

# Leading in a disruptive world

## How companies are reinventing themselves

Introduction

March 2018

# #1



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## How companies are reinventing themselves

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Today's business world is characterized by disruption. Nothing remains the same. Robots, virtual assistants, and 3D printers are revolutionizing the workplace. Digitally networked value-added chains produce enormous quantities of unstructured data, which are processed by smart algorithms in self-learning systems. New, highly innovative business models are springing up everywhere. Established companies need to reinvent themselves. What they need: technology enabled transformation. The aim is to use the new technologies systematically to successfully navigate a world of unexpected changes.

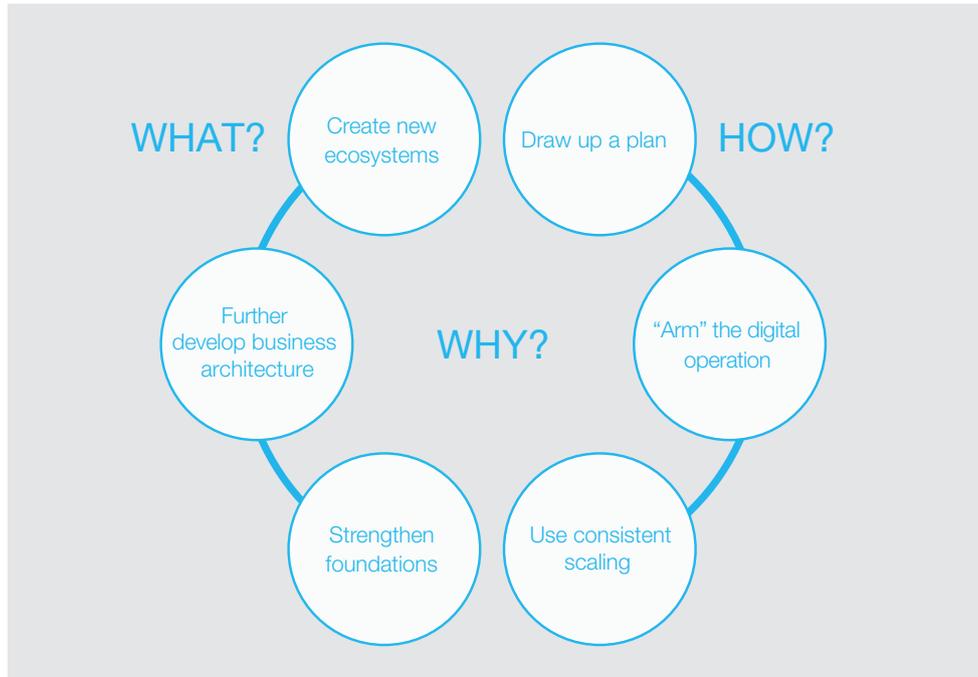


The Chinese have been playing the strategy game Go for thousands of years, with each generation of players adding new refinements. However, in early 2017, the world champion was defeated by the computer program AlphaGo. Programmers at Google had developed algorithms that analyze historical Go games and derive a winning strategy. AlphaGo has since been beaten 100 to 0 in a series of games – by its successor, AlphaGo Zero. This version was merely fed the basic rules of Go by the programmers. The self-learning system then reached world champion standard by spending three days playing against itself. Zero began like a human novice, observed the Google developers, and learned extremely quickly, soon evolving unconventional strategies that no human had developed before.

This anecdote illustrates the breakneck pace of development in artificial intelligence (AI) and the products that are emerging from this: sometimes humans cannot keep up. However, the majority of the machines that do not simply calculate algorithms but learn by trial and error, developing their own algorithms, are intended to work, not play. And then AI brings disruption, a violent rupture with the familiar, and turns entire value-added chains on their head, for example, in retail.

