Future Work News

Singapore, 31.08.2030

Taylor Reloaded: The Organization as the Perfect Machine?

Today at the beginning of the 2030s, we can see the problems that arise from the development of more and more capable and independent algorithms. Here, digital leaders in business are challenged, and it is not clear how things will play out. Adding algorithms to all levels of work will clearly make work streams more efficient, but as machines start making decisions, the criteria for good and bad decisions, as well as loyalty (to the firm, to the stakeholders, to humanity), may lead to unexpected results.

CEOs back in the early years of the Internet economy may have thought their management positions were safe from the rise of the machines. Still, Alibaba founder Jack Ma had already stated in 2017 that he believed that companies could be run by better robotic chief executives than by human beings. Speaking at a China Entrepreneur Club event, Ma explained why he thinks machines will be able to do what humans cannot and how a lack of emotion will help robo-chief executives get things done.

“30 years later, the Time Magazine cover for the best CEO of the year very likely will be a robot. It remembers better than you, it counts faster than you, and it won’t be angry with competitors” (Morgan 2017), Ma said at the event, according to the New York Post. A few years later, the Chinese People’s Party announced that their future party leader might be an artificial intelligence: “We have learned our own lessons from the political disasters in the past. Look at the United States or what used to be the United Kingdom. Human narcissistic leaders have divided the population and countries. We don’t want to have the same happen with China.”
So far, there has been no CEO replaced by a robot, but according to the same researchers, this development might occur within the next ten years. In the meantime, even Western companies like Amazon and Google have started to experiment with what they call robot leadership by introducing more and more artificial intelligence in the monitoring and decision-making process. Jeff Bezos even stated lately that without it, Amazon would have lost its competitive advantage.

At the very opposite end in France, the unions have fought successfully for a new labor law that no leadership function in organizations may be allowed to be exercised or supported by a solely technical solution, including staffing, monitoring, strategy, and firing. This was the result of a three-year fight against Chinese and US companies trying to introduce more and more AI management solutions in many of their French subsidiaries. But this comes at a price: In comparison to China and the United States, France has lost more ground in its already mediocre position in the newest World Competitiveness Index. Many international IT companies try to avoid France as their European headquarters. “We just can not stay competitive with our labor costs in such an environment,” the spokesman of a US-based work matching platform stated.

One current example from the United States shows that this European skepticism when it comes to robot leadership may be well justified: In 2025, Biosensor, a Boston biotech start-up, started to introduce digital leadership solutions first in their staffing and then in new product development. Encouraged by first successes in attracting talent, they even expanded these solutions into personal development and corporate communication, trying to get the messages of their venture capitalists as quickly as possible toward their employees. A couple of years later, they experienced an unprecedented brain drain followed by a loss of trust on the side of their customers and, finally, no more funding on the side of their venture capitalists. So what happened here?

While the recruiting machinery was very successful in getting the best talent in the first place, it was just blindly imposing the financial goals of the venture capitalist through a personal reputation score on these experts which negatively affected their further career path, HR development options, and motivation. The result was a mismatch between the personal ambitions of the experts (doing something good for society) and the venture capitalists’ objectives (earning a lot of money from the products and services of the company). Even worse, by letting AI take over corporate communication, the public image of the company shifted dramatically from a very innovative company at the beginning to an artificial money-making machine in the end. All too often, knowledge workers of Biosensor experienced critical questions from their former colleagues and friends about for whom they are working for, how they can accept machines manipulating them, and if they have now become mere cyber soldiers. This lead to many of them leaving the company.

Robot leaders, while optimizing, always tend to become extremists, as one of the developers correctly stated. That was the same thing that some companies already experienced in early 2020 when using AI and machine learning in their recruitment process. By learning from best practices, one may end up recruiting a very homogeneous group, typically white male, which the AI thinks are the best you can get based
on their CVs. But it is always the programmer in the background which starts giving the machines this false impression, typically a white male, and in the end, the people recruited all tend to look alike.

Elon Musk already warned in 2018 that if not regulated or controlled soon, “we have to be careful not to end up in a new immortal AI dictatorship.” (Godlewski 2018) Very comparable to the human-based Enron and Wirecard scandals, robot leadership might get into a similar problem by sometimes going too far in purely optimizing economic outcomes and not reflecting laws or the human dimensions. This might happen because these issues are not usually covered in the education of digital natives.

So while we have to see the advantages of AI over human beings in leadership positions, we shouldn’t be naive about their potential and possibilities. As long as we don’t want to leave leadership to the programmers and creators of AI alone, we need to balance humanity with the technological opportunities of our time. Maybe the old management guru Peter Drucker might still be right today in saying that for successful management, you always need a two-handed approach: one systematic left hand, which can be in our modern times an AI management solution supporting a leader. But never leave him or her alone with that. It would be best if you always had a much more holistic and creative right hand, and that one has to still be a human leader to ensure that leadership will be not only efficient but also effective.

As a consequence, there is no neither-nor approach between humans and robots. Those companies and also national cultures who appreciate the strength of both and learn how best to integrate them into their political and economic leadership systems will get the most out of it. Neglecting one dimension, be it the human or AI, may reduce future leadership capabilities significantly and may end up in political or economic disaster.

