



Going Up @ Schindler: How the Elevator and Escalator Giant Rose to Digital Excellence



Schindler: Moving Humanity Digitally

1 Bn
The number
of people that
Schindler
moves daily

When you are a 140-year-old leader in an established industry, how do you keep your leading position? For Michael Nilles, Chief Digital Officer of Schindler – a global provider of elevators and escalators with over 57,000 employees across 100 countries – the answer lies in digital technologies. “Digital transformation isn’t about a specific technology or even the entire IT stack. Rather, it’s about a game-changing adaptation to your business model to stay at the forefront of your industry¹,” he says. Schindler – a company that moves a billion people daily – is continuously looking at technology innovations that will keep it at the forefront and is recognized as a pioneer:

- Rather than wait for customers to alert it to an elevator breakdown, Schindler shares real-time alerts on current or future outages not only with their service engineers but also with customers. Service engineers use an app to access this information in real-time and attend to the problem without the need for customer intervention². This closed-loop service platform where everyone has the same real time information is a first for the elevator industry.³
- Schindler’s PORT, or Personal Occupant Requirement Terminal, is an intelligent destination-dispatch solution for use in large buildings. Through a combination of intelligent software and simple-to-use hardware, the system reduces elevator times at offices by as

much as 50%. Employees are identified by their access card, the fastest time to destination is calculated, and the employee is directed to the optimum elevator⁴.

“Destination dispatching is when you tell us where you’re going before you even get on the elevator. We invented it in 1993 and are now on our third generation. Other companies are still on their first⁵.” Greg Ergenbright, president of Schindler U.S. and Canadian operations

- Schindler won the Digital Business Innovation Award 2015 for its ‘Digital Toolcase’ – an application that is used by more than 20,000 Schindler front-line employees every day to access technical data, analyze errors or order parts⁶. The company also won the MIT Sloan CIO Leadership Award in 2015⁷ and has been featured in Forbes’ Most Innovative Companies list multiple times in the last 5 years⁸.

How did Schindler manage to create this level of digital innovation in a venerable company? The answer, as we have seen many a times, lies in a structured approach to digital transformation.



The Three Pillars of Schindler's Digital Transformation

Digitizing the Customer Experience

Schindler set out a vision to achieve 'Leadership through Customer Service'⁹, driven by technology innovation. This included an online portal – "Schindler Dashboard" – where customers could check the operational status of their elevators or escalators, make service requests and get alerts in case of equipment malfunction. This was also offered as a mobile application (see Figure 1)¹⁰.

A number of principles were key:

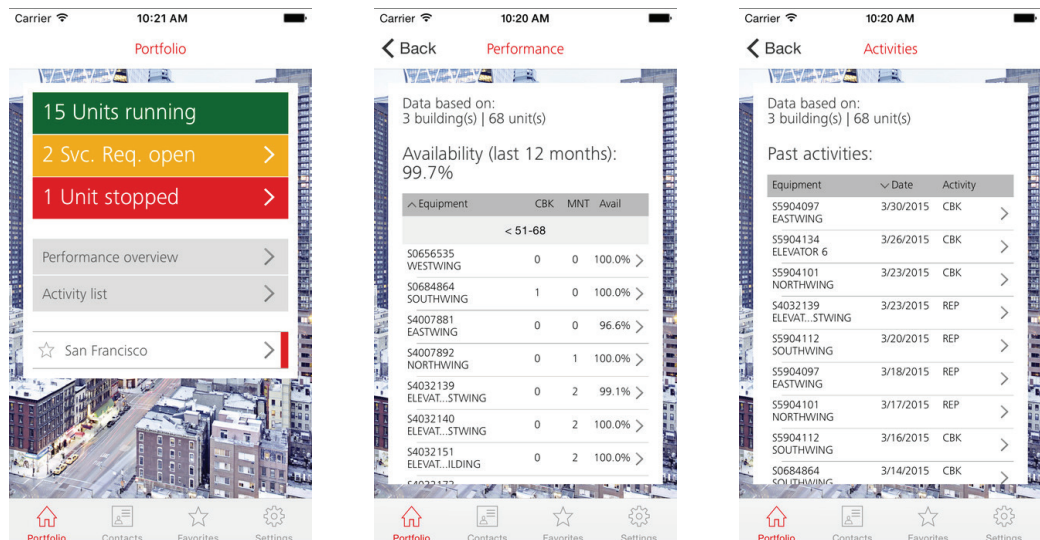
- The importance of real-time data, as Greg Ergenbright explains: "The type of information we're offering isn't unique, but real-time nature of it is. This level of customer service helps

Schindler win over customers who see it can help them be more efficient and keep their own customers happy¹¹."