Grocery retailers who use AI systems to forecast sales of fruit and vegetables can increase their profit margin (based on total business) by 1 to 2 percentage points. The accuracy of AI-based forecasts for Internet sales enabled one trader to reduce his inventory by 20 percent, for example. In the warehouse, autonomously-traveling robots, controlled by AI, reduce turnaround times by 30 percent. In supermarkets, AI optimizes pricing, personalizes promotion activities, and optimizes the range of individual markets through so-called geospatial modeling, which takes account of local environmental factors. Markets that employ these models increase their turnover by 4 to 6 percent. The customer experience can also be sustainably improved through the use of AI: virtual sales assistants, automated check-out systems, and the home delivery of goods by drone all make the lives of the customers easier. Many of the AI solutions described are already in use, whilst others, such as delivery drones, are still under development, although the technology already exists.

**Exhibit 1**  
Technology  
enabled trans-  
formation –  
the framework



Retail is just one example – AI will realign the value-added chains of all sectors. Disruption is waiting in the wings: companies that do not transform themselves with the aid of the new technologies run the risk of going under.

AI is just one phenomenon of the technological revolution we currently find ourselves in. Everywhere new products and services are rising up – also creating new markets and business models in many cases. Decentralized 3D printers are already supplying spare parts for many engineering firms, whilst autonomously-propelled robots hurry through the aisles of warehouses, increasing the speed of stock turnover. The technology for self-driving cars is also ready for application. In October 2017, an imposing milestone was reached by

Waymo, a company of the Alphabet Group. In Arizona, autonomous minivans were permitted to take to the streets completely without drivers for the first time – and will soon be able to take passengers on board.

Digital technologies are developing at breakneck speed, delivering enormous and unstructured volumes of data, which are rendered utilizable by self-learning systems with smart analysis programs. In the fast-moving digital world, the old product development techniques are too slow, too complex, and insufficiently accurate. They are being replaced by a development process inspired by software engineers: agile innovation, which abandons the strive for perfection of the German engineer and instead rushes a basic product to market, which is in turn continuously improved via customer feedback. In this process, the developers place customers and their requirements at the center of all considerations.

However, all of this can only be achieved at companies that not only adapt their business model to the new opportunities, but also the mindset of all employees. Young start-ups have this in their DNA, as do the major companies that were “born digital”, such as Alphabet (Google), Facebook, Amazon, and Apple. All other companies that hail from the analogue world have a long path ahead of them – that of technology enabled transformation. This is an approach tried and tested by McKinsey, emanating from an accepted sense of urgency – even where the company still appears to be in the best of health – and it describes a clear approach for operating successfully in a disruptive world (Exhibit 1).

## **WHY CHANGE ANYTHING? WE'RE DOING FINE!**

The economy is humming along nicely, companies are working at the limits of their capacity, the organization is running smoothly and efficiently. Is this the time to head off on a path of transformation to an unknown destination? Yes, and the faster the better. Because digitalization is changing the economy at breakneck speed, driven by exponential innovations. AI and intelligent analysis methods develop competitive advantages from data, networks in which customers participate develop products, sectoral boundaries

are redefined, business customers are addressed like consumers: the entire world of business is redefined.

Digitalization has forcefully altered the behavior and expectations of consumers, traditional business models have been destroyed, sectors redefined. It is revolutionizing production (keyword Industry 4.0) and shaking up entire industries. The new combination of production factors is forcing out and destroying old structures and traditional business models. It is with the acknowledgment of this that technology enabled transformation begins. Management needs to use this to generate a sense of urgency throughout the company.

Two issues in particular are changing the economy at this time:

- **Advanced analytics**, supported by AI, structures and interprets the enormous volumes of data that are generated by the networked machines of the Internet of Things. This leads to completely new products and services.
- **Agile methods** replace familiar linear product development, originating in software development and accelerating the process whilst at the same time rendering it more accurate.

#### AI enables the computer to learn intuition

The McKinsey Global Institute has calculated that around USD 39 billion were already invested worldwide in AI development in 2016. The economic potential is enormous; if it is exploited in Germany, this alone could succeed in increasing annual growth (domestic product per capita) by 2.4 percentage points. AI can also enable machines to perform tasks that humans do intuitively: these include recognizing languages and faces and interpreting images. They imitate structures of the human brain, learn from experience, and develop complicated concepts from simple templates. In particular, image recognition with the intelligent interpretation of the data acquired opens up vast new markets – for example, in “predictive maintenance.” Drones fitted with cameras fly over industrial plants, piping, and

cable systems. Analytical models use the information acquired to identify weak points that can lead to failure. Predictive alarm systems are consistently improving. For example, active oil drilling platforms are monitored to prevent the unplanned emission of crude oil into the sea. Platforms equipped with such predictive maintenance have increased oil extraction by 3 percent – although they were already amongst the most productive to begin with.

