for
Marriott International.**



Marriott International

42% of guest complaints come from room related issues. Higher efficiency in hotel and room management will increase guest satisfaction and reduce complaints. We spoke to John Conlon, Head of Engineering and Facilities and Edwin Duijvekam, Director of Engineering, Marriott International. They explained how smart buildings promote innovation and efficiency in the hospitality sector.

The facility team at the hotel is now working with portable devices such as laptops and tablets, focusing on diagnostic work alongside performing checks and improving energy efficiency remotely. A mobile building management system (BMS) is invaluable as staff no longer have to sit behind desks and can move around the hotel and attend to the comfort of guests. The facility management team will play a strategic role by helping the hotel achieve its sustainability goals and implement a more effective BMS.

Beyond increasing operational effectiveness, the connected hotel creates a more personalized experience for guests. This is crucial in an age when people expect the same tailored and digitized service that they receive from innovators such as Netflix and Amazon. Guests at Marriott International are given a mobile key that acts as a digital gateway to their personalized profile. Rooms are prepared according to preferred room temperature and stocked with products to a guest's personal tastes. Curtains and blinds are automated, check-in is done via face recognition and fingerprints, and a partnership with Alexa allows added functionality and personalized experiences.

Industrial Internet of Things (IIoT)

Industrial companies are embedding intelligence into equipment and unlocking the productivity gains of smart machines and the smart factory. They are enjoying the benefits of greater visibility over how equipment is used, a deeper understanding of the supply chain, and optimized control over monitoring and diagnostics.

Intuitive Industries

How can we digitally improve the end-to-end productivity of industrial automation in production? From AI to data aggregation, hear from Schneider Electric experts about the predictive potential of digitization in industry.

[Click here to learn the Intuitive Industry strategy that enables dynamic control for better business results.](#)

50%

Potential productivity increase with smart machines

2 million

Schneider Electric software licences across 100k+ sites worldwide

4 trillion

Industrial transactions processed and stored by Schneider Electric daily

Industry

Self-aware machines powering the fourth industrial revolution are here. But making the most of them requires creativity, agility and openness.

Being creative means focusing on people and their needs. This can be challenging because industry has tended to be very product-centric. However, by engaging with stakeholders at every stage of digital transformation, industry can learn to be more people-centric.

Agility involves moving away from waterfall-based project management. In an industrial setting, it means decreasing time to market, while also building something credible that can scale to meet global demands. Invention starts with many small initiatives that combine to build mass and momentum.

Openness underpins both creativity and agility. Open standards give industry leaders the reassurance that the data generated by their connected systems is their own. The data is not buried in silos and is portable. This helps to build an ecosystem of partners, suppliers and experts who can share data wherever possible and work collaboratively.

It also affords greater continuity, from design and build (Capex) to operation and maintenance (Opex), and creates new levels of efficiency throughout the asset and operations lifecycles. The most compelling benefit is the opportunity to move to a service-based business model. This helps companies develop unique selling points and competitive advantages, rather than being a commodity supplier competing on price alone.



EcoStruxure™

Innovation At Every Level

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The initial timeline for the upgrade was far shorter than a traditional approach, and the team still managed to complete it early, even completing a second 100% checkout in the field. Getting back online early granted us two full extra days of production.”

Dave Caldwell, tech center Foxboro subject-matter expert for Dow Performance Silicones



Dow Corning

We spoke to the team at Dow Corning about how they improved their operational efficiency, reliability, safety and profitability with EcoStruxure Plant, part of Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

Dow Corning's site in Carrollton, Kentucky, is one of the largest silicone materials production facilities in the world.

The firm wanted transparent upgrades with the aim of maintaining the human-machine interface so that, in addition to producing faster results, the upgrade would provide a more seamless experience for Dow Corning's operators and engineers.

Dow Corning reduced Capex by 50% and the speed of implementation resulted in two extra days of production, leading to faster time to profit. By looking ahead and proactively upgrading to new technology, the team improved their operational efficiency, reliability and safety. This enabled additional Opex savings by reducing unplanned downtime (and thus lost revenue), ensuring business as usual. In short, they were able to improve the overall performance of operations and drive additional throughput and profitability.