- Putting the customer at the center of efforts. "Our ultimate goal, with all of the initiatives, is superior customer experience," says Michael Nilles, "Whereas the goal of the previous decades, which of course is still on our agenda but not the most urgent thing, was focused on internal process optimization, driving efficiency. Ultimately the customer was benefitting as well, but he was not at the center of it."¹²
- End-to-end digitization. "We have digitized our entire relationship with our customers. Our products are digitized and communicate with our customers directly. Customer interaction with Schindler workforce and back-end systems are also digitized¹³" outlines Michael Nilles.

Figure 1: Schindler Dashboard Mobile

200 Million
The number of data points that Schindler collects daily



Source: App Store listing

Digitally Transforming Operations

The company uses a portfolio of digital technologies – such as IoT, Big Data & Analytics and Mobility – to transform its operations.

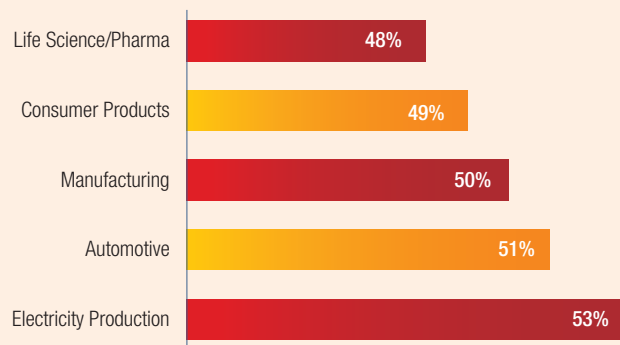
Schindler has, for example, connected its elevators with sensors, which collect and transmit data on parameters such as vibration, speed and temperature. Sensors on elevators transmit alerts to

a control center in case of an outage¹⁴ and Schindler collects 200 million data points daily¹⁵. However collecting the data is not the most important aspect according to Michael Nilles. "This data doesn't mean anything if you don't put the right business rules and machine-learning algorithms to it," he says. "That's where we have the biggest competitive advantage as we are able to deliver a superior customer service experience." Schindler uses this data to anticipate problems in elevators in a given area, schedule maintenance routines and to supply spare parts.

The Rise of Predictive Analytics for Maintenance

Our research across a range of industries shows how significant numbers of firms are using analytics for predictive maintenance (See Figure 2).

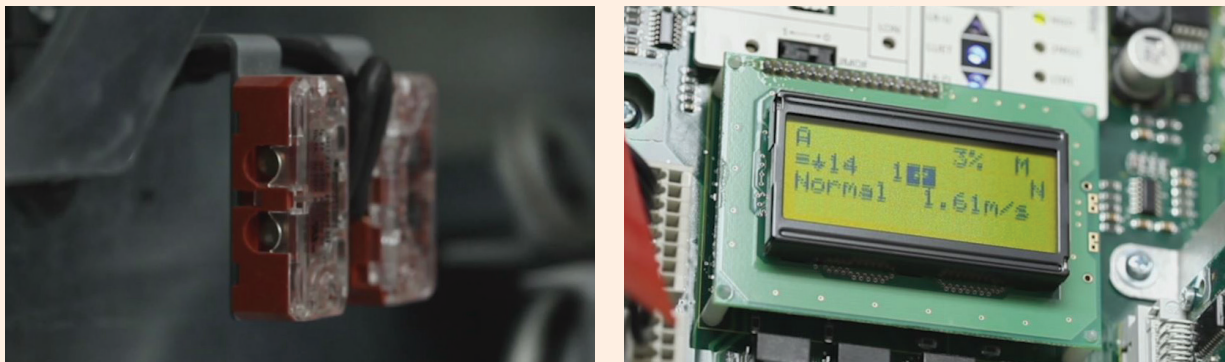
Figure 2: Percentage of Firms using Predictive Analytics for Maintenance