### Agile innovation – the customer joins the development process

“Top secret” was long the byword in the development departments of companies. Here boffins fiddled about, screened from the rest of the workforce; there was no access for third parties. However, derived from software development, a very different approach is fast gaining ground: agile innovation. The secretive labs are replaced by interdepartmental teams, in which colleagues from the technical departments work alongside the developers. This internal development team is augmented by external members from university institutes, freelancers with specialist knowledge, lateral thinkers, etc. Then the teams apply the design thinking method: they attempt to consistently think from the customer viewpoint, investigate which of the so-called “pain points” of the product are most important to them, initially developing a basic product with no claim to perfection, which satisfies the fundamental customer requirements. This “minimum viable product” (MVP) is then tested on the market and continuously improved in an iterative process on the basis of customer reactions.

The venerable, 150-year-old Deutsche Post, still associated by many with a ponderous, public service mentality, has proven itself an agile innovator with the development of its Streetscooter, an electrically-powered delivery van. In view of the threat of driving bans for diesel vehicles and to achieve its own ecological goals, Deutsche Post had an urgent requirement for electric vehicles to deliver mail and parcels. However, the car industry was unwilling to respond to the needs of its major customer: too much development required for a limited market, not feasible at affordable prices, maybe in a few years.

But Deutsche Post was unwilling to wait and instead launched its own auto plant. The mere decision to become independent of suppliers indicated observance of the new fundamental rule of the digital world: the old boundaries between sectors no longer apply, no one can still rely on having no competitors beyond the familiar names. In contrast, the Deutsche Post development followed the rules of “design thinking.” Customer requirements and benefits are to the fore – Deutsche Post itself is the end customer. The development of the Streetscooter occurred in an open network, an ecosystem comprising a Deutsche Post project team, a group of scientists from Aachen University, medium-sized companies, numerous interested and talented students, and a number of external contractors.

In the spirit of classic digitalization projects, the result was an MVP, a product that fulfils the basic requirements (reliable electrical range of up to 80 km, sufficient for all standard postal rounds), but does not serve the claim to perfection that traditional German engineering places on new products. The basic Streetscooter is now being improved in an ongoing development loop: greater range and reliability, different bodywork forms. External customers have also appeared, in autumn 2017 a leasing company ordered 500 units, for example. And the teams are also working on derivative products: they are constructing a rolling robot, which follows the mailman, guided by sensors, thus relieving him of the need to carry heavy loads. And naturally the team is also working on a self-driving system for the Streetscooter. Who says that solutions such as these only come from the car manufacturers or Googles of this world?

### Established market definitions no longer apply

In particular, the networking of previously unconnected devices with data sources via the Internet of Things is abolishing traditional sector boundaries. For example, in the healthcare sector: here, technology companies are suddenly present with their apps and fitness bracelets – developing a completely new business model from the data collected.

Classic engineering is also moving the sector boundaries. John Deere, one of the largest firms in the tractor and agricultural machinery field, now also offers software- and data-based services. This combines the ultra-precise weather forecast with data on soil conditions and characteristics of the seed with a large amount of other information to form recommendations. This enables the firm to help farmers spread seed and fertilizer on their fields in an optimal manner, thus significantly increasing the yield per square meter. In addition, it also saves fuel, reduces repair times, and makes optimal use of the vehicle fleet. The on-site data is transmitted by sensors in the vehicles to the Deere data center, the farmer can access information via the MyJohnDeere.com platform or study it on a smartphone or tablet using the “Mobile Farm Manager” app.

#### Distinction between B2B/B2C blurs – B2B becomes B2B2C

There used to be a strict separation: the end customer approach was emotional, entertaining, and simple. Things had to be made easy for the consumer. In contrast, business customers wanted to know the precise details and sober facts.