Smart Grids and Microgrids

Smart Grids represent the digital transformation of energy infrastructure. They span a broad range of technologies such as electric vehicle charging, smart equipment and meters, and all other aspects of modern electric grids. These critical networks increasingly apply intelligent architectures that allow renewable sources of energy to integrate with the broader energy system. Smart grids enable better energy efficiency and sustainability, and are a strategic focus for government and utilities alike.

Microgrids are local energy networks developed for specific, often commercial and industrial applications such as hospitals, campuses, or off-grid locations. Because they are controllable, microgrids help ensure power reliability and provide businesses with a predictable source of energy, either in conjunction with traditional grid infrastructures or independently.

Power grids are undergoing major transformations. EcoStruxure Grid promises to change how energy is managed, improve efficiency, and safely balance the supply and demand sides of the energy equation.

[Click here to learn about Digital Grid Strategy that can change how energy is Managed.](#)

30-40%

Downtime incidents relate to power disturbances

22%

Fires are due to electrical issues

80%

Renewables' share of total investment in new power generation from now until 2040

Infrastructure

The energy sector is facing significant changes. The global appetite for electricity is growing, there is a concerted move towards renewable and decarbonized energy sources, and many people and businesses are embracing the prosumer revolution – producing and consuming their own electricity. With 24/7 availability critical for businesses and the general public, some organizations are now turning to microgrids.

Microgrids can provide better efficiency, reliability, sustainability and resilience. But, for electric distribution utilities, that means more complicated network management which is a threat to existing models. However, electricity companies can turn disruption into opportunity if they choose to facilitate new energy systems.

On both the supply and demand side, going digital is the key to future success. Smart grid and microgrid technologies can unite producers and consumers, enabling distribution utilities to boost efficiency while meeting the needs of energy-hungry consumers.

The future of electricity is sustainable, renewable, and increasingly decentralized – and the technology to make it work is here today.

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I personally believe that there is a fantastic opportunity with mobility. It's not only about stopping CO2, but imagining a road in Milan or Rome or London where cars move silently. That totally changes the way someone experiences city life. But that's only one opportunity. I mean, we're talking about LED lighting and all the other technologies that are already developed and ready to hit the ground. I think the experience people will have living in a town will be significantly better in the future.

Francesco Buresti, A2A





A2A

To understand the impact of innovations in power, we spoke to Francesco Buresti from A2A, the biggest multi-utility provider in Italy.

Italy was one of the first countries to develop smart grids. Now, ten to fifteen years later, first-generation meters are being replaced by the newer models. These second-generation meters are much more adaptable and gather significantly more data than their predecessors.

But it's not just a question of electricity. Buresti told us that to create a truly smart city, other utility networks must follow the path that smart power is forging. For example, water can be optimized by using sensors to capture correct water measurements and real-time levels of consumption.

Buresti says we need to think long-term to make the most of smart technology. At present, those in charge of running cities, particularly at the operational level, are too focused on reducing costs, rather than on improving quality of life or service. We need to widen our vision, and see the potential of smart cities built on the latest technologies.

Edge computing

The sophisticated requirements of the industrial internet of things require large amounts of data to be processed on devices, instead of being sent to the cloud. By capturing, storing and computing information at the edge, latency is reduced and new services and experiences can be unlocked.

Businesses are undergoing a major digital transformation. EcoStruxure IT is helping them tackle complex IT and data center environments with cloud-based management systems, big data analytics and more.

[Click here to learn about Data Center Unleashed Strategy as a driver of digital transformation.](#)

80% | improvement in data center infrastructure efficiency over the last 10 years

82% | improvement of remote infrastructure stability utilizing Schneider cloud-based software

60% | improvement in data center deployment speed with modular, prefabricated data center systems

Data Center

If data is to be the fuel of the fourth industrial revolution, it needs a strong foundation for growth. This is essential in order to power transformation. High-performing data centers combined with sophisticated edge computing are unleashing the potential of the fourth industrial revolution. Of course, there is no universal approach when it comes to data and computer systems, as every company has unique requirements. Decisions need to be made whether to send data to the cloud, process it on local servers, or handle it on edge devices. With edge, bandwidth-intensive content can remain close to the user or data source and is inserted into a logical point within a larger cloud computing architecture.