Source: Capgemini Consulting, "Going Big: Why Companies Need to Focus on Operational Analytics", March 2016; Capgemini Consulting Analysis

Schindler embodies this trend. The company uses predictive maintenance to ensure downtime for its elevators is minimized. Using sensors, it collects data on temperature, pressure and speed (See Figure 3). This is transmitted through IoT devices fitted on elevators to the backend platform to generate insights for predictive maintenance. Schindler also remotely monitors its elevators 24/7 and is able to turn around the faulty equipment to service 22% faster than traditional troubleshooting methods.²

Figure 3: Sensors Collecting Data Remotely



Source: Apple.com, "Elevating service and safety with real-time data", Nov 2015

"Through a more predictive approach to maintenance and remote monitoring, we can detect incidents with an elevator before our customers do. Think of it as never having to bring your car back for an oil change." - Michael Nilles

Sources:

1. Apple, "Elevating service and safety with real-time data"
2. Schindler website, "Schindler Remote Monitoring - A proactive approach to problem solving"

40,000
 The number of inventory spare parts that a technician can directly order using Schindler's Digital Tool Case app

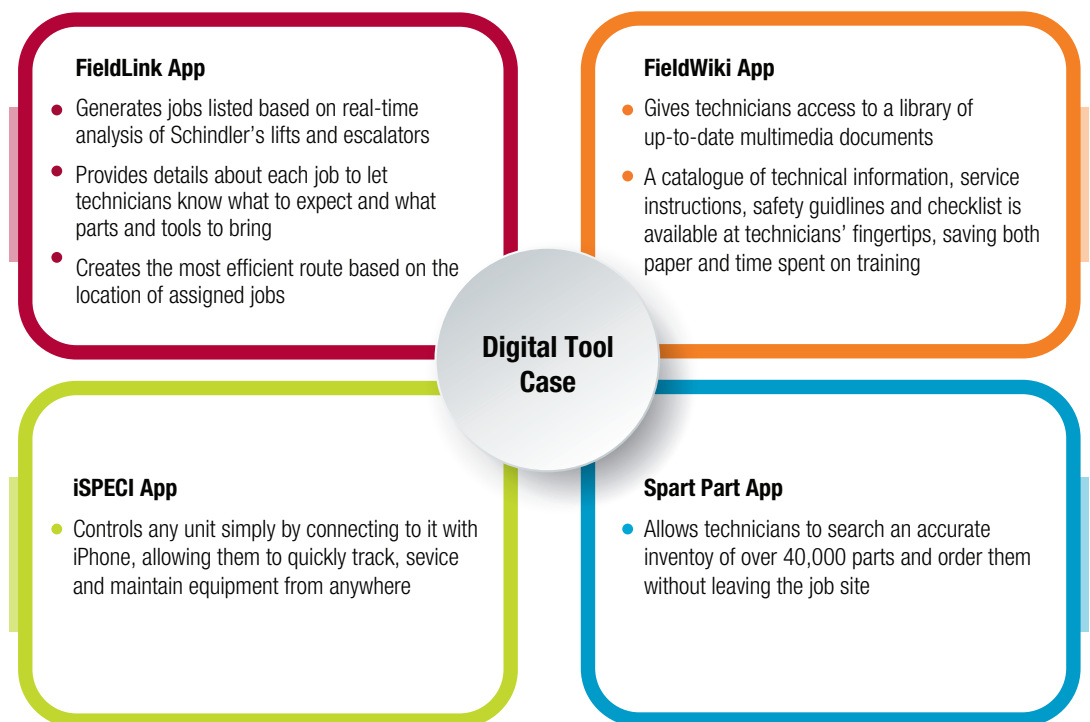
Creating a Digital workforce

Schindler's installation and maintenance service technicians, who constitute as much as 57% of its workforce¹⁶, are digitally empowered to leverage the vast amounts of data that the company collects. Field technicians start their day on an iPhone, which serves as an all-in-one tool that helps technicians work more efficiently and productively. The customized iOS apps used by technicians are part of a wider digital tool case (See Figure 4), which gives them all the resources they need to get the job done¹⁷, from error analysis to ordering spare parts¹⁸.