However, this distinction, too, is long obsolete. Once again, the cause is digitalization. Since business customers experienced Amazon or Google as private consumers and realized how simple and fast ordering, search procedures, and delivery could be, they have been transferring those expectations to B2B business. Why should it be more complicated to order machine parts than a book on Amazon? Why does delivery take weeks and not a day? Why is the manual written in jargon and not comprehensible? And why is navigation so difficult on the supplier’s website?

It is not just customer relations in B2B business that are becoming more similar to the consumer goods business, however. Many B2B providers are expanding their business model and addressing end customers directly: B2B2C. Once again, digitalization plays a role. For example, at MyHammer: this Internet platform brings together craftsmen and customers. It does not earn money from the end customers, but via a commission from

the craftsmen. In addition, it has an important interface with the consumer: the customer does not land on the website of a craftsman, but on the trusted “MyHammer” site – B2B becomes B2B2C.

### The pace of change is increasing exponentially

Most people are not aware how fast products, processes, and customer requirements are changing. This is because, as humans, we tend to think linearly, so dramatic changes may make us feel uneasy. Ray Kurzweil, futurist and Director of Engineering at Google, suspects we express exponential functions on linear curves. This is fatal for our interaction with technological developments, since these developments are increasing exponentially. Kurzweil forecasts extremely fast progress in the 21st century, as we are currently in the “knee” of the exponential curve.

A fundamental renewal calls for strength, conviction – and usually an impetus. A little fear, even existential fear, can be helpful here. It generates the pressure to act in established companies, together with the willingness to deal with the new. And this is necessary for a transformation. After all, it is necessary to develop new products, services, and processes that enable attractive prices – in short, a whole new value proposition. Those that fail to introduce transformation across the board will fall behind. Underestimating the extent of the forthcoming changes would be fatal.

### The central challenge: creating a sense of urgency

Efficient organizations often prove to be especially resistant. They follow their own logic: any changes to the established system initially reduce efficiency and are therefore to be avoided. And the most successful managers are especially prone to putting the brakes on transformation efforts behind the scenes. They calculate that they personally have little to gain, but much to lose. They are often opinion leaders and belong to the inner circle – this makes things even more difficult.

Those that hope that their own sector will not be affected and consequently carry on as before are running a risk. Essentially, all industries are affected, however, the old business model will be shaken with varying degrees of severity and speed. Hence, there is no standard answer to the question of what to do, each company needs to find its own way.

## # WHAT DOES TECHNOLOGY ENABLED TRANSFORMATION MEAN FOR MY COMPANY AND WHAT ARE THE RESULTING PRIORITIES?

Everyone has a different idea of digitalization, therefore, structured planning is essential. A three-stage process helps us to identify the strategic and operative tasks of transformation (Exhibit 2).

**Create new ecosystems.** This calls for strategic thinking. Innovations occur at the sector boundaries. Who will build the fully-networked, autonomous cars of tomorrow? Will we still need banks for financial transactions in the future? Will the equipment for smart houses come from the heating suppliers of today, or will completely different companies add value? Digitalization gives us new economic ecosystems and markets, in which shares will be redistributed.

The car industry is a good example: in the past, there were manufacturers, suppliers, garages, and customers who bought or leased their vehicles. Today, the industry works in a complex ecosystem in which, alongside the players of the past, digital companies, insurers, telecommunications groups, fleet managers, and lateral entrants also play a role. According to a current McKinsey study, investments in start-ups and technology companies from the car and mobility sector are reaching record levels: since 2010, USD 111 billion have been invested worldwide in new companies in the fields of autonomous driving, e-mobility, connectivity and carsharing. USD 31 billion were invested last year alone, more than in any other year. The average investment sum is also increasing: whilst in 2010, USD 4.5 million were invested per start-up, today that figure has risen to USD 15.8 million. Only 6% of the total sum is invested in these start-ups and technology companies by car

**Exhibit 2**  
**WHAT?**  
 Do the  
 right things  
 intelligently

## Create new ecosystems

### Thematic areas – examples

Connected vehicles	Digital trading	FinTech	Digital health	Digital agriculture
Intelligent buildings	Digital utilities	Digital media/communication	Digital logistics	E-government/e-education

