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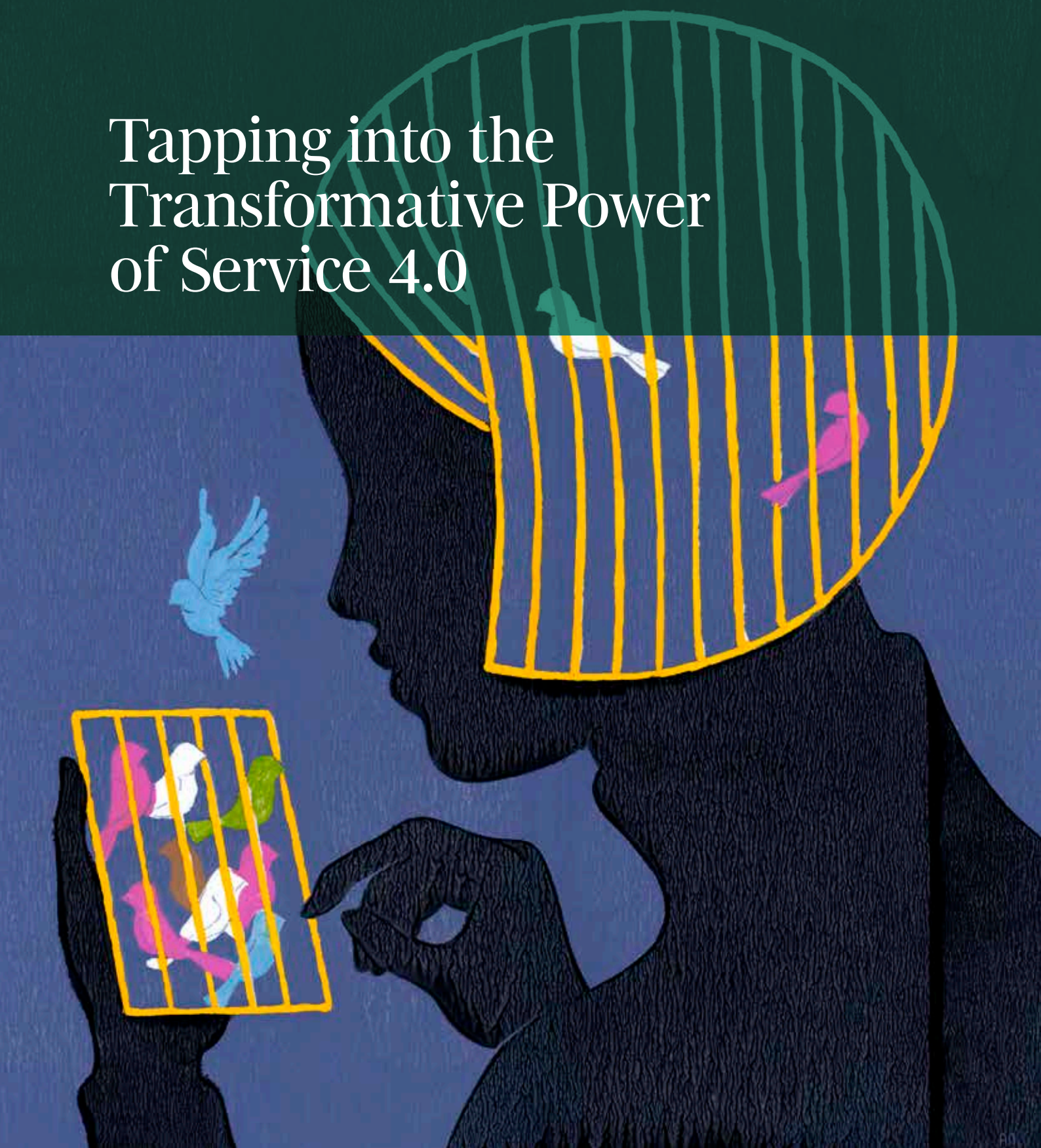
Tapping into the Transformative Power of Service 4.0



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Tapping into the Transformative Power of Service 4.0

Olaf Rehse, Stefan Hoffmann, and Christoph Kosanke

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AT A GLANCE

The advances in technology that constitute Service 4.0 make it possible for companies in many industries to transform the way they offer and deliver services. Service companies, however, have been slow to adopt this wave of innovation to improve their operational efficiency and enhance customer satisfaction.

Transforming Service and the Workforce

Companies that do take advantage of advanced technology can benefit from new opportunities, such as substantial cost savings and improved customer satisfaction. Up to 60% of a typical service company's operating costs fall within the scope of Service 4.0, and the overall savings potential can reach up to 40% of those costs. The increased adoption of Service 4.0 will have major implications for the workforce, too. In Germany and Austria, for example, up to 6 million jobs will be at risk over the next five to ten years.

Tapping into the Transformative Power

To determine the best transformation path, a company must make well-informed choices along a continuum of options in various dimensions. Key challenges include attracting and retaining highly skilled workers and overcoming the limitations of traditional governance modes and legacy IT systems.