For instance, the spare parts app element of the Digital Tool Case enables Schindler field technicians to search an up-to-date inventory of over 40,000 spare parts and order directly from customer site (see Figure 5). The field technician can also check the parts required for the next day's job, order the parts in advance and have it waiting in the trucks next morning before visiting the customer site.¹⁹

"With iPhone and custom iOS apps, we've enabled true mobility for our workforce, delivering on-the-spot service to our customers and ensuring safer equipment around the world."²⁰ Silvio Napoli, Schindler Executive Member of the Board of Directors.

Figure 4: Digital Tool Case



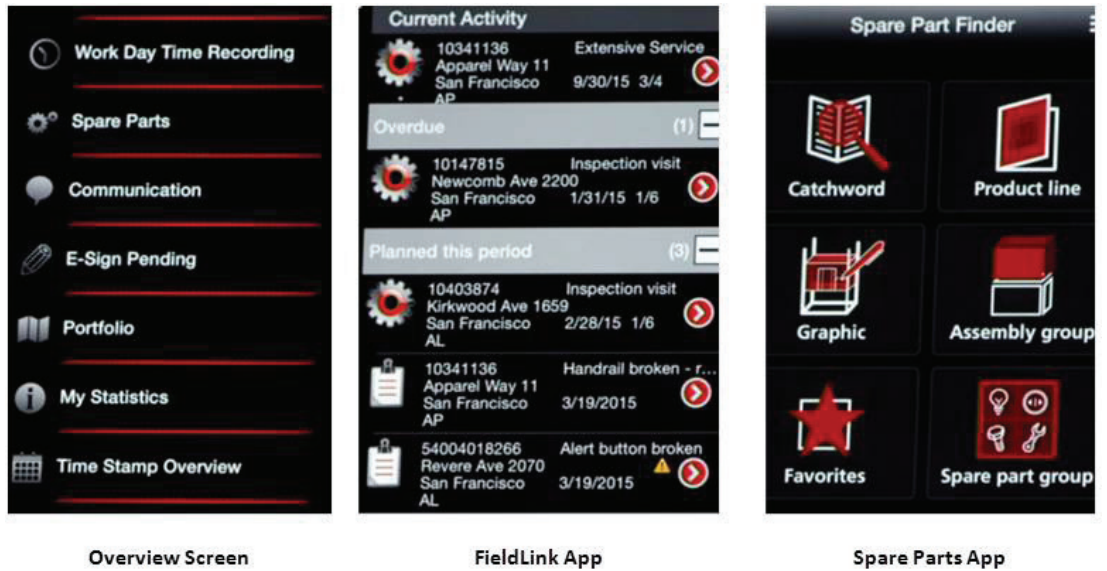
Build with MapKit, a fully functional in-app map can use Location Services to track technicians and offer optimized routes to job sites. Sensors track and transmit valuable equipment data, which is interpreted in the cloud and sent directly to each technician's iPhone with a push notification



Technicians can quickly troubleshoot issues by consulting with colleagues with the built-in camera and FaceTime. To access elevator controls, technicians can connect via Bluetooth using iSPECI app

Source: Apple.com, "Elevating service and safety with real-time data", November 2015

Figure 5: Snapshots of Schindler's Digital Tool Case App



Source: Apple.com, "Elevating service and safety with real-time data", November 2015

Achieving this level of digital sophistication was a challenging journey, as Michael Nilles explains: "It was a hard and painful journey which involved change management. You have to train people, make organizational adaptations so people can make use of the new solutions."²¹ However, digitizing the workforce had multiple benefits. By

using the FieldLink app, for example, the company has optimized its service routes for technicians, by providing them with instant access to data on iPhone and iPad, and saved 40 million kilometers of driving and prevented 4,435 tons of emissions per year²².

What has been the secret of Schindler's digital rise?