1 Digital Transformation

“We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before.” (Klaus Schwab, World Economic Forum, 2016)

1.1 What It Is and What It Is Not

In business practice, the terms “digitization” and “digitalization” are often used synonymously. However, while digitization in its original sense only means the conversion of information into a digital format, digitalization involves technology-driven change processes in companies and organizations (Gersch et al. 2020). These changes are driven in particular by the factors “digital data,” “automation,” “networking,” and “digital customer access.” New, digital technologies (e.g., artificial
intelligence or blockchain) are changing (sometimes massively) traditional industry structures and therefore pose particular challenges for companies that want to remain competitive under these conditions (Riasanow et al. 2019; Vial 2019). Capital is losing its value as an economically scarce resource, and access to knowledge and the careful management of effective knowledge processes are becoming crucial success factors (Güttel et al. 2019). This places special challenges and demands on future digital leaders.

The technological change brought about by digitalization is not a new topic for leadership. It began decades ago: from the advent of the first computers in the 1950s and 1960s, computer-aided design and manufacturing in the 1970s, and the networking of corporate divisions through enterprise resource planning systems from the 1980s onward. However, due to the “Internetization” of companies and industries since the 1990s, the digital transformation is gaining momentum, changing markets, business models, and value chains (Gersch et al. 2020). From 2000 onward, the Internet was affecting not only sourcing and production but also management and marketing. With the rise of smartphones and social media, digital transformation was changing the ways of coordination, communication, and how we sell products and services. In the 2010s, the rise of smartphones and apps was opening up completely new markets and distribution channels. The market was no longer local but global, even for smaller companies. At the beginning of the 2020s, the Covid-19 pandemic hit the whole world, bringing digital transformation into our everyday workplace. Suddenly, the new working space became the Bin mir nicht sicher, ob das so im Englischen gesagt wird, and leadership was no longer a matter of face-to-face meetings but increasingly virtual ones. And here we are approaching the 2030s with artificial intelligence and blockchains taking over more and more power and decision-making responsibilities from human leaders. Many leaders fear not only losing their job but also that the Internet of things will take over the internet created by humans for humans and social media.

1.2 Internet of Things or Internet of Humans?

The Internet, as perhaps most technologies, was invented to serve humanity. People were intended to be able to communicate and exchange information on a global scale. Scholars (e.g., Forman et al. 2005) referred to a “global village” that is moving closer and closer together. Today, however, it is no longer only people but primarily machines that communicate with each other. The numbers speak for themselves. Experts (e.g., Dahlqvist et al. 2019) forecast that the number of devices connected to the Internet will reach 43 billion by 2023 (far more than the world population and far more than people who communicate via the Internet). Many machines already interact with each other, entirely independently, without any human interaction. Even in social media, it is no longer clear if communication or likes were generated by human beings or artificial algorithms, so-called social bots, or in the worst case misused to manipulate elections and to erode democratic structures.
This transformation is tremendously affecting digital leadership and the power of leaders. The philosopher David Skrbina (2015, p. 286) talks about the Internet as an autonomous system that was brought into being. In other words, both organizations and people will be integrated into a system dominated by machines. The organizations of the future will depend (more than ever) on the smooth functioning of the network and the infrastructure in which they are embedded. On the one hand, its smooth functioning requires the state to provide the appropriate infrastructure. Here, entrepreneurs and managers themselves can become active by choosing the appropriate location. On the other hand, the leaders themselves are expected to decide in which technical solution to invest. Therefore, they are required to have a good knowledge about the infrastructure and the interconnection of their individual machines. Without this kind of digital literacy, they are lost, and their power is eroded. This is very comparable to many portfolio managers in the financial industry who, at the beginning of the financial crisis of 2007, did not understand in what kind of investment vehicles of the real estate market they had been investing or which one they had been recommending toward their customers. Leaders may feel more and more alienated and at the mercy of algorithms. As in the case of autonomous driving, essential and sometimes even life-threatening decision might be taken by machines and by robot leaders, not by human leaders anymore.

1.3 From Digital Transformation to Robot Leadership?

Я твой слуга (“I am your servant”). Я твой работник (“I am your worker”). We are programmed just to do. Anything you want us to (From the song “The Robots” by the electronic music group Kraftwerk).

The song by the music group Kraftwerk was released in the 1970s and addressed the rapid progress in robotics, which, at that time, can indeed be considered revolutionary (see also the chapter on Smart HRM on other Kraftwerk songs). The song’s leitmotif bears a note of optimism: The robot loyally helps humans and takes heavy work off their hands. The robot does exactly what humans command. The allocation of roles and duties is well defined: Man is the robot’s master. The robot, however, remains in the position of a loyal servant or slave.

The notion of “servant” is also reflected in the word’s etymology. The term “robot” was first popularized by the Czech writer Karel Capek, who used the term in a theater play (Launius and McCurdy 2007). The play tells the story of a corporation that produces artificial humans (“Robots”), who would eventually revolt against their human masters. In Czech, the word means “serf labor” (in many other Slavic languages, it merely means “labor”). The Czech word, in turn, originates from the Old Church Slavonic word “rabota,” which means “serfdom” or “slavery” (Mohammad and Nishida 2018).