DIGITAL TECHNOLOGY IS REVOLUTIONIZING the provision of services. Consider the following scenario: A Berlin resident we'll call Paul has recently moved to a new apartment in the city. To initiate phone and internet service, he plugs his router into a wall outlet. Five minutes later, he receives a call from his service provider. An agent we'll call Anna asks Paul to confirm that he has moved. She reads aloud the new address and Paul confirms that the information is correct. Anna tells Paul that she has updated his account information and arranged for the same-day delivery of a new, preconfigured router that will allow Paul to benefit from the higher-speed service available at his new address. Anna also offers, for a small extra charge, to update Paul's address in the account records of his bank. Paul accepts the offer to avoid the hassle of updating the information himself. Anna then takes the opportunity to recommend that Paul upgrade to a data plan that better fits his usage patterns. Sensing that Paul is reluctant, she offers a free trial, which he accepts. Throughout the brief conversation, Anna speaks to Paul in English, because she knows it is his preferred language.

Anna, however, is not a person but a computer program that acts as a virtual call center agent. The program understands natural language and the meaning that a customer wants to convey, and it can sense and react to the customer's emotions. It is able to respond fluently in more than 30 languages. Like a human worker, Anna learns to solve problems and applies the insights it gains to define the best course of action.

Much of the technology necessary to turn that vision of providing services into reality already exists. However, few companies in service industries have reached such an advanced level, which we call Service 4.0. (See the sidebar "The Evolution of Service Provision.") Service 4.0 holds great promise for enabling service providers to respond to the challenges of increasing cost pressure, evolving customer behaviors, and an unstable competitive environment. It represents a significant change in performance, affecting how companies both offer and deliver services. Advances in technology allow companies to offer proactive and truly customized services and to deliver them through multiple channels and shared, open infrastructures.

Service 4.0 allows companies to offer proactive and truly customized services and to deliver them through multiple channels and shared, open infrastrucutres.

Service companies lag far behind industrial companies in applying technology to improve their operational efficiency and to enhance customer satisfaction. Telecommunications is a case in point. BCG analysis shows that telecommunications is still one of the most inefficient service industries, with as much as 50% of its cost basis eaten up by waste. Waste can be produced in many ways, such as when companies provide service levels that exceed what customers require, maintain unnec-

THE EVOLUTION OF SERVICE PROVISION

BCG has classified the evolution of service provision into four stages:

- **Service 1.0.** Arising in the 19th century, this basic level of service provision entails manual, nonstandardized service. Traditional bookkeeping, performed by a clerk who manually records a business's day-to-day financial transactions, exemplifies this initial stage of service provision.
- **Service 2.0.** During the first half of the 20th century, the widespread use of the postal service and the telephone, as well as the adoption of scientific management, enabled service provision to become standardized, industrialized, remote, and labor intensive. The deployment of call centers in the 1950s shows how these developments transformed service provision.
- **Service 3.0.** In the late 20th century, the adoption of computers and the internet, supported by open standards, allowed companies to automate service provision to some extent, to integrate their value chains, and to provide the first generation of channel-specific, self-service options. The self-service terminals that are now ubiquitous in banks and transportation stations exemplify how technology reduced the labor intensity of service while improving the customer experience.
- **Service 4.0.** Today, advances in software and hardware allow for proactive and customized service through multiple channels. By analyzing troves of data on customer preferences or by gathering insights from sensors deployed throughout their networks, for example, service providers can anticipate customer needs and respond proactively.

essarily high levels of network resources and call center staffing, or rely too heavily on manual work in provisioning and fault repair. Waste also arises from rework to address incomplete provisioning, from errors caused by quality issues in the network or incorrect data entries, and from idled employees awaiting work items. We have observed similar levels and patterns of waste in other service industries, including energy, banking, and insurance. (See Exhibit 1.)

This report describes the technology trends that enable Service 4.0 and presents examples of how companies are taking the first steps to use new technologies. We also explore how Service 4.0 will affect the workforce across industries. Finally, we discuss how service companies should approach transformation to capture the benefits of this revolution in service provision.

Customers Have Dramatically Higher Expectations

Customers increasingly expect service interactions to be simple, intuitive, proactive, and personalized. They also want real-time access to service providers and seamless

Exhibit 1 | Service Industries Experience High Levels of Waste

ACROSS SERVICE INDUSTRIES, THE TYPICAL WASTE LEVEL IS 40% TO 50% OF THE ADDRESSABLE COST BASE

SOURCES OF WASTE	ENERGY	TELCO	BANKING	INSURANCE	GOVERNMENT	HEALTH CARE
OVERPROCESSING	Unnecessary use of expensive systems and resources (for example, unneeded system complexity)					
OVERPRODUCTION	Excessive service and output levels, which have an insufficient link to customer value					
TRANSPORT	Too many unnecessary physical activities and processes (for example, multiple data entries)					
MOTION	Manual work that can be automated or eliminated (for example, data lookups or validations)					
INVENTORY	Large stockpiles of physical goods (for example, telco devices) or a backlog of troubleshooting tickets					
DEFECTS AND REWORK	Quality problems that hinder downstream processes or necessitate rework					
WAITING	Inefficiencies that result from waiting for resources or slow processing					
IMPROPER UTILIZATION OF SKILLS	Use of overqualified employees for simple tasks or underqualified employees for complex tasks					