A number of ingredients have been critical:

Build a Digital Foundation

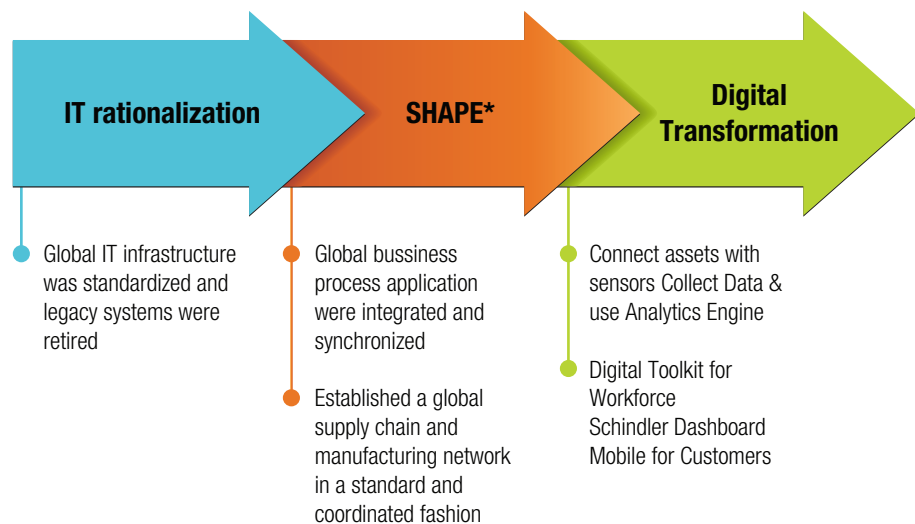
Three phases were key, as Figure 6 illustrates:

- Build a robust IT platform.
- Standardize global processes and drive operational efficiency.
- Achieve superior customer experience as well as transforming operations and the workforce.

As Michael Nilles explains: "Before Schindler could take up higher-level digital transformative work, the company had to fortify its IT foundation. That foundational work was in two areas: IT rationalization and global business process optimization²³."

"We were thinking about how to gain a competitive advantage using new innovative and digital solutions that were emerging to achieve a superior customer experience. We wanted to change the way the customer did business with Schindler²⁴". Michael Nilles

Figure 6: Path for Digital Transformation



* Schindler Harmonized Applications for Process Excellence

Source: MIT Sloan CIO Symposium , "2015-15 Leading Digital: A Manifesto for IT and Business Executives", June 2015

Drive the Digital Transformation from the Top

Our past research has clearly established that successful digital transformation requires a strong partnership between IT and the business²⁵ and the need for a digital transformation to be a top-down exercise. Schindler blended both these requirements by making sure their digital transformation was led top-down by their CIO. Michael Nilles, Schindler Group CIO up until April 2016 (currently Chief Digital Officer), and who joined Schindler in 2009,

is a driving force for the digital transformation in Schindler. Thanks to his leadership from the front in transforming Schindler, Michael Nilles was awarded the 2015 CIO Leadership Award by MIT.

"A lot of people say Digital is just a new buzzword. But it has reached a high maturity stage not just in terms of technology but in acceptance on the business side. Digital is not just replacing the term information technology; it's making use of information technology, but there are more elements to it as digital focuses more on the market, customers and top-line growth²⁶." Michael Nilles



To be a leader in business today, you have to be a risk-taker and lead disruptive change.



Michael Nilles

Govern the Transformation

“Digitization requires fast business deployment and innovation. The agile mode of IT brings a startup culture which puts the user in the center of development and accelerates digitization²⁷.” Michael Nilles

For many organizations, the challenge of digital transformation is achieving the change without their existing operations being compromised. To overcome this challenge, the company used a two-speed IT approach, where agile or start-up mode IT work together with traditional IT.²⁸

Schindler created a separate unit, Schindler Digital Business AG, with then-CIO Michael Nilles becoming

CEO. The unit hosts innovative projects that use emerging technologies²⁹ and has operations in Shanghai, Morristown (NJ) and Lucerne.