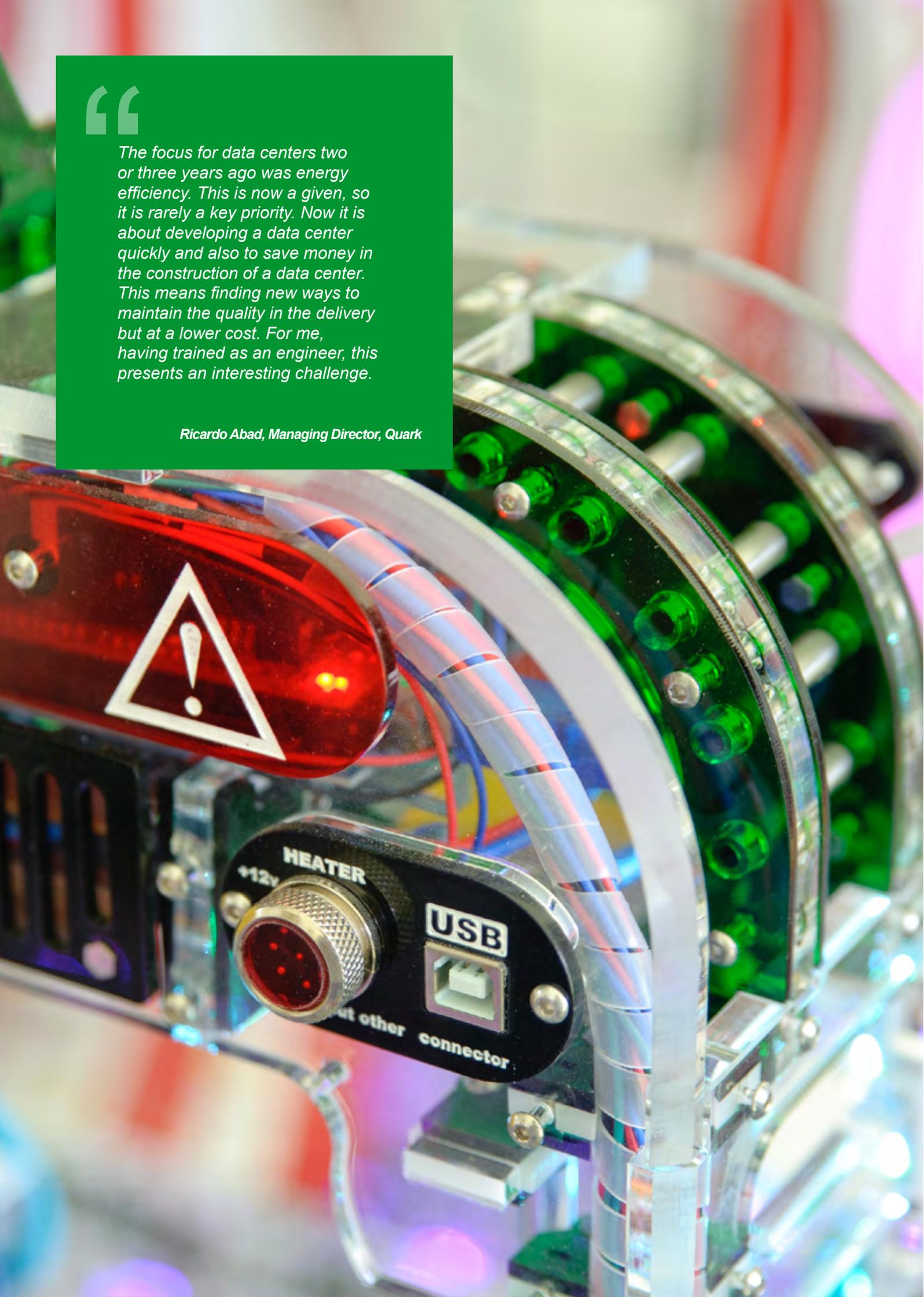
A robust and scalable digital infrastructure, in the cloud and at the edge, is crucial to meet the increasingly sophisticated demands of users. Companies must provide a reliable, on-demand digital service that moves seamlessly between devices and ensures the highest levels of cybersecurity. An investment in a best in class data center is also an investment in cyber-security. Both 'security by design' and 'privacy by design' must guide the development of data architecture and consumer relationships.