## Further development of business architecture

Customer experience		Product innovation	Value added	
Multichannel trading	Digital front-end processes	Digital R&D and open, agile innovation	Digital logistics	Predictive maintenance
Digital marketing and social media	Customer relations, lifecycle management	Product design	End-to-end digital production	Digital purchasing
Commercial models, pricing	Integrated digital customer experience	Digital release management	Digital support functions	E2E digitization of other processes

## Strengthen foundations

### Technology

2-speed IT architecture	Big data and advanced analytics	Cybersecurity	Embedded software	Terminal devices and connectivity
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### Culture and organization

Digital managers, e.g., CDO	Agile, flat, cross-functional structure	2-speed organization	Digital talent management	Partner management
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manufacturers and automotive suppliers, considerably more comes from private equity companies and venture capital providers (50%) and investments from hardware (25%) and software manufacturers (19%). These are the findings of a new study, for which McKinsey analyzed over 1,000 transactions in the car and mobility industry since 2010. Traditional car manufacturers and automotive suppliers care to ensure that they do not lose their technological advantage to new competitors aggressively investing in young companies and thus gaining access to innovative technology, ideas, and talent. Although investment in classic research and development remains high – car manufacturers spent some USD 77 billion on this in 2016, automotive suppliers a further USD 34 billion – the industry nonetheless finds it difficult to enter into collaborative ventures with such young companies. Car buyers are already convinced: AI will shake up the market, according to a McKinsey survey. Only one in four regards the arrival of the new technologies as a risk; nearly half (47%) would have no concerns about entrusting the safety of their family to a self-driving car guided by AI. 70% of customers surveyed are in favor of fully-automated driving being approved as soon as possible.

As in the car industry, the coming years will see a redistribution of value pools in most sectors. The strategic questions that all businesspeople will face are: will competitors make an assault on our business with new technologies? Are we already making use of the opportunities offered by digitalization and actively developing new value propositions? Are new profit pools arising on the boundaries between traditional sectors? The more disconcerting the answers, the greater the willingness to renew the company's own business model, including accepting the cannibalization of current turnover. The requirement is for a new vision for the company, with a convincing value proposition that takes account of the disruptive energy of the changes. Implementing this is by no means easy. However, there is one item of good news for established companies: although the up-and-coming start-ups may be more aggressive, agile, and familiar with the digital world, the "old" economy still enjoys an enormous head start. Regardless of whether it is in retail, amongst car manufacturers, or in the financial sector – the established firms have contact to the customers and enjoy their trust. And they have already assembled an enormous pool of data. It only needs to be recorded intelligently.

**Further develop business architecture.** Are we utilizing the opportunities of the digital world and reaching our customers at all points of contact – the traditional and the new? Are we realizing all of the benefits offered to us throughout the value chain by digitalization and new analysis methods? How is digitalization changing our leadership and management processes?

Take for example the fashion industry: for both fashion labels and fashion retailers the question is no longer whether to work with online platforms, but the form that this collaboration should take. One third of fashion managers surveyed believe that the predominance of the online platforms will be one of the three most important trends in the fashion industry in the coming year. The fashion sector still lags behind other sectors when it comes to using AI. However, it has recognized the significance of AI. 20 percent of the fashion managers surveyed believe that AI will be important for reinventing design, merchandising, and marketing in the future. These are the findings of the report “The State of Fashion 2018,” which investigates the development of the global fashion industry. 500 fashion companies were analyzed and 230 trade experts surveyed for the report of the media company Business of Fashion (BoF) and the top management consultancy McKinsey & Company.

A further example is Maersk, the world’s largest shipping line, which now uses advanced analytics to develop a business field and a customer group that has thus far used expensive courier services due to the highly-sensitive nature of its products: manufacturers of temperature-sensitive products such as pharmaceuticals and vaccines. Until now, cooling units frequently broke down in the refrigerated containers, meaning that the cold chain was interrupted. Numerous complaints were the result. Since Maersk began using sensors to monitor the equipment in all 270,000 refrigerated containers, interpreting the transmitted data via advanced analytics, the shipping company is able to identify nearly all technical problems in advance, rectifying them via “predictive maintenance.” Because the cold chain is now reliable and documented, not only are existing customers much more satisfied, the shipping line is also gaining new customers. The alarm system also offers an economical

replacement to the previously time-consuming, expensive, and error-prone manual checks and documentation.

