Anytime, anyplace.

Work has changed. People used to go to the office, sit at a desk and do all their work there. Not anymore: digitization has added a new dimension to how we work. "Every day" has become "anytime". "Here" has become "anyplace". We already view mobilization as the complete digitization of work. But when time and place converge in the real and virtual worlds, we need firm rules to manage this new freedom properly.
ASSIGNED DESKS DIED SURPRISINGLY QUICKLY. First, the laptop arrived – now you can work anywhere! Their fate was finally sealed when cell phones morphed into smartphones.

And now? Do you still make your own phone calls or do you let your jacket handle it? – Wait, what?

These innocent questions may still throw you off today, but you won’t even hear them tomorrow. It’s all a matter of looking ahead. As Claudia Nemat, Member of the Deutsche Telekom AG Board of Management, Europe and Technology, put it, “There’s no law requiring you to use smartphones for all your telecommunications. Don’t get me wrong: it’s a wonderful invention, just as the rotary phone was in its day. But one day, they will both end up in a museum for our grandkids to admire.”

One company that’s looking ahead is Levi Strauss, the jeans manufacturer. It is already developing fabrics that integrate touch interactivity into trousers and jackets. They can send commands to smartphones or other devices so that users can make calls or send text messages. That means, according to Nemat, “telecommunications will increasingly become a feature of our clothing”. The trend will even extend beyond clothing, driven by augmented reality, 3D printing and other technological innovations, and include virtual reality headsets, smart headphones, bracelets and rings.

Initiatives like Fashion Fusion, which Deutsche Telekom has incorporated into its long-term innovation strategy, are anything but playthings, as Jan Mantel will attest. “People and things – from machines to smart clothing – will form a relationship at home and work that will change the way organizations think, operate and act in every industry.” The Crisp Research analyst recommends “driving the use of mobile devices and wearables across the enterprise”.

And there are excellent reasons to do so.

Germany quietly crossed a big threshold recently. According to a study conducted by HTW Berlin, a research university, 54 percent of productive employees in Germany were mainly or exclusively mobile workers at the start of the year. This marked the first time that people who worked “solely or primarily at a particular stationary workstation” were in the minority.

FROM WORKSPACE TO WORKSPACE

This change would be impossible without digital workstations powered by a combination of artificial intelligence, software-defined products and increasingly sophisticated voice control on the one hand, and IT applications such as the cloud, big data and predictive analytics on the other. For Experton advisor Wolfgang Schwab, the terms “digital workplace”, “Workplace 4.0” or “future workplace” are misnomers. Instead, he talks about a “digital workspace where virtually all areas of our conventional desktop world and the modern mobile domain come together”. It sounds like a gradual process, but the infrastructural requirements would make many a CIO break out in a cold sweat. The truth about virtual desktop infrastructure and application streaming, management, security and mobility solutions is this: quite a few organizations believe they can handle the growing integration requirements themselves, without any outside help. They’re mistaken, unfortunately.

*THERE’S NO LAW REQUIRING YOU TO USE SMARTPHONES FOR ALL YOUR TELECOMMUNICATIONS. INSTEAD, OUR CLOTHES WILL INCREASINGLY TAKE OVER THIS FUNCTION.*

Claudia Nemat, Member of the Deutsche Telekom AG Board of Management, Europe and Technology
“Devising a DIY solution,” warns Experton in its first-ever Digital Workplace Vendor Benchmark 2016, “is probably economically inferior to managed services or wholesale outsourcing in the vast majority of cases.” The increasing demands of the digital transformation process and the simultaneous decrease in staffing levels will put even more pressure on business.

MEGATRENDS HIT THE JOB MARKET

But that’s not all. Futurists at the University of St. Gallen have identified no fewer than 25 emerging megatrends that will shape the next generation of work. Megatrends, we may recall, are developments that take up to 30 years to completely unfold, but that immediately start to affect every area of our lives and jobs and cannot be stopped by anyone or anything.

The researchers’ theses sound like a nightmare for managers at various departments—from production to sales to HR (see interview with Georg Pepping, p. 17):

**Thesis 1:** Tomorrow’s jobs have no clear organizational allocation.

**Thesis 2:** Machines learn to think, become intelligent and essentially omnipresent through networking.

**Thesis 3:** Permanent employees lose importance while globally available skills of specialized experts gain importance.

So who within the organization will be responsible for structuring, moderating and implementing everything? Who will organize the work amid constantly changing teams, managers, work sites and work hours? Who will integrate all the important IT infrastructure Library (ITIL) processes for physical, virtual, mobile and cloud-based workspaces? These are remarkable examples—and they cover only three of the 25 theses that the Swiss university has proposed together with Shareground, Deutsche Telekom’s innovation unit.