The development of robotics back in the 1970s was indeed revolutionary. Companies such as KUKA and ABB made astonishing progress in the area of industrial robotics (Smith 2016). It even seemed as if the loyal servant robot
would soon be able to relieve us of the heavy physical work completely. In 2030, more than 50 years after the release of Kraftwerk’s song, we may observe an astonishing development. Surprisingly, the “Servant-Master” relationship (as hinted at in the song) seems to be reversed. Now, the recipients of commands are humans. Robots are increasingly taking up management positions, which Daniel Weihs described as autosomes, independent thinking machines (Weihs 2018). In the second half of the 2010s, the Japanese company Hitachi made headlines by announcing that it would use a robot as a supervisor. The “robot leader” allocates tasks to employees and even alters work instructions based on feedback loops and employees’ performance (Ghosh 2017). We are already familiar with very basic forms of “robot leadership” in a very rudimentary form in logistics centers, where workers receive instructions via a system called “pick-by-voice” (Gleissner and Möller 2011). Today, however, we encounter robot “leaders” or “managers” outside of warehouses. The company “Uber,” where a computer system manages the drivers, is one prominent example (Gaskell 2018).

What are the effects on humans if robots are increasingly taking on leadership roles? Newspapers report about a person in Belgium who put too much trust in her broken navigation system. Instead of going to Brussels, she drove across Europe, all the way to Croatia. Only in Croatia, 810 miles from her actual destination, is the person said to have noticed her mistake (Matyszczyk 2013).

Now, the question arises: is robot leadership even desirable? And how can we, if at all, integrate human leaders into this kind of autonomous leadership and decision-making process again? What are the key challenges of digital leadership for a typical human being in a digitalized world?

2 Five Very Human Digital Leadership Challenges

1. Working at the Pace of Algorithms (Langhof et al. 2020)?

Andreas is a seemingly ordinary employee, working for a typical medium-sized company in southern Germany. Like all of his colleagues in sales, he is equipped with three devices: the tablet for the road, the PC in the office, and of course his mobile phone. In the thick of his e-mails, Andreas suddenly receives a reminder message from the company’s AI-based management system. He should familiarize himself with the new customer relationship management (CRM) system that was recently rolled out. A new CRM system? “Strange,” Andreas thinks to himself. But only last year the in-house AI department set up a new database. The new system could now measure exactly how many customer visits and calls he made per day. From this and the customer feedback received, the system calculates an algorithm rating score (ARS). The ARS was based on a 100-point scale. After the new algorithm was implemented, about 5% of employees got what was considered a top score of 90 or above. When the ARS was first introduced, the company did not explain how it was calculated but based its incentive and personal development
policies on it. Andreas and his colleagues found that practice very frustrating, but in the end, they had no choice but to accept it or leave the company.

The story above shows that the digitalization of the working world does not seem to be without consequences. Andreas suffers increasingly from headaches and lack of sleep: “Tiredness and mental exhaustion” that could most likely be burnout and is probably due to stress and multitasking. His family doctor advises him to “Take some time off, no mobile phone, no tablet.” Recent research seems to confirm the doctor’s assumption. The neuroscientist Manfred Spitzer (2012) even warns against “digital dementia” and a “disease of civilization, cybersickness” (Gabriel and Röhrs (2017), p. 156).

But what exactly are the reasons for Andreas’ increasing stress levels and exhaustion? These reasons and stressors will be described in the following challenges.

2. Fear of Missing Out

Like Andreas, his superior Katharina is also increasingly confronted with the challenges of digitalization. While she works on an offer for an important customer, her smartphone is humming. “Another voice message,” thinks Katharina. “These are definitely from our important client.” When Katharina later checks her e-mails and opens her browser to do so, the latest headlines of an online newspaper catch her eye. “Let’s have a quick read of the news,” she thinks to herself. A few seconds become 5 min. “Oh, yes. The offer” comes to her mind again.

Like many of her colleagues, Katharina is plagued by the fear of missing something. As a result, an acronym has become established in literature: “FOMO” (“fear of missing out”) (Appel et al. 2019). After Katharina’s department has signed the contract with the customers, she decides to take a time-out in a monastery, a place without a smartphone and laptop. Digital detoxification has become a buzz word and refers to the conscious decision not to use digital devices (Welledits et al. 2019). Indeed, temporary stays in monasteries but also long walks in the forest can help to reduce digital stress (Langhof et al. 2020).

The latest research findings suggest that people on technology-free trips interact more attentively and with greater concentration with their surroundings (Cai et al. 2020).