A further phenomenon of the digital age is the emergence of intermediaries, who encroach upon established business relationships. In the end customer business, mediation platforms for travel offers or the comparison of services are already established. However, now digitalization is also revolutionizing customer contact in B2B the same way as with B2C. For example, heating system manufacturers in Germany used to distribute their products primarily via heating fitters. Whether it was Buderus, Viessmann, Vaillant, Wolf, or Junkers – they all nurtured their links to the heating fitters, and these fitters had their customers. However, Thermondo then decided to establish an online platform, based in Berlin. Numerous decentralized service and installation teams supply customers with heating systems throughout Germany. The portal was established in 2012. The end customer can choose from numerous brands and receives a tailored fixed price offer, including installation. Thermondo even provides advice on applying for subsidies.

The digital age calls for new skills: those looking to conduct business successfully in their sector and in the newly-established ecosystems need to make all of the functions and processes in their company fit for the new era. The example of the successful digital companies points the way. There is one thing they all have in common: products and processes are developed strictly for customers and their requirements. As a consequence, for traditional companies the further development of business architecture begins with the customer experience: they need to orchestrate the purchasing or service experience for the customer on numerous channels, to investigate the opportunities for automated pricing, and immerse themselves in the world of social media, which is revolutionizing marketing.

For example, the Chinese Amazon competitor Alibaba aims to reinvent the shopping experience with its “New Retail” concept. In the summer of 2017, in Hangzhou, Alibaba introduced

its TaoCafe, a small brick and mortar store, tailored to the needs of customers on their way to and from work. Similar to the electronic boarding card at the airport, customers check into the TaoCafe with a QR code in Alibaba's AliPay app on their smartphone and are recorded on camera, with their image being evaluated by facial recognition software. In the shop, cameras then follow the identified customers, register what they take from the shelf and charge the purchase price to the customer account at Alibaba when they leave the store. Payment is made automatically via AliPay, the shop functions with no staff whatsoever.

However, traditional companies can also offer a new customer experience in the digital world. Instead of leaving part of their business to intermediaries, many are therefore digitalizing their B2B business themselves. For example, the chemicals company Dow Corning has launched its online platform Xiameter for small and medium-sized business customers and markets some 2,000 silicon products on it, in 90 countries. Because Dow Corning only markets secondary brands via Xiameter, no channel conflicts arise. In the online business there is little service and no adaptation to customer requests; order volumes are small and delivery periods short. Xiameter sets prices dynamically, with the platform using demand, stock levels, and historical data to calculate the respective optimal price. Dow Corning already achieves 30 percent of its turnover via digital channels.

Ultimately, it comes down to the product and its value proposition. According to the digital philosophy, products no longer enter the market in a perfect state, but with a basic configuration – followed by a swift and consistent further development. Customer reactions flow into further development in real time, with products and services approaching perfection in iterative loops.

For that, companies seek external assistance: for example, Honda develops special vehicles for customers with particular requirements in an open ecosystem with suppliers and specialists. When a cookie manufacturer was looking for an electrically powered delivery truck in the form of a rolling advertising column and with an interior

layout that offered protection to the fragile biscuits, Honda had the bizarre vehicle up and running within just two months in cooperation with a company experienced in 3D printing.

Those that orient themselves consistently on customer requirements, following the idea of agile innovation, can even leap across traditional sectoral boundaries. For example, IKEA: the Swedish furniture makers solved a common problem of smartphone users. They are constantly online, with the result that the batteries in their phones are quickly discharged, and there is often no charger at hand. In response, IKEA has developed a series of sideboards and chests of drawers with built-in contact surfaces for cable-free charging.