Source: BCG analysis.

interactions across multiple channels. However, traditional service providers often fail to meet these expectations. For example, the complexity of service tiers and monthly bills leaves many customers feeling uncertain about the services they are receiving and whether they are getting good value for their money. Many customers are also frustrated by their interactions with service providers, which often entail long wait times; a discontinuity among in-store, phone, and digital channels; and a reactive approach to addressing service issues.

By using advances in technology to enhance their everyday offerings, leading digital players meet, and often exceed, customer expectations. These companies integrate external data (gathered from social media sites, for example) and internal data (such as a customer's purchase history) to create holistic customer profiles and make real-time, personalized offers. They also respond swiftly to complaints and provide customers with simple, interactive tools that make advice visible and easy to access. Netflix, for example, revolutionized media consumption by providing highly accurate recommendations to its subscribers on the basis of ongoing analyses of user preferences and behavior.

Amazon provides another example: the company integrates live support into its Kindle tablets, thereby removing the traditional barrier between the service provider and the user. By tapping the Mayday button in the tablet's menu, a user is connected with a support representative within 15 seconds—at any time of day, 365 days a year. Once connected, the user can see the support representative in a small window on the tablet's screen, and the representative can view the open app or home screen on the user's tablet.

Some service providers already use Service 4.0 technologies to actively monitor the status of a device. We expect that, as a next step, providers will apply the informa-

tion to proactively offer help to customers before receiving a service request, or even resolve faults remotely without involving the customer.

Service 4.0 Represents a Fundamental Transformation

Service 4.0 helps companies meet customers' higher expectations by fundamentally transforming the way services are offered and delivered. (See Exhibit 2.)

Consider the transformation from a reactive to a proactive offering, for instance. To target individuals for marketing outreach, telcos, insurers, banks, and other service providers can use analyses of social media posts to identify people who have expressed complaints about competitors' service quality. Similarly, companies can apply cognitive computing to customer interactions to identify current customers who are highly likely to defect. To improve satisfaction and reduce the strain on call centers, companies can use remote monitoring, enabled by the mining and analysis of data gathered via sensors, to detect issues such as device failures and then notify customers. To minimize service costs and downtime, they can analyze network data to predict component failures and then replace components during the course of regularly scheduled field-force operations.

The transition from delivering services through remote service centers to a seamless omnichannel experience also exemplifies what is new about Service 4.0. By integrating in-store, phone, and digital interactions on a single technology platform, service providers can enable customers to begin a service interaction in one channel and then switch to another channel without having to start over. For example, to initiate a service request and deliver the relevant information, a customer can use a mobile app or speak to a virtual agent. If the customer prefers, he or she can

Exhibit 2 | Service 4.0 Is a Fundamental Transformation

	FROM SERVICE 2.0 OR 3.0	TO SERVICE 4.0
OFFERING	Reactive	Proactive
	Industry-specific, separated	Integrated, bundled
	Standardized, modular	Customized, human-centered
	Experience-based	Data-driven
DELIVERY	Explicit, manual interfaces	Implicit, virtual interfaces
	Remote service centers	Seamless, omnichannel
	Predefined paths	Dynamic, real-time paths
	Heterogeneous, separated systems	Shared, open infrastructures

Source: BCG analysis.

complete the request with an in-store agent who uses the store's computer system to access the information that the customer has already provided. If customers have end-to-end access to sales and service interactions via digital self-service channels, their use of these channels will increase significantly. At the same time, costs will decrease sharply and the customer experience will improve dramatically.