3. Feeling Helpless in the Face of Technology

We, as humans, love to plan and to have control over future events (Rosa 2020). Big data, ERP systems, and reporting tools allow us to quantify the world, plan and “predict” as never before. On the other hand, the complexity of technology also makes our everyday lives more unpredictable and uncontrollable. The German sociologist Hartmut Rosa (2020) illustrates this obscurity and uncontrollability using the example of the car, which suddenly locks itself or makes an emergency stop without any visible reason. These are minor technical errors that the driver used to be able to solve themselves. The increasing complexity of technology, however,
makes us dependent on experts (for whom technology is also becoming increasingly opaque). Both leaders and employees will have to get used to the fact that they will mostly be helpless when confronted with many technological challenges. Consequences may include an increasing alienation from work, stress, and feelings of powerlessness and depression.

4. In the “Search for Meaning”: In and Outside of Work

For the employees and leaders, it will become increasingly difficult to cope with this uncontrollability, alienation, and frustration. But what if the alienation increases to such an extent that human beings can no longer find any meaning in their work?

Alienation (caused by technology) probably explains practitioners’ and researchers’ increasing interest in programs and leadership styles that emphasize the search for meaning: e.g., “Servant Leadership” (e.g., Liden et al. 2014; Langhof and Güldenberg 2020), “Spiritual Leadership” (e.g., Gümüsay 2019), “Organisational Spirituality” (e.g., Rocha and Pinheiro 2020; Weinberg and Locander 2014), and “Meaningful Leadership” (Kriger and Seng 2005).

In the United States, the phenomenon of “Workplace Spirituality” has become increasingly important (Rocha and Pinheiro 2020). Advocates of “Workplace Spirituality” are concerned with the question of how an employee’s transcendent goals can be incorporated into their work.

In Europe, temporary stays in monasteries are a current trend among managers (Mohr 2007). These retreats are motivated by the idea that the Christian monastic tradition is fruitful for daily life in the outside world (Benediktinerabtei Niederaltaich 2020).

In addition, an increasing number of academics are taking up the topic. The Viennese psychologist Raphael Bonelli (2018a, b), a proponent of Viktor Frankl, considers “transcendence” as the ultimate manifestation of meaning (Bonelli 2017a, b, c).

How can we explain this trend? Why do leaders seek comfort behind Catholic monastery walls? A return to ancient traditions and rituals may well serve as an “antipole” to the fast-paced, tumultuous, and technologized world of today. The walls of some monasteries accommodate traditions that are well over 1000 years old. The contrast to today’s digital high-tech world could hardly be any greater.

5. The Dangers of Surveillance Capitalism

Only recently, Hanley and Hubbard (2020) published a report on the dangers of the pervasive worker surveillance at Amazon and the solutions that can be used to stop this surveillance and empower workers. The report explains in detail how worker surveillance threatens the mental and physical health of Amazon workers, allows Amazon to discourage workers from unionizing, increases the precariousness of workers who can be fired at any time for deviating from metrics they are not even aware of, and causes other dominant companies to adopt similar practices. Already 5 years earlier, an American parcel delivery company made it into the headlines
(Bruder 2015). The main reason for the attention was their new “telematics system,” which monitors and evaluates every single step of their truck drivers’ work process. Even minor tasks are monitored, including how they fasten their seat belts or how they open the doors.

In today’s technological world, corporations tend to monitor their employees increasingly. Some scholars even warn against “mass surveillance” (Stahl 2016) and “surveillance capitalism” (Andrew and Baker 2019).

Companies and leaders are generally exposed to the principal-agent problem (Eisenhardt 1989). In other words, the follower has a knowledge advantage, and thus, they could act to the disadvantage of the company.

On the one hand, the companies’ desire to address this problem and to make processes more transparent is understandable. On the other hand, surveillance technologies bear great dangers. Irrespective of any freedom rights, an excessive level of monitoring and quantification can also have the opposite effect to the one desired. Monitoring measures may lead to increased stress, which, in turn, harms the employee’s performance (Chory et al. 2015).

The digital leader of the future is, therefore, more than ever faced with the responsibility of finding the right balance between control and autonomy.

3 The Task of Leaders in Digital Transformation

Leaders play a crucial role in digital transformation. They are the role models for the other members of the organization. Therefore, the acceptance of the necessary change on the part of the leaders and openness to technical innovations are an essential prerequisite for a successful digital transformation of the whole organization. Digital transformation is not something you can do on a Friday afternoon after the real work is finished. It has to be an integral part of your daily schedule. In addition, digital leaders should concentrate on the following five priorities to master successfully digital transformation:

1. Competence: The Digital-Literate Leader

Even today, leaders largely rely on machines (IT systems, big data, algorithms, etc.) when making decisions. The leaders of the future will be all the more dependent on their “robot colleague.” The cooperation between humans and machines, however, can only be effective if decision-makers have a high level of trust in their “robot colleagues.”