With the right data strategy, businesses can anticipate customer needs and gain insights that will help them to innovate and evolve.



The focus for data centers two or three years ago was energy efficiency. This is now a given, so it is rarely a key priority. Now it is about developing a data center quickly and also to save money in the construction of a data center. This means finding new ways to maintain the quality in the delivery but at a lower cost. For me, having trained as an engineer, this presents an interesting challenge.

Ricardo Abad, Managing Director, Quark





Quark

We spoke to Ricardo Abad at the Paris Innovation Summit. Ricardo is the Managing Director of Quark, one of the leading providers of data centers in Spain and Latin America.

Ricardo told us that one of the benefits of attending the Paris Innovation Summit was to see the new solutions from Schneider Electric, and to share information and insights with European competitors.

Ricardo revealed that customers are increasingly asking for quicker implementations, and to implement across multiple markets. This has led more businesses to move away from the traditional in-house model and instead work with specialists such as Quark and global partners such as Schneider Electric so that they can go to market more quickly.

Ricardo says that whatever the sector, there is a common requirement for successful transformation. Namely, the willingness to adapt and innovate, especially among more established businesses, where change is not always a natural a step.

The Panel



Emanuele Angelidis
CEO, Breed Reply

'IoT is going to be disruptive [to healthcare] in a positive way, thanks to the solutions that are already available, and that will be developed over the next few years.'



Maurice Lévy
Chairman of the Supervisory Board, Publicis Groupe

'Every single company on earth will have to transform the way they are operating, the way they are marketing, the way they are communicating inside the company, and outside the company.'



Brian Motherway
Head of Energy Efficiency, IEA

'We picture this bright new future where we're all touching screens and living very clean and efficient lives, but we don't pay enough attention to where we are now and how we take those first steps to change.'



Karen Morgan
President and CEO, Dynamic Energy Networks

'In our case, it's about education and thought leadership ... We like to listen. Because of all the change and transformation that's going on, people really aren't sure what to do.'



Caglayan Arkan
Worldwide VP for Manufacturing, Microsoft

'One of the things that everybody is trying to figure out is how much computing and data handling do you do at the edge, and how much do you do on the cloud.'



Moderator:
Steve Sedgwick
CNBC Anchor

'The panel was a great window on not only the optimism surrounding the digital tech arena and in particular IoT, but also the challenges faced on the road to transformation.'



CNBC | I.O.T.

POWERING THE DIGITAL ECONOMY
HARNESSING PROGRESS

One of the highlights of the Schneider Innovation Summit was the 'I.O.T. Powering The Digital Economy' panel discussion curated by CNBC.

A key finding was that transformation will affect all businesses and that both start-ups and established brands can thrive if they respond to the needs of the market.

Conservatism is one of the hurdles that businesses must address. They must be receptive to change and draw inspiration from industries and professions where transformation is having a positive effect. An example is the healthcare sector: providing health experts with enhanced information can improve treatment for patients, minimize hospital visits and reduce overall care costs. The benefits of transformation are seen at an organizational and human level.

The need for evidence and use cases was a recurring theme in the summit. Better education and understanding are therefore required to secure buy-in and funding for infrastructure investments.

Untapped data presents a huge opportunity for those with the right tools and strategy. The panel viewed quality, not quantity, as the priority, as well as the need to manage the security and storage issues created by edge and cloud computing.

Above all, businesses must focus on simplicity, especially during the implementation of IoT solutions, and provide a clear strategic direction.





There are enormous possibilities to get to a much higher level of efficiency, reliability, safety, and comfort. It's for us to embrace this new thinking and to train people to be ready [for the future].