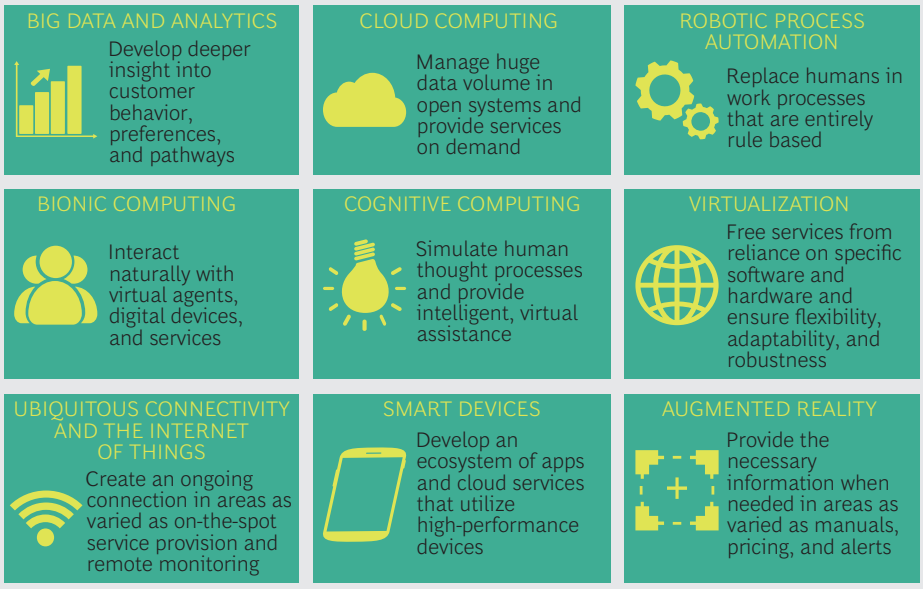
Nine Technologies Enable Service 4.0

Nine technologies enable the transformation to Service 4.0 and promote efficiency gains throughout the value chain. (See Exhibit 3.) The four use cases below illustrate how companies are deploying some of these technologies to transform service.

Big Data and Analytics. By analyzing large data sets, service providers can assess customer behavior, preferences, experiences, and pathways. One insurer, for example, uses predictive analytics and big data to optimize fraud detection. It has improved fraud detection by approximately 30% and decreased erroneous determinations of low risk by approximately 50%. These improvements have enabled the company to reduce payments for fraudulent claims, resulting in a decrease in claims expenses of up to 5%. Similarly, a telco analyzes the social network created by the millions of calls carried over its network every month. The insights allow the company to build social graphs of communities and influencers, which the company then uses as input for its churn prediction analysis, contributing to an improvement of approximately 50% in the accuracy of predicting churn.

Ubiquitous Connectivity and the Internet of Things. Integrated sensors that communicate conditions to a central database are enabling a variety of service providers to remotely monitor their network's performance. For example, GE Grid Solu-

Exhibit 3 | Nine Technology Developments Enable Service 4.0



Source: BCG analysis.

tions, a GE and Alstom joint venture offering power equipment and software solutions for the efficient transmission of electricity, applies model-based analytics to assess data constantly transmitted from electrical grids. The assessment predicts grid stability over specific time frames, such as during peak usage periods. Decision support tools enable the instant detection of unstable conditions. The system allows the staff to continuously fine-tune real-time voltage, take corrective actions to prevent potential blackouts, and initiate proactive maintenance.

Cognitive computing has game-changing value for services.

Cognitive Computing. Cognitive computing—in which software can automate decision making and learn from past mistakes—has game-changing value for services. This technology can offer intelligent, predictive virtual assistance by simulating human thought processes, learning on its own, and applying situational information about people, places, and things.

All industries are likely to benefit from cognitive computing. It is most valuable for solving problems that require applying vast amounts of unstructured data to ask the right questions, find the rationale for specific answers, and generate evidence-based decisions with confidence. For example, Versicherungskammer Bayern, an insurance provider, applies the cognitive-computing capabilities of IBM Watson to analyze and route customer requests. The insurer receives 7 million customer requests in writing each year and must route the requests to an administrator who can respond appropriately. In addition to searching for key words, IBM Watson is trained to understand a conversation's semantics. The system improves its capabilities by learning from each request. By deploying IBM Watson, the insurer has been able to improve the categorization of customer requests and reassign administrators to other tasks.

Nedbank, a large bank in South Africa, has applied IBM Watson's predictive analytics to study social media, so that it can better anticipate customer needs. The analytics capability helps the bank derive insights from monitoring social media, which allows it to target competitors' customers with individual offers. The bank has significantly reduced its social media monitoring costs while increasing customer service productivity by 20%. The ability to embed information-based insights into every process, decision, and action has transformed the bank's approach to customer engagement.

Augmented Reality. Service providers can use augmented reality to provide workers with real-time information that improves decision making and work procedures. For example, utility providers use augmented reality to provide field-force technicians with step-by-step repair manuals. The technology enables unskilled workers to perform simple maintenance tasks without the need for telephone support from a central help desk.

Companies Can Benefit in a Wide Variety of Ways

Service 4.0 provides the basis for a step-change in the performance of service providers in all industries, including banking, insurance, energy, and telecommunications. Four benefits stand out:

- Greater flexibility, such as by implementing simplified data workflows and shared, open infrastructures

- Faster speed in developing an initial idea into a new service or responding to customer requests, such as by using improved IT and new ways of working

- Higher productivity, such as through increased automation of process steps and support tasks

- Better quality, such as by deploying real-time monitoring and quick interventions to prevent foreseeable errors

BCG analysis found, for example, that up to 60% of a typical telco's operating costs fall within the scope of Service 4.0. Even a telco that has already streamlined its operations will likely find multiple use cases for applying Service 4.0 to improve efficiency along its entire value chain. (See Exhibit 4.) The overall savings potential is up to 40% of the addressable costs. The highest cost-cutting potential is found in core customer-facing processes, such as lead generation and sales, order fulfillment, and customer service, as well as in the enabling processes of technology management and IT management. The following use cases illustrate the potential.