The superior general of the Jesuits, Ignatius of Loyola, is said to have sometimes given his delegates blank sheets of paper bearing his signature (Câmara 2005). During negotiations, they could then issue contracts with his authority. In other words, he placed enormous trust in his employees. On the other hand, however, he required his followers to report to him daily on what they were doing and how they were working. He could only place so much trust in his employees as he knew them well and knew exactly what they were doing (Kiechle 2019).
This means leaders should only hand over tasks to machines if they understand *how* those machines work (Davenport and Kirby 2016). Today, many decision-makers, however, perceive computers as a “black box” that mysteriously produces results. As a result, technological change requires an entirely new digital leadership expertise, which leaders did not have or require in the past. Future leaders must understand at least the basics of how the new digital solutions work, how they can be used, and, above all, where their limits lie. Digital leaders must become masters of these technological solutions and possibilities, not just wanting to be their servants in order to be effective. Only in this way can the search field of companies be kept broad and diverse, and clear decisions can be made on the relationship between exploitative and explorative development opportunities.

2. **Culture: Preventing Social Isolation**

The benefits of the new communication technologies (chat programs, messenger apps, video chat programs, etc.) look tremendous. Finally, long trips to conferences, nerve-wracking traffic jams when commuting to work, or on-site visits to customers are no longer an unpleasant necessity. Indeed, we can hope that the trend toward home-based workplaces will lead to fewer cars on the increasingly crowded roads.

However, there is also a downside to working from home (and the digital transformation in general). Digitalization is increasingly driving people into social isolation and loneliness. Even outside a person’s home office, this trend is noticeable to the attentive observer.

While in the 1990s people on the commuter train talked to each other, today, we only see people hypnotically staring at their smartphones. Smombie (smartphone zombie) is a popular word among young people. It can be assumed that people’s social isolation will increase in the future, even strengthened by the trend toward more and more single households, as can already be seen in many Asian megacities.

The psychologists Deci and Ryan (2008) emphasize how important it is for people to feel socially integrated. According to their theory of “Self-Determination,” a person’s motivation largely depends on three factors:

(a) The need for social inclusion
(b) The need for autonomy
(c) The need for competence

Both the need for “social inclusion” and the “need for autonomy” are being challenged by increasing digitalization and technologization. Workflows predefined by computer programs restrict the autonomy of many workers.

For digital leaders, the most critical challenge will be to counteract this alienation and social isolation. A corporate culture that promotes empathy, compassion, and interpersonal relationships will become even more important. Therefore, it can be concluded that digital transformation is much more of a cultural than a technological challenge. This includes the design of the working environment (co-working spaces), communication, and learning structures, as well as a collective and shared
style of leadership (see Chap. 9). In the future, digital leaders will be required, more than ever, to give people the freedom to flourish in their work (Langhof et al. 2020).

3. Purpose and Values: Meaningful Leadership

The Lutheran pastor Wilhelm Busch (known for his resistance during the Nazi period; cf. Stroud 2013, p. 170) writes in one of his books how a high government official bemoaned the purposelessness of his work: “Pastor, just between you and me, I do nothing but sign papers from morning till night. But I know that if all these papers should happen to burn one day, the world would carry on. It really bothers me to have to devote my time and energy to such a senseless job” (Busch 2007, p. 23).

The American anthropologist David Graeber (2018) recently made headlines due to his provocative book title Bullshit Jobs. Graeber advocates the shocking view that a large part of today’s jobs is essentially meaningless work. Yuval Noah Harari (2016) shares similar concerns, arguing that AI would create a class of “useless” people.

The new technological innovations can only be used effectively if a person has a stable value system, a stable “inner order,” and an appropriate priority setting. But how should such an “inner order” look like? Raphael Bonelli (2016) sees the key to “inner order” in Fritz Künkel’s distinction between egocentricity and objectivity. Künkel (1936) considers objectivity to be a dedication to suprapersonal goals: goals that transcend the individual’s needs. Egocentricity, on the other hand, includes a fear of life and a fear of one’s fellow human beings, as well as an exaggerated desire for security (Bonelli 2018a, b). Podolny et al. (2004) show how important it is for leaders to work out the meaning of their activities together with those they are leading. Frankl (1959) emphasizes that meaning is created neither by satisfying needs nor solely through self-realization but must be discovered by the individuals themselves. Meaning is always created through the fulfillment of values. That is why it is so important for digital leadership to ensure that individual and organizational values are in accord with each other during the selection of personnel or technology. To do this, however, one must first know one’s organizational values and deal with their content.

For Frankl, creating meaning means both working on the way a human being experiences and expects things and also wanting to contribute something to achieve success together. When employees find meaning in their work and thus a right to exist again, this also helps to reduce the subjective fear of losing their jobs. For digital leaders, it will become even more important to support their followers in their “search for meaning” (Frankl 1959) and to integrate this search into their work (Ewest et al. 2016; Frémeaux and Pavageau 2020; Kriger and Seng 2005; Lynn et al. 2020). From a motivational perspective, this means a person’s motivation for the work is all the more sustainable and more robust if it is linked to their search for meaning (Afsar et al. 2016).

4. Digital Ambidexterity: Augmenting Human Beings by Machines
The Japanese corporation *Nintendo* is a well-known computer game company that has already completed the transition from *analog* to *digital* several decades ago. *Nintendo* was originally founded as a manufacturer of card games in 1889 and is now a leading manufacturer of video games and consoles (Stanton 2019).