Schindler Digital was not just an evolved IT team, it went far beyond that, as Michael Nilles explains: “We don’t call it IT anymore. Schindler Digital Business deals with everything related to digital, and we subsumed the traditional IT fields now. So it’s both: it’s an organization that is transforming the business towards digital and it also sells digital solutions³⁰.”

“It’s very important for established organization to give room for innovation, and you usually can’t do that within the boundaries of a traditional organization³¹.”

Schindler Digital Business

Schindler created a dedicated digital unit aimed specifically at digital innovation in 2013. The team differentiated itself across a range of areas:

Talent -The unit combined talent from a wide variety of teams beyond traditional IT. These included R&D, service and installation, and industrial design in order to create integrated digital tools for customers and front-line employees.

Governance – Schindler created a matrix organization across functional groups for knowledge sharing. The company realized that they needed a highly dexterous team in order to achieve their goals (See Capgemini Consulting’s research on [Digital Dexterity](#)). As Michael Nilles says, “When we have a new service, we put this team together, and then it becomes really an organization. After two years, when this is a mature service, we might want to dissolve the team again, and put it together in a different constitution. It’s much more dynamic, and that’s another good reason why we have it under Schindler Digital Business as a legal entity.”

Collaboration – The digital unit worked closely across the business in order to develop effective digital tools and drive their adoption by its employees. In doing so, they focused clearly on people needs. Enrico Senger, VP, Digital Strategy and Transformation explains, “People are not interested if something is digital or not digital. They are interested in: “Does it help me to do business with the customer? Can I be more efficient? Can I do more business and how is this done?”” The unit also involved users directly in designing solutions by ensuring they iterated rapidly in order to create minimum viable products.

Source: MIT-CSIR, “The Schindler Group: Driving Innovative Service and Integration with Schindler Digital Business Ag”, April 2016

Conclusion

Given the accelerated pace of technology innovation and disruption across all sectors, digital is as valid for century-old organizations as it is for newly created start-ups. The case of Schindler shows that age is no barrier to injecting urgency and innovation

into the digital agenda. As Michael Nilles says, “In traditional industries, you’re not staying in business in the next 10 years with just your product. You can get a competitive advantage if you have related services, and they will be enabled by digitization. To be a leader in business today, you have to be a risk-taker and lead disruptive change³².” Schindler is now placed on the top floor of digital players.

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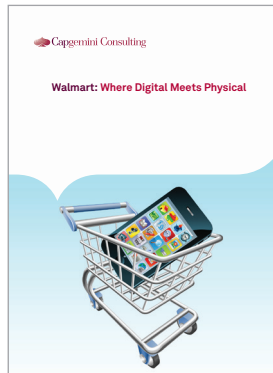
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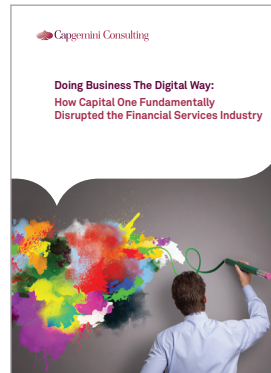
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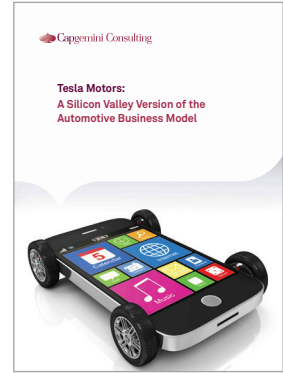
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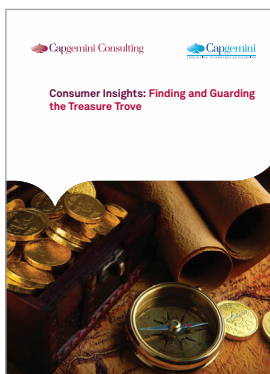
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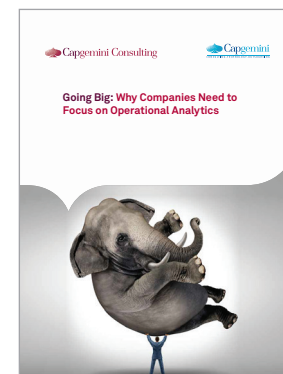
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