Advanced Self-Service. Mobile apps that enable self-service can generate significant value. By providing detailed billing information regarding tariffs, roaming fees, data allowances, and add-ons, such apps demystify data charges and foster transparency. Helping customers understand their bills reduces the volume of customer service calls and strengthens customer loyalty. One telco, for example, has introduced a

EXHIBIT 4 | Service 4.0 Improves Efficiency Throughout the Telco Value Chain

	CORE PROCESSES	ADDRESSABLE COST BASE (%)	SAVINGS POTENTIAL (%)	EXAMPLES OF USE CASES THAT PROMOTE EFFICIENCY
CUSTOMER-FACING	Marketing campaigns	5	~30	• Real-time customer microsegmentation providing fast, tailored targeting • Data-driven advertising, customer experience analytics, and measurement
	Lead generation and sales	20	~30	• End-to-end purchasing via digital channels, including selection, configuration, and contracting • Machine learning to assess fraud and default risk and to predict account overruns
	Order fulfillment	10	~60	• Big data and cloud-based field-force management and optimization • Remote product and service upgrades based on next-generation software and hardware
	Customer service	15	~65	• Virtual agents, real-time decision support, and proactive fault repair • Resolution of a full range of issues and requests via self-service channels
	Retain and win back	10	~40	• Proactive identification or retention of customers with high propensity to churn by applying big data analytics or cognitive computing to client interactions
ENABLING	Product management and innovation	5	~30	• Virtual interfaces for simultaneous, cross-functional product development and paperwork elimination • Predictive modeling to simulate demand and performance of new services
	Technology management	20	~35	• Virtualization of network infrastructure to reduce reliance on hardware and software • Remote monitoring and predictive maintenance to reduce downtime
	IT management	10	~40	• Replacement of legacy IT systems with scalable, adaptable cloud solutions • Virtual test environment enabling fast and inexpensive feedback loops
	Support functions	5	~35	• Robotic process automation of high-volume, low-complexity tasks • Cloud-based outsourcing of support services to external service providers
	Total	100	~40	

Source: BCG analysis.
Note: The savings potential is a percentage of the total addressable cost base for a sample telco.

self-service app, as well as extensive video tutorials and guides, to augment such standard resources as FAQs and forums. The addition of these advanced self-service resources has contributed to a 45% reduction in the volume of customer service calls, resulting in annual savings of more than $500 million. Customer satisfaction, as measured by the net promoter score, has also improved significantly.

Targeted Marketing. Service 4.0 helps companies move toward real-time microsegmentation and insight-driven advertising by using customer profiles and contextual information. The real-time assessment of a customer's situation and personal preferences allows companies to treat each customer as a "segment of one" and to provide hyperpersonalized offers and discounts. Microsegmentation has a variety of benefits, including a reduction in marketing investments and customer acquisition costs as well as an increase in revenue through higher levels of offer acceptance and loyalty. A case in point is the use of proficiency modeling to predict which customers are interested in an offering. Our project experience indicates that proficiency modeling enables companies to capture up to two-thirds of the total upselling potential by targeting only 30% of the customer base.

Proactive Maintenance. Companies can generate significant savings by using big data analytics to enable proactive maintenance. For example, a utility provider can collect a trove of data by deploying sensors throughout its network and devices. The company can then analyze the data to reveal patterns that signal potential failures and use that information to develop procedures for proactive interventions. By tracking the success of these efforts, the company can continually improve the procedures. Our project experience indicates that the use of big data analytics enables companies to detect more than 50% of failures two hours before they would have occurred. Such improvements reduce system downtime related to failures by approximately 50%. Companies also increase customer satisfaction and reduce call volumes if they use voice recognition, text messaging, e-mail, or social media to proactively inform customers about problems and the status and expected completion time of resolution efforts.

The adoption of Service 4.0 will have major implications for the workforce across business sectors.

Enhanced Planning. In addition to preventing failures, companies can use data obtained by actively monitoring networks and devices to improve efficiency along the entire value chain. For example, a telco can use such data to predict, on a microsegment level, customer movements, usage, satisfaction, intake, and churn. It can also use the data to inform efforts in network capacity planning, optimization, and rollout sequencing. What's more, the company can use the data in simulations of the demand for, and performance of, new services, tariff schemes, and product packages to support product development and management.

How Will Service 4.0 Affect the Workforce and Competition?