Although the company suffered several setbacks in the course of its history, it repeatedly managed to outperform the competition with innovations. In the 1990s, Nintendo was still the leading manufacturer of consoles and games (ahead of SEGA) (Stanton 2019).

In the early 2000s, however, *Sony* (*PlayStation*) and *Microsoft* (*Xbox*) threatened to knock Nintendo out of the race. SEGA, their long-standing competitor, had already withdrawn from the console business (Stanton 2019).

In 2006, Nintendo responded to the competition by launching the *Wii* (Inoue and Tsujimoto 2018). Nintendo’s *Wii* was fundamentally different from the competitors’ consoles, as it required the players to move their whole body. Previous consoles still relied on the use of simple controllers or joysticks.

For Charles O’Reilly III, the American management professor, the key to some organizations’ eternal youth lies in their capability of “organizational ambidexterity.” Organizational ambidexterity is commonly considered to be the ability of a company to continue its current operations while simultaneously adapting to changing conditions (O’Reilly and Tushman 2008).

This principle of organizational ambidexterity can be easily transferred to the challenges of digital transformation. Therefore, digital ambidexterity could be defined as the capability of an organization to continue its current operations while simultaneously augmenting (and not replacing) its activities by digital technology (Daugherty and Wilson 2018). Augmentation means starting with what humans do today and figuring out how that work could be improved rather than diminished by greater use of machines (Davenport and Kirby 2015).

5. Limiting Robot Leadership: Auftragstaktik 2.0

In the future, machines will increasingly make decisions that were previously made by humans. However, machines are fundamentally different from humans (at least based on the present state of knowledge). Machines neither possess free will nor possess empathy or compassion. Numerous experts criticize the fact that certain technologies are already in use, although many legal issues have not (yet) been addressed (Kingston 2016). But when is it appropriate to allow machines to make decisions? When would it be preferential for people to decide?

In the nineteenth century, the Prussian army developed an approach that proved successful, particularly during the Franco-German war (Shamir 2010). The approach, which is known as “Auftragstaktik” (Visser 2010, p. 342), leaves some leeway to the subordinates for the execution of the command in the context of the overall mission goal (Bloedorn and Muethel 2018; Shamir 2010). Helmuth von Moltke, a Prussian field marshal, argues that the soldier’s order should only contain instructions that the soldier cannot initiate out of their own plenitude of power (Bühlmann and Braun 2010, p. 56). According to von Moltke’s understanding of
military command, soldiers have freedom of action within the boundaries of the predefined mission.

Following the model of Auftragstaktik, we may imagine robot leadership within firmly defined boundaries. Robot leaders may be authorized to lead and make decisions freely within predefined (and pre-programmed) limits. If the machines reach these limits, digital leadership would automatically be transferred back to a human leader.

Robot and machine ethics is a fascinating and newly emerging discipline within philosophy with the task to define these limits, what an algorithm should and can decide and what it must or cannot (Lin et al. 2011; Moor 2006). Time will show how digital law will translate the insights of this new discipline into concrete guidelines for practical action.

**Key Insights for Digital Leadership in 2030**

- The digital transformation is not new at all, but it is gaining more and more momentum. Technological changes push leaders to lead more and more via these technologies and interacting with them. This requires a completely new mind and skill set, which leaders in the past didn’t have.
- The digital transformation is much more of a leadership and cultural challenge than a technical one. At present, many employees and managers seem to be increasingly frustrated and distressed by technological change. Not only do many employees, especially leaders, fear that they will lose their job but also that the Internet of things will take over the Internet originally created by humans for humans and social media. In short, it is not technology that serves man, but man that surrenders to technological progress. An increase in depression and burnouts is a direct consequence of this development. The challenge for digital leadership will be to reverse this development.
- Digital transformation is much less revolutionary than evolutionary. Digital ambidexterity shows that organizations are not always forced or well advised to disrupt their business model by technological progress in order to continue its current operations. Instead, they should evolutionary augment (and not replace) its activities with digital technology. Augmentation, in this sense, means starting with what humans do today and figuring out how that work could be improved rather than diminished by an increase in the use of digital technology.
- Digital leaders need to understand how these technologies and AI solutions work, how they can use them, and, most importantly, what the limits are or how to limit them proactively. Future leaders need to be masters of these technological solutions and possibilities, not their servants. In the end, it should never be the human being who has to serve the technology. It should always be the technology that has to serve the people (Langhof et al. 2020).
References

Afsar, B., Badir, Y., & Kiani, U. S. (2016). Linking spiritual leadership and employee pro-environmental behavior: The influence of workplace spirituality, intrinsic motivation, and environmental passion. *Journal of Environmental Psychology, 45*, 79–88.

Andrew, J., & Baker, M. (2019). The general data protection regulation in the age of surveillance capitalism. *Journal of Business Ethics*. https://doi.org/10.1007/s10551-019-04239-z.

Appel, M., Krisch, N., Stein, J.-P., & Weber, S. (2019). Smartphone zombies! Pedestrians’ distracted walking as a function of their fear of missing out. *Journal of Environmental Psychology, 63*, 130–133.