Jean-Pascal Tricoire, CEO of Schneider Electric, speaking during the CNBC IoT debate at the Paris Innovation Summit

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We need a coach, or partnerships between manufacturers and contractors. We need them to take a role in introducing technology, and assisting us in preparing qualified electricians. We have strong training institutions, but development in technology is so fast that we need manufacturers to take ownership.

Niels Jørgen Hansen, CEO, Tekniq



01 | Transformation Driver:

Information and Education

Although the technology powering the fourth industrial revolution can be complicated, the benefits are simple. These are sustainability, cost-savings, faster production, reduced downtime, improved diagnostics, improved health and safety, and increased customer satisfaction.

These advances are framed in the context of a wider debate around the future of employment. But from smart city planners to strategic facility managers, there are a wealth of data-driven jobs being created. As such, forward thinking organizations will be investing in the education of the workforce and proactively tackling the future skill scarcity.

This means encouraging creative thinking to help define the services and products that will help you stand out from the competition. It means nurturing emotional intelligence to help people build rich, diverse and collaborative ecosystems. And it means developing strategic mindsets so that people on the front line can contribute to the longer-term vision.

Ultimately it is about preparing the workforce for a new type of business environment. Models are changing from selling products to selling products as services. This is a subscription-based model that enjoys less volatility in revenue streams. This allows greater opportunity for long term planning. It entails a new skillset that focuses on selling outcomes and developing long term customer loyalty.

But education starts with yourself. Most of the industry leaders we spoke to felt there was still work needed to get their own house in order. Although the technology is there, the story of the fourth industrial revolution is still in the process of being written.



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'The challenge for a company like Schneider Electric is that they need to be agile for a customer base that can be hundreds or thousands in size. They need to build something very fast, that can scale and is solid. Being agile, but in an industrial way. Their EcoStruxure platform is designed in a way that can fulfil these demanding requirements.'

Jean Cabanes, Managing Director Industrial, Accenture



Accenture

We spoke to Jean Cabanes, Managing Director Industrial, Accenture. He took us through some of their industrial client work with the internet of things and their collaboration with Schneider Electric in this area.

Together, Accenture and Schneider Electric partnered to create the Digital Services Factory to accelerate digital innovation and speed to market.

The Digital Services Factory gathers data from millions of connected assets across the company's infrastructure and customer sites to speed the development of new customer solutions and services, while AI technologies, via its IIoT-enabled, open EcoStruxure architecture, turn that mass of data into actionable insights.

Central to this collaboration is the idea of putting the customer at the center of the innovation process. This involves focusing a team of design thinkers, user experience designers, artificial intelligence professionals and engineers around deep understanding of the customer needs.