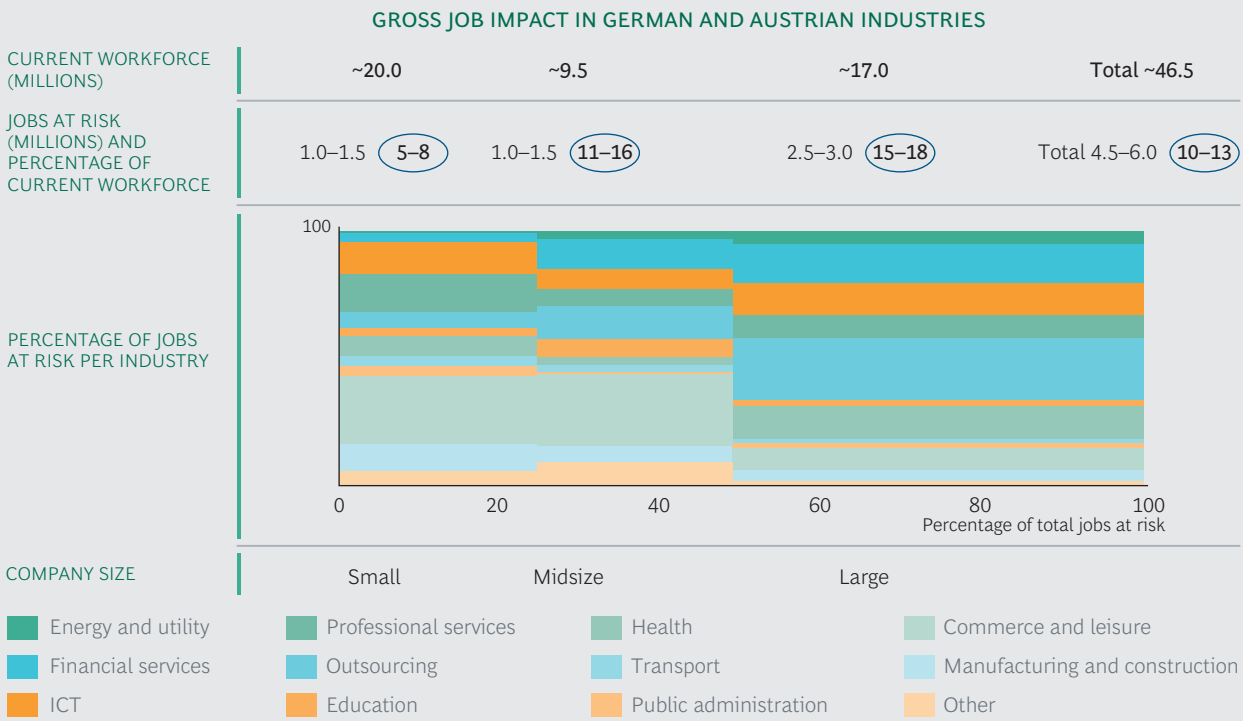
The increased adoption of Service 4.0 will have major implications for the workforce across business sectors and will affect service providers and even other industries. The changes in service provision will occur at a faster pace than ever before.

To understand how the workforce will evolve as a result of Service 4.0, we looked at its effects in Germany and Austria. These countries' industrial landscapes are repre-

sentative of those of other advanced industrial countries. Our initial assessment indicates that up to 6 million jobs (representing 13% of the workforce) could be affected over the next five to ten years. (See Exhibit 5.) The estimated impact varies depending on the industry, company size, and functional area. The industries most affected will include telecommunications, financial services, and energy and utilities. Companies in such industries employ a large number of workers for sales and service, and a large proportion of the jobs entail transactional work. We assume that the percentage of jobs at risk will be highest for big companies in the short term, because scale effects will allow these companies to capture the greatest benefits, and they will be the first ones to make the significant investments required to adopt the new technologies.

Eventually, the transformation to Service 4.0 will reduce, to a large extent, the need for human workers to perform activities in service industries. The first workers affected will be those with low-skilled job profiles that entail performing routine and repetitive tasks. Such tasks will be undertaken by software, which removes friction in business processes. But more-demanding job profiles in planning and steering will also be at risk as companies adopt artificial intelligence and software that can execute tasks with great precision. In such cases, human intervention will be needed only to oversee, optimize, and further develop systems. At the same time, new

EXHIBIT 5 | The Adoption of Service 4.0 Will Reduce the Demand for Workers Across Service Industries



Sources: Destatis; BCG estimates.
Note: Company sizes are as follows: small = <50 FTEs; midsize = 50 to 249 FTEs; large = >250 FTEs.

job profiles will emerge that include performing tasks related to innovative services that were not previously possible or financially feasible. The demand for, and complexity of, IT will also increase. Although new types of jobs will be created, the vastly reduced need for human labor will likely result in a net reduction in the total workforce.

In addition to these quantitative effects, the labor market will experience qualitative changes with respect to the tasks performed by each type of worker, the ways of working, and the competition for talent. These changes will, in turn, have ripple effects throughout industries. For example, as employers require a better-educated workforce with very specialized skill sets, competition will intensify to attract highly qualified workers, including specialists in IT, data management, and analytics. This, in turn, will increase the costs of recruiting and hiring. To capture the immense scale benefits of introducing new technologies across functions and countries, companies will also need to promote closer collaboration among business, functional, and country units and with external partners. Success will require replacing rigid organizational structures with teams that are dynamically composed of employees benefiting from workplace flexibility, such as working from remote locations.