Benediktinerabtei Niederaltaich. (2020). Monastic Stay - Kloster auf Zeit. Retrieved July 27, 2020, from http://www.abtei-niederaltaich.de/accommodation/monastic-stays-kloster-auf-zeit/?L=3

Bloedorn, L. A., & Muetel, M. (2018). When German soldiers disobey for the sake of the troop: Examining pro-organizational misbehavior. *Academy of Management Proceedings, 2018*(1), 13247.

Bonelli, R. M. (2016). *Selber schuld!: Ein Wegweiser aus seelischen Sackgassen*. München: Droemer.

Bonelli, R. M. (2017a). *Der Himmel auf Erden. Psychologie des Glücks*. Speech presented at Himmel & Hölle, Heiligenkreuz im Wienerwald. Retrieved July 30, 2020, from http://www.rpp-media.org/index.php?m=153

Bonelli, R. M. (2017b). Religiosity and psychological resilience in psychiatric patients: An overview. *Journal of Psychology & Clinical Psychiatry, 8*(3), 00487.

Bonelli, R. M. (2017c). An evidence-based review on religiosity in psychiatry. *Journal of Neurology & Stroke, 7*(2), 00231.

Bonelli, R. M. (2018a). Männlicher Narzissmus Das Drama der Liebe, die um sich selbst kreist. München: Pantheon.

Bonelli, R. M. (2018b). Selbstranszendenz und Narzissmus. In *Psychotherapie und Spiritualität. Psychotherapie* (pp. 195–204). Berlin: Springer.

Bruder, J. (2015). These workers have a new demand: Stop watching us. *The Nation*. Retrieved August 9, 2020, from https://www.thenation.com/article/archive/these-workers-have-new-demand-stop-watching-us/

Busch, W. (2007). *Jesus our destiny* (9th ed.). Basel: Brunnen Publishing.

Bühlmann, C., & Braun, P. (2010). Auftragstaktik in Vergangenheit, Gegenwart und Zukunft. Revue de l’Armée suisse der Militärarmacht, Beilage zur ASMZ 6/10 und RMS 3/10, 2010 (1), 50–63.

Cai, W., McKenna, B., & Waizenegger, L. (2020). Turning it off: Emotions in digital-free travel. *Journal of Travel Research, 59*(5), 909–927.

Câmara, L. G. (2005). *Remembering Iñigo: Glimpses of the life of Saint Ignatius of Loyola; the memorials of Luis Gonçalves da Câmara* (A. Eaglestone & J. A. Munitiz, Trans.). Herefordshire: Gracewing.

Chory, R. M., Vela, L. E., & Avtgis, T. A. (2015). Organizational surveillance of computer-mediated workplace communication: Employee privacy concerns and responses. *Employee Responsibilities and Rights Journal, 28*(1), 23–43. https://doi.org/10.1007/s10672-015-9267-4.

Dahlqvist, F., Patel, M., Rajko, A., & Shulman, J. (2019). Growing opportunities in the internet of things. McKinsey & Company. Retrieved August 27, 2020, from https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/growing-opportunities-in-the-internet-of-things

Daugherty, P. R., & Wilson, H. J. (2018). *Human + machine: Reimagining work in the age of AI*. Boston, MA: Harvard Business Review Press.

Davenport, T. H., & Kirby, J. (2015). Beyond automation. Strategies for remaining gainfully employed in an era of very smart machines. *Harvard Business Review, 93*(6), 58–65.

Davenport, T. H., & Kirby, J. (2016). Just how smart are smart machines? *MIT Sloan Management Review, 57*(3), 21–25.
Langhof, J., & Güldenberg, S. (2020). Servant leadership: A systematic literature review—toward a model of antecedents, outcomes, causes, and effects. *German Journal of Human Resource Management, 34*, 37.

Langhof, J., Renzl, B., & Güldenberg, S. (2020). Arbeiten im Takt der Algorithmen? Mensch bleiben durch dienende Führung. *Zeitschrift OrganisationsEntwicklung, 3*, 12–16.

Launius, R. D., & McCurdy, H. E. (2007). *Robots in space: Technology, evolution, and interplanetary travel*. Baltimore: The Johns Hopkins University Press.

Liden, R. C., Wayne, S. J., Liao, C., & Meuser, J. D. (2014). Servant leadership and serving culture: Influence on individual and unit performance. *Academy of Management Journal, 57*(5), 1434–1452. https://doi.org/10.5465/amj.2013.0034.

Lin, P., Abney, K., & Bekey, G. A. (2011). *Robot ethics: The ethical and social implications of robotics*. Cambridge: MIT Press.

Lynn, M. L., Easter, S., Jessup, R., & Straughn, G. (2020). Harmonizing work: Meaning and meaning making in Christian hymnody. *Academy of Management Proceedings, 2020*(1), 12418. https://doi.org/10.5465/ambpp.2020.12418abstract.

Matyszczyk, C. (2013). GPS sends Belgian woman to Croatia, 810 miles out of her way. *Cnet*. Retrieved July 30, 2020, from https://www.cnet.com/news/gps-sends-belgian-woman-to-croatia-810-miles-out-of-her-way/.