GERMAN INDUSTRY HALFWAY TO FINISH LINE

German organizations can take heart from the Digital Office Index (DOI) published by Bitkom, Germany’s leading IT industry association. The paper, presented at CeBIT 2016, concludes, “The stage has been set for a digitized working world.” The study describes where organizations have already digitized their processes and where they can still improve. The current DOI of Germany’s industry is 50, where 0 is “not digitized at all” and 100 stands for “completely digitized.” While that means Germany is only halfway to a digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital offi ce, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall. 42 percent of the 1,108 firms surveyed intend to keep their digital office, it also proves that companies have read the writing on the wall.

**88%** of organizations will continue to move or more in digitalizing their business processes. In terms of they did not in previous years.

**MEGATRENDS HIT THE JOB MARKET**

What will Work 4.0 change at organizations? Digitization will significantly change our work processes and the way we work. Changing, the only question is what will change, and how quickly. First, what we actually do at work will evolve as intelligent systems replace many human activities. Second, we will see the emergence of new forms of collaboration that are more digital, mobile, efficient and connected. Deutsche Telekom and the University of St. Gallen looked at all the advances brought about by Work 4.0 and then projected how they will affect the way we work in the future. Exponential change is a feature of digitization, so organizations have to address trends and harbinger of change as early as possible. Technical change happens at an ever-accelerating pace, but behavioral shifts take much more time. If organizations want to seize the opportunities presented by digital transformation, they have to devote at least as much attention to the employee side of digitization as they do to technology. That doesn’t mean, however, that they can neglect the big technological picture or its main technological themes: connectivity, platforms and data security.

What are the key capabilities of a digital organization? I would describe networked collaboration as one, if not the, key capability of a digital organization. “You and me,” our interview with Georg Pepping, p. 17),


23% of people worldwide say that virtual interactions can be “just as good” as being there in person.

SECURITY TAKES CENTER STAGE

The growing convergence of real and virtual mobility at the workplace, in employee productivity and in maintaining a work-life balance has put one aspect at center stage: security. “These environments have to be highly secure in order to make ‘anytime, anywhere, any device’ modes of work reliable and securely available,” said Klaus Holzhauser, the Managing Director of Pierre Audoin Consultants in Germany (see interview, p. 20). This is particularly true for health insurance carriers where employees use social collaboration platforms to improve their productivity and drive the internal transfer of knowledge. BARMER, for example, has ensured security by having T-Systems exclusively host and operate its Teamwire solution as a managed service at well-protected, ISO-certified data centers in Germany.

At the same time, collaboration and shared collaboration generally require employees to leave their secure corporate network, according to Klaus Holzhauser. This is a real concern, especially since the researchers at Shareground and the University of St. Gallen expect collaboration to play a growing role in work processes. The “geographical location of the service provider” will no longer play any role in the future. Instead, work will be as mobile as capital. The “demise of geographically located workplaces” will occur alongside a shift from “a presence to an event culture”. Managers must learn that they need to motivate rather than control workers. The art of management will be to establish and maintain personal ties despite using impersonal technical channels.

Especially for HR managers among others future work models pose big risks: “Flexible forms of work and cooperation lead to employees always having one foot in the labor market,” said Stefanie Kreusel, Chairwoman of Syntra, Deutsche Telekom’s management network. Systematic staff development will become much more difficult, especially in a market where employability depends less on formal qualifications and more on technical ability in robotics, augmented reality or similar fields. This skill will not be lost on competitors keen to attract new talent, either. After all, machines and self-learning processes can’t completely replace human labor and ingenuity.

Luckily, the researchers have some comfort to offer, too: non-linear thinking is and will remain a human domain. According to the experts at the University of St. Gallen, the automation of work is finite. Entrepreneurial ability, creativity and the control of machines are “hard-to-replace skills”. So does that mean we can open the creativity floodgates? Maybe not.

There’s no question that the ability to meaningfully combine and interpret data from billions of machines, robots and things is an essential, irreplaceable human skill. However, working with big data differs from traditional data analysis in one significant way: hypotheses will disappear as a necessary tool within the next three decades. Because pretty soon, there will be more than enough data on everything and everyone. Scientists refer to this admittedly theoretical sounding prospect as the “end of theory”.

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www.t-systems.com/solutions/dynamic-workplace
www.t-systems.com/solutions/mobile-enterprise

50 DOI

Once a mode of 1 0 to 1 5%, the current Digital Office Index (DOI) of Germany’s Industry 4.0 is 50.

45%

45% of Cloud deployment environments are mainly relevant for mobile workers, according to IT decision makers of German companies.