To remain competitive, companies need to develop competencies essential to Service 4.0.

Additionally, competitive pressure will intensify across service industries. To meet customers' demand for more differentiated services, companies will need to shorten development cycles. Incumbents will find that their established business models are increasingly threatened by the rise of digital startups and the transition from closed to open platforms. Disruptions will also occur as industry boundaries blur: service providers will seek to expand their technology offerings while technology companies seek to expand their service offerings.

To remain competitive in the long run, traditional service providers need to develop competencies essential to Service 4.0, such as IT capabilities or the industry-specific capabilities required to expand beyond traditional offerings. They also must form a dynamic network of suppliers and outsourcing partners that are able to offer services on demand that incumbents can integrate into their own value chains. Finally, to reduce costs and enhance performance, companies should consider ways to apply Service 4.0 in their own support functions. (See the sidebar "Support Functions Will Also Be Affected by the Transition to Service 4.0.")

How to Evolve to Service 4.0

Evolving to Service 4.0 will not be easy. A transformation must address each of the major elements of a service provider's operating model: the organization, people, and IT. There are multiple ways to design and run a successful transformation, but all companies will need to choose from a continuum of options in various areas, such as the company's degree of ambition and rollout plans. Collectively, the options selected will constitute the path to transformation. (See Exhibit 6.)

As a first step, a company should decide on the ambitiousness of the transformation program along a continuum from achieving rapid incremental changes to developing radical, game-changing solutions. Next, the company should make choices

SUPPORT FUNCTIONS WILL ALSO BE AFFECTED BY THE TRANSITION TO SERVICE 4.0

The application of disruptive technologies is not limited to customer-facing functions. Advances in technology will reshape the future of service along the entire value chain, including such support functions as finance and human resources. Two use cases help to illustrate how companies are deploying technologies to transform support services:

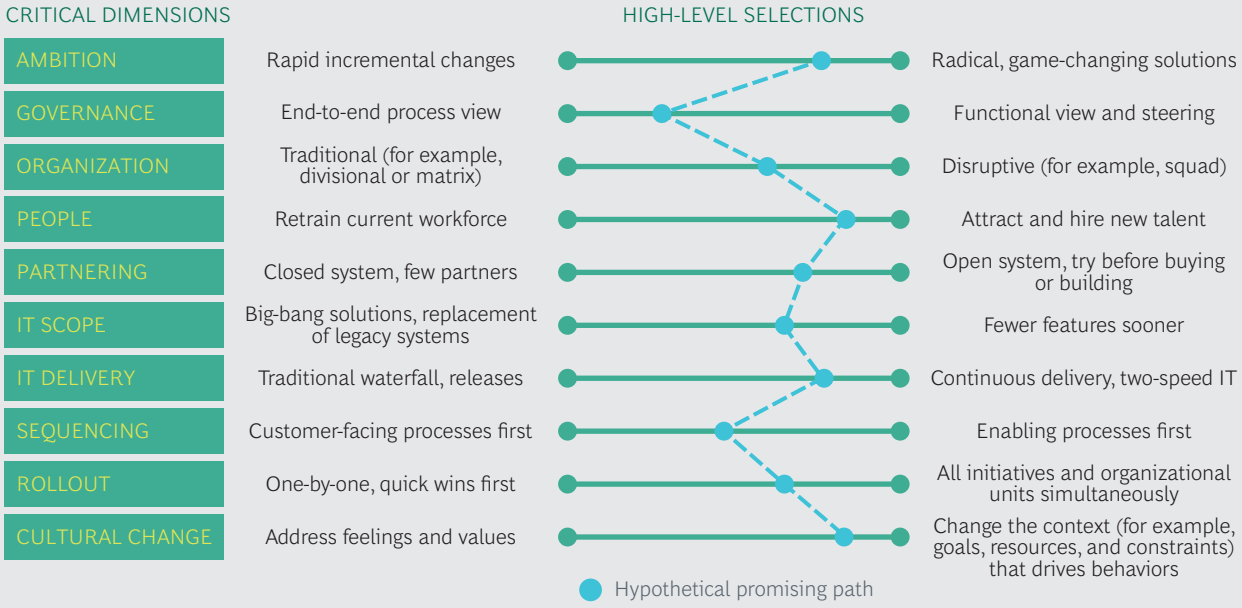
- **Cloud Computing.** Today, leading cloud vendors worldwide offer solutions as a service across all cloud layers—business process, software, platform, and infrastructure—to boost process efficiency and reduce costs. Support functions can increase the performance and speed of calculations by deploying enterprise cloud solutions for comprehensive data integration, real-time processing, and analytics. The use of SAP HANA (a database management technology) in finance, for example, can reduce the run time for monthly statements by more than 50%, the number of corrections by 40%, and the cost of auditing by more than 20%.