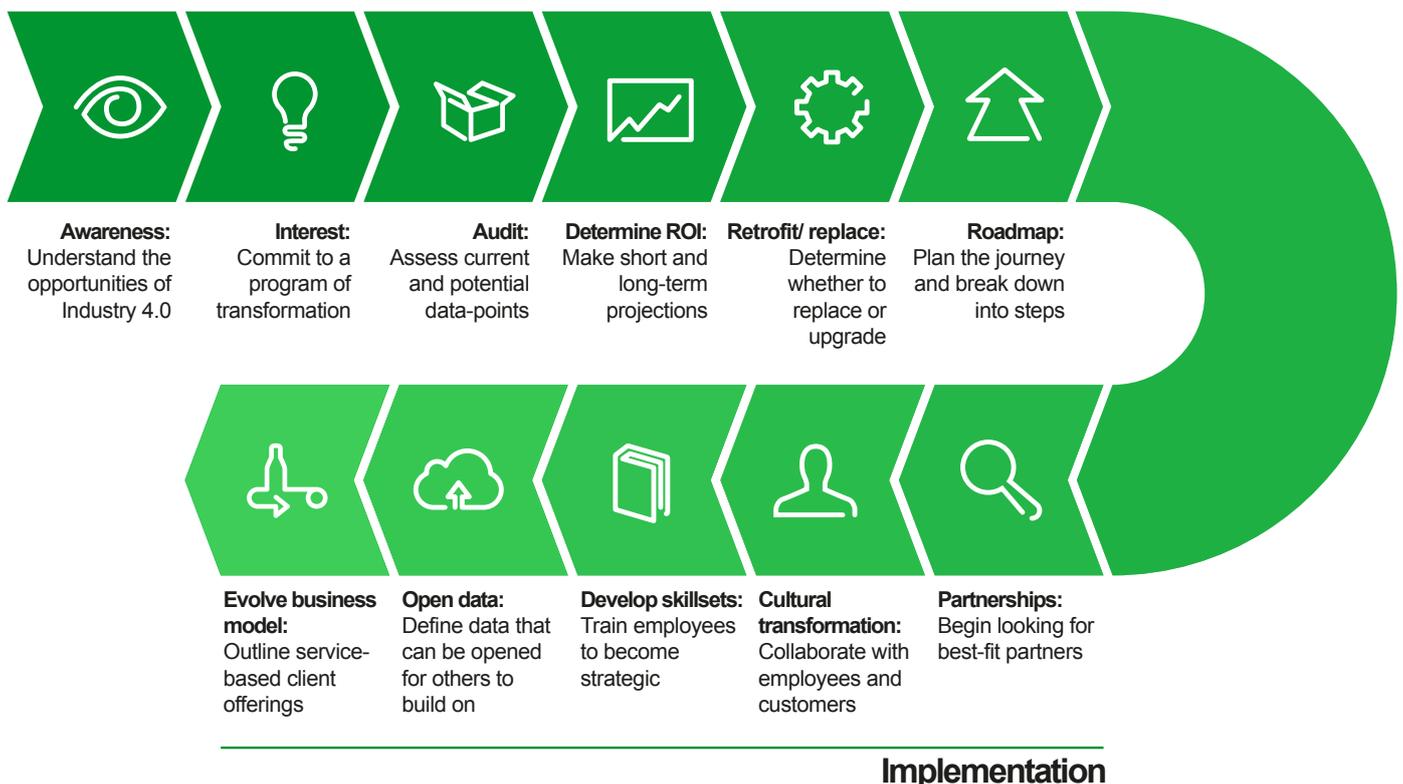
02 | Transformation Driver:

Understanding the Customer Journey

Our research uncovered a strong appetite for digital transformation. The concepts behind Industry 4.0 elicit excitement, ambition and a strong hope for the future. But there are also barriers. The impact of automation on employment worries some business leaders, and the lack of a clear return on investment concerns others.

Everyone we spoke to was at a different stage in the digital transformation journey. In addition, all were clear that it is a journey every business needs to make.

Planning



Implementation



↑ INNOVATION HUB





The way projects are delivered today is much more collaborative. Looking at where technology is with Schneider Electric today, they're in a great position to help people like us in partnering to deliver projects in this manner.

Bob Minielly, President and CEO, Shaw Electric Co.



In our case we are the innovators. We are looking where the world is going and then we are able to tell our customers there is something new in the field, we can do this, and this will provide advantages. We are very much aligned to innovation with Schneider Electric.

Jorge Velásquez, President, Tablesa



Simplification is key. You don't digitize as is. You think about the processes, make them simpler and then digitize. The key starts with data to make the right information decisions. The partnership we have with Schneider Electric is a crucial way for us to make sure that as a business we have the right data to make the right decisions.

Stanislas Cozon, EVP, CapGemini





Schneider Electric is no doubt the leader in energy management. We appreciate the long collaboration we have had with them over many years.

Jibin Liu, President, CNBM Qilianshan Cement Group



When you have a solution that is not open, the customer gets a little frustrated ... if you have an open source, which is the Schneider Electric philosophy, customers feel it is a big asset as they feel more confident to make changes.

Luis Zwiebach, Director, Trianon



Schneider Electric is all about an open approach. You can see throughout the Innovation Summit that when you talk to employees they are excited about what they have to offer.

Bob Minielly, President and CEO, Shaw Electric Co.

Life Is On

Schneider
Electric