Mohammad, Y., & Nishida, T. (2018). *Data mining for social robotics toward autonomously social robots*. Cham: Springer.

Mohr, J. (2007). *Looking for monks and nuns in the new millennium*. Spiegel International. Retrieved July 27, 2020, from https://www.spiegel.de/international/spiegel/monasteries-in-germany-looking-for-monks-and-nuns-in-the-new-millennium-a-460675.html.

Moor, J. (2006). The nature, importance, and difficulty of machine ethics. *IEEE Intelligent Systems, 21*(4), 18–21.

Morgan, R. (2017, April 24). Even CEOs will be replaced by robots, Jack Ma predicts. *New York Post*. Retrieved from https://nypost.com/2017/04/24/even-ceos-will-be-replaced-by-robots-jack-ma-predicts/.

O’Reilly, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator’s dilemma. *Research in Organizational Behavior, 28*, 185–206. https://doi.org/10.1016/j.riob.2008.06.002.

Podolny, J. M., Khurana, R., & Hill-Popper, M. (2004). Revisiting the meaning of leadership. *Research in Organizational Behavior, 26*, 1–36.

Riasanow, T., Setzke, D., Böhm, M., & Krčmar, H. (2019). Clarifying the notion of digital transformation: A transdisciplinary review of literature. *Journal of Competences Management and Strategy (JCSM), 10*, 5–32.

Rocha, R. G., & Pinheiro, P. G. (2020). Organizational spirituality: Concept and perspectives. *Journal of Business Ethics*. https://doi.org/10.1007/s10551-020-04463-y.

Rosa, H. (2020). *The uncontrollability of the world*. Cambridge, UK: Polity Press. (original edition in German: Rosa, H. (2018) *Unverfügbarkeit*, Residenz-Verlag).

Shamir, E. (2010). The long and winding road: The US Army managerial approach to command and the adoption of Mission command (Auftragstaktik). *Journal of Strategic Studies, 33*(5), 645–672.

Skrbina, D. (2015). *Metaphysics of technology*. New York: Taylor & Francis.

Smith, G. T. (2016). *Machine tool metrology: An industrial handbook*. Cham: Springer.

Spitzer, M. (2012). *Digitale Demenz Wie wir uns und unsere Kinder um den Verstand bringen*. Munich: Droemer Knaur.

Stahl, T. (2016). Indiscriminate mass surveillance and the public sphere. *Ethics and Information Technology, 18*(1), 33–39. https://doi.org/10.1007/s10676-016-9392-2.

Stanton, R. (2019). *A brief history of video games: From Atari to virtual reality*. London: Robinson.

Stroud, D. G. (2013). Wilhelm Busch: The way of true faith. In D. G. Stroud (Ed.), *Preaching in Hitler’s shadow: Sermons of resistance in the third Reich* (pp. 170–176). Grand Rapids: William B. Eerdmans Publishing Company.
Vial, G. (2019). Understanding digital transformation. *Journal of Strategic Information Systems, 28*(2), 118–144.

Visser, M. (2010). Configurations of human resource practices and battlefield performance: A comparison of two armies. *Human Resource Management Review, 20*(4), 340–349. https://doi.org/10.1016/j.hrmr.2010.04.002.

Weihs, D. (2018). Autosomes as managers—A commented case. In K. North, R. Maier, & O. Haas (Eds.), *Knowledge management in digital change. Progress in IS*. Cham: Springer. https://doi.org/10.1007/978-3-319-73546-7_13.

Weinberg, F. J., & Locander, W. B. (2014). Advancing workplace spiritual development: A dyadic mentoring approach. *The Leadership Quarterly, 25*(2), 391–408.

Welledits, V., Schmidkonz, C., & Kraft, P. (2019). *Digital Detox im Arbeitsleben Methoden und Empfehlungen für einen gesunden Einsatz von Technologien*. Wiesbaden: Springer Fachmedien Wiesbaden GmbH.

**Stefan Güldenberg** is a pioneer and leading expert on the future of work, digital strategies, sustainable leadership, and knowledge management. He is a university professor, platform founder, strategy consultant, executive coach, and knowledge entrepreneur. He studied Business Mathematics, Philosophy, and English at the University of Ulm and then received his doctorate and habilitation at the Vienna University of Economics and Business. Stefan has 25 years of experience in research, knowledge transfer, and practice. He conducts research on and supports the development of strategy and transformation processes. Stays abroad led him, among others, to Harvard University, the Massachusetts Institute of Technology (MIT), and the National University of Singapore. He is the current Vice President Practice of the European Academy of Management (EURAM) and President of the New Club of Paris, a think tank and agenda setter for the knowledge economy.

**Jan G. Langhof** is a PhD student at the University of Liechtenstein. His research interest focuses on leadership (especially servant leadership), which he examines and explores from various perspectives. His work is often interdisciplinary and draws on management, philosophy, history, and IT. Jan’s academic papers have been published in numerous renowned journals, including the *Journal of Management History* and *Tourism Management Perspectives*. Prior to his PhD program, Jan worked in the IT industry across different international locations.