- **Robotic Process Automation.** IT legacy systems in support functions are not easily adaptable. As a result, most routine processes still require human intervention, which leads to errors and reduces speed and efficiency. An automation capability known as software robots can replicate human actions, such as data entry and account handling, and thereby eliminate errors.

- Software robots can be programmed without the need for writing code or modifying the software or system in which they will be applied. They are best applied to processes that have a routine and clearly defined flow, are entirely rule based, and require digital input. Support functions can use software robots on a 24-7 basis to improve the management of peak loads, increase flexibility, eliminate human errors, and enhance reporting and process controls. For example, the Australia and New Zealand Banking Group adopted software robots in 2015 to improve its agility in managing approximately 20 back-office processes for loans, payroll, and human resources. Within 12 months, the bank deployed 100 software robots to replace 300 full-time employees.

related to governance and organization. Most companies will take an integrated approach to governance that aims to optimize processes end to end—though implementing this approach is quite a challenge because it is contrary to the siloed approach traditionally used by most companies. To infuse agility and speed into the program, companies should experiment with new forms of organization, such as the squad—a self-organizing, multidisciplinary team that has the autonomy to decide how to achieve a shared objective.

Exhibit 6 | Each Company Must Choose Its Service 4.0 Transformation Path



Source: BCG analysis.

To succeed in the long run, a company will need to do more than retrain its current employees. Successful transformations require attracting and hiring new talent with core capabilities in new technologies, such as big data and the cloud. Similarly, relying on existing business partners will not be enough. To differentiate themselves from competitors, companies must create and maintain an open partnering system in which flexible collaboration among players from different industries supports the sharing and monetizing of new services. For example, in the travel industry, providers bundle services from airlines, hotels, and insurers into a comprehensive package.

Legacy IT systems present a major bottleneck to achieving a complex Service 4.0 transformation. For most companies, the best approach to overhauling IT will be to conduct pilots using standard solutions and best practices in order to rapidly create a few new features. After achieving early results, they can develop customized and big-bang solutions that fully replace legacy IT systems. Many established service providers will find it essential to follow a two-speed approach that distinguishes between a fast-track digitization process and a long-term IT roadmap. The fast-track changes are made using an agile development approach that entails short sprints, each lasting approximately two to three weeks. Companies typically require four sprints to create the first prototypes, which they then use to rapidly test and refine new services and processes. The agile approach requires close, pragmatic cooperation among teams from product development, business, IT, and operations. The teams need clear rules governing fast-track development, emphasizing a "fail fast" mindset and setting development priorities on the basis of the value delivered.

Companies must also determine the right sequence for the transformation efforts. Issues to consider include which business units and countries to begin with, wheth-

er to focus on customer-facing or enabling processes, and which transformation initiatives to implement at the start. For example, they can use a cascading approach in which lessons from the most effective business units or countries are captured and then applied in subsequent waves involving a successively larger number of other units or countries. Or they can make simultaneous improvements to customer-facing and enabling processes to gain benefits along the entire value chain and focus on the most promising initiatives identified by using clear rules for prioritization and piloting.

While these are the main issues to consider, there is no one-size-fits-all way to design a Service 4.0 transformation. A company must tailor its program to address its distinctive needs and strategies. Success requires considering the selected path's benefits and tradeoffs to ensure that the company can achieve its objectives.

Add Service 4.0 to the C-Suite Agenda

The potential upside of applying new technologies to reduce waste and increase customer satisfaction is even greater for service providers than it is for industrial companies. To realize the full potential, companies need to pursue a transformation that enables them to differentiate themselves in the market by challenging the established norms of service provision.

The first companies to successfully complete the transformation to Service 4.0 will likely gain a sustainable competitive advantage. They will attract the best talent to design and implement new offerings and establish themselves as the leaders in providing services enabled by advanced technologies. As a result, these companies will benefit from strong ties with skilled employees and customers that will make it even harder for the laggards to catch up.

To promote success, companies must determine how to manage the transition to Service 4.0 given the limitations of legacy operating models and IT systems, how to transform the current workforce in order to compete, and how to handle the tradeoffs entailed in the selected transformation paths. Because this transformation must be orchestrated across functions and business units, the C-suite must provide top-down guidance, active leadership, and governance in order to bring the entire organization along on the journey.

About the Authors

Olaf Rehse is a senior partner and managing director in the Düsseldorf office of The Boston Consulting Group. He is the global topic leader for lean services, as well as a member of the global leadership team in the Operations practice. You may contact him by e-mail at rehse.olaf@bcg.com.

Stefan Hoffmann is a partner and managing director in the firm's Cologne office. He focuses on the operations topic in the Technology, Media & Telecommunications practice, covering front- and back-office operations as well as support functions. He is a member of the firm's Operations @ TMT leadership team and its lean service trainer cadre. You may contact him by e-mail at hoffmann.stefan@bcg.com.

Christoph Kosanke is a project leader in BCG's Berlin office. He is a core member of the Operations practice and the Technology, Media & Telecommunications practice. You may contact him by e-mail at kosanke.christoph@bcg.com.

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