Comprehensive changes are also coming up in value creation: the Internet of Things, robots, and AI are revolutionizing manufacturing and supply chains. At the sporting goods manufacturer Salomon, robots produce tailor-made running shoes. The individual shape of the customer's foot is digitally recorded, innovative materials are added – and for EUR 300 the customer gets a running shoe that compensates foot problems. Whilst manufacturing robots have thus far been enclosed in cages for safety reasons, the new generation works hand in hand with human colleagues, reducing their idle time by up to 85 percent as a result.

Combining robots, production machines, and the supply chain calls for connectivity and technical platforms, which interact with sensors and actuators. Predictive maintenance, additive manufacturing, or collaborative robots are just some of the new developments of the digital world. 3D printing is also becoming increasingly important. For example, General Electric is now allowed to print some parts for aircraft engines – following extensive safety testing by the supervisory authorities. This can revolutionize spare parts logistics, because a lot of money can be saved if parts no longer need to be kept in stock, but can instead be printed on site as required.

Digitalization is also causing enduring changes to management and administration functions. Rules-based “robotics process automation” or the smarter virtual assistants, capable of lear-

ning thanks to AI, can already undertake a large portion of office tasks – and around 20 percent of the workload of management. However, to make effective use of the digital helpers, companies need to completely rethink all of their processes and instigate technology enabled transformation. Then all functions within the company can benefit from the new technologies.

**Strengthen foundations.** The third level, the foundations, deals with the technical and organizational basics. Typical questions: are we utilizing the latest, most capable technology in our work? How do we bring agility into the company – without importing excessive risk at the same time? How do we bring digital talent into the firm whilst at the same time constructing partnerships?

The transformation into a digital company typically begins with a very practical problem: a functioning IT system cannot be replaced overnight when completely new capabilities are required for digital projects. The company therefore needs a second pillar, an agile, swiftly working, separate IT system. Speed is the characteristic of the digital world. High pace of development, short cycles, speedy changeover – this is often too much for traditional IT organizations.

The next challenge is data, the new gold: in 2015, there were already around 16 billion devices connected to the Internet, transmitting data ceaselessly. This figure is set to rise to more than 26 billion by 2021. Big data and advanced analytics, the assembled unstructured data volumes and their intelligent evaluation, are now decisive success factors; expanding capabilities is key here. Data theft can be a risk to success – which is why companies need to protect themselves. And with the Internet of Things, software is gaining access to all conceivable objects, which in turn transmit data continuously. These need to be made accessible to the manufacturers, for example, to increase operational time via predictive maintenance.

Although data is regarded as the new gold, only those that master advanced analytics can realize the value. Like aircraft engine manufacturer Rolls Royce: the company no longer offers its turbines to airlines solely in purchase or leasing forms, there is also a model where billing occurs according to flying time. Rolls Royce undertakes maintenance and guarantees a specific level of availability. The engine maker can afford to do this because it makes such effective use – via advanced analytics – of the masses of data recorded by the numerous sensors in each turbine that downtime and problems can be minimized thanks to predictive maintenance. In the interpretation of the data, Rolls Royce has a vast head start over its customers, as it has the largest data volumes. At the most, airlines could analyze the data from their own turbines.

Digitalization is also altering the culture and organization of the company. For example, the position of Chief Digital Officer (CDO) has arisen – coordinating the realization of the digital concept within management. For this, the CDO requires staff with digital talent, who can convert ideas into programs in the development teams. Traditional companies need to offer more than a high salary to make themselves attractive to this talent. Silo mentalities, hierarchies, and bureaucracy are rejected by the young staff they seek to hire. Ideally, in the transformation process, the working style of the digital natives, which is intended to set the company on a course for the future, also radiates into all other functions. Agile, interdisciplinary, with flat hierarchies – this is the way companies are organized in the digital age. And in the new ecosystems they typically work with a network of partners. This interaction needs to be managed – and organizations accustomed to competition also require a plan for this.

## # HOW DO I DEAL WITH THE TASKS THAT ARISE AS A RESULT OF TECHNOLOGY ENABLED TRANSFORMATION?

So how can a technology enabled transformation succeed? Radical intervention in structures, processes, management instruments, and IT technology is needed here (Exhibit 3).

**Draw up a plan.** First comes the roadmap for the digital future. This does not limit itself to individual departments or positions, the motto here is “think big,” the plan needs to cover the digitization of the entire company. This involves the development of a long-term roadmap, with the definition of milestones and intermediate goals. Whether the digitization begins in sales, production, or another field, decisions are made according to the anticipated added value. Investment here is targeted and emphatic. The plan stipulates direction and priorities – it is often the key to a transformation program lasting several years.

The Tolino e-reader is a good example of when an underdog successfully took on larger companies with a quality product. To create Tolino, German booksellers joined forces with technology partner Telekom to develop a product that could compete with the Kindle of industry giant Amazon. Despite a late start and scarce resources, the digital projects launched successfully. In the German-speaking region, Tolino now competes head-to-head with Amazon; this is unique worldwide. Together with new partner Rakuten, a Japanese Internet giant, the goal is now to tackle the global market.

The important lesson for all of us: put the focus on the customer. Digitized all processes that the customer has with your company according to importance – from beginning to end, no partial solutions. And when further developing concepts, put customer benefits first at all times. This is also what ING Diba did. The direct bank reduced the time required to open an account, which until recently took several weeks, to ten minutes online.

### Exhibit 3

#### HOW?

Resolute, comprehensive, and fast realization



To ensure that you can actually digitize the processes from beginning to end without being held up by the boundaries between functional responsibilities, you need to form cross-functional teams, supplemented by digital talent. A key role here is often played by the so-called translators. These employees are characterized by the fact that they understand their respective counterparts, e.g., marketing experts who recognize and solve programming problems, or IT specialists who are able to think in terms of profit contribution.

**“Arm” the digital operation.** One level down, the elements of the digital operation are defined – we switch to a digital operating system. Here, the company needs to optimize its development, according to the motto “speed before perfection.” Companies need to learn to develop their projects in rapid iteration loops. This calls for a new culture of testing and learning: new products and services are swiftly tested on the market, the result is assessed and optimized further as required. This is how Lufthansa iteratively digitized the check-in process. Previously, customers went to the check-in desk with

their ticket and were handed a boarding card. Then, electronic terminals were placed next to the desks, passengers could print out their boarding cards themselves by entering a code. Soon after that, it was possible to check in on the computer at home. Today, the majority of passengers no longer have a printed boarding card, they check in with their smartphone – after a number of developmental loops the “minimum viable product” has evolved into a completely digital process, at the precise speed that was acceptable to both customers and employees.

To control digitalization in a reliable manner, it is necessary to alter the standard organization of the company. Following the example of venture capital management, budgets are not set for fixed periods of time but instead bound to the achievement of intermediate goals, with progress critically evaluated in predetermined stages and projects immediately halted where necessary. If this is complemented by a new understanding of management with flat hierarchies and numerous subresponsibilities, then the company is running in the digital operating system.

**Use consistent scaling.** What is required now is consistent realization: think holistically! A prerequisite for this is that top management sets a good example, “living” and communicating digitally and developing inspiring visions that are translated into a gripping narrative (“story telling”). The goal is to enthuse everyone at the company for the transformation – despite the uncertainties along the way. Employees need to learn to deal with this uncertainty and unexpected responses from the market. At the center is scaling, the rolling out of the transformation process within the entire company and its ecosystem. Using IT as a weapon, initially requires a two-pronged approach: day-to-day business with all sensitive data continues as before in the stable structures, whilst agile IT systems with new capabilities are established for the rapidly-evolving new tasks. However, the greatest challenge at this level is being fast enough. Solutions need to be initiated promptly, tested in pilot projects and then installed throughout the company – speed counts more than perfection for technology enabled transformation.

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### **SUMMARY – THE CEO NEEDS TO LEAD**

The digital company is more dependent on the commitment and responsibility of its employees than its traditional predecessor. Nevertheless: technology enabled transformation is a top management issue. Only when those at the top of the company embody the change can a new culture develop. And only in this way can the necessary far-reaching interventions in structures, processes, and management instruments as well as the expansion of new capabilities and IT systems prove successful. Thus, even traditional companies can reinvent themselves.





