



DIGITAL TRANSFORMATION OF BUSINESS MODELS-BEST PRACTICE, ENABLERS, AND ROADMAP

İş Modellerinin Dijital Dönüşümü - En İyi Uygulama, Kolaylaştırıcılar Ve Yol Haritası

Bekir TAVAS

Cyprus Health and Social Sciences University, Guzelyurt/CYRPUS

ORCID ID: <https://orcid.org/0000-0002-5773-6583>

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ABSTRACT

The development of digital technologies and their use enjoy a high level of public attention these days. Due to the media hype surrounding the terms digitization, digital transformation or Industry 4.0, critical voices are rising about the extent and validity of the disruption. What cannot be denied, however, is that our everyday life has fundamentally changed in terms of the way we communicate and organize ourselves, as well as how we behave as customers. This is how we find out about the planned visit to the restaurant on TripAdvisor. Then we settle the bill via Apple Pay, order a driverless UBER taxi (still in the test phase, but already approved) and drive to the accommodation rented on Airbnb, which is shared on Snapchat shortly before bed. This change in customer behavior, illustrated by the example, creates new companies with a company valuation beyond the billion mark, so-called unicorns, which are increasingly trying to dominate everyday life. Instagram, an online photo and video sharing service founded in 2010, was bought by Facebook for a billion dollars in 2012. At that time the company had 12 employees. In the same year Kodak, the leading manufacturer of photographic equipment, filed for bankruptcy. Current market developments and the lack of clarity as to what influence the digital transformation will have on markets and companies lead to uncertainty and an increased need for orientation knowledge.

Keywords: Digitalization of Business system, Business Model, Roadmap

ÖZET

Dijital teknolojilerin gelişimi ve kullanımı bugünlerde yüksek düzeyde kamuoyunun dikkatini çekiyor. Dijitalleşme, dijital dönüşüm veya Endüstri 4.0 terimlerini çevreleyen medyada oluşan bilgi kirliliği nedeniyle, kesintinin kapsamı ve geçerliliği hakkında eleştirel sesler yükselmektedir. Bununla birlikte, inkar edilemeyecek olan şey, günlük yaşamımızın iletişim kurma ve kendimizi organize etme şeklimiz ile müşteriler olarak nasıl davrandığımız açısından temelden değiştiğidir. TripAdvisor'da restorana planlanan ziyareti bu şekilde öğreniyoruz. Ardından faturayı Apple Pay ile ödüyoruz, sürücüsüz bir UBER taksi sipariş ediyoruz (hala test aşamasında ama zaten onaylanmış) ve yatmadan kısa bir süre önce Snapchat'ta paylaşılan Airbnb'de kiralanan konaklama yerine gidiyoruz. Örnekle gösterildiği gibi, müşteri davranışındaki bu değişiklik, günlük hayata giderek daha fazla hâkim olmaya çalışan tek boynuzlu atlar adı verilen, milyar markın ötesinde bir şirket değerine sahip yeni şirketler yaratıyor. 2010 yılında kurulan bir çevrimiçi fotoğraf ve video paylaşım hizmeti olan Instagram, 2012'de Facebook tarafından bir milyar dolara satın alındı. O sırada şirketin 12 çalışanı vardı. Aynı yıl önde gelen fotoğraf ekipmanı üreticisi Kodak iflas başvurusunda bulundu. Mevcut pazar gelişmeleri ve dijital dönüşümün pazarlar ve şirketler üzerindeki etkisinin net olmaması, belirsizliğe ve oryantasyon bilgisi ihtiyacının artmasına neden oluyor. Bu da dijitalleşmenin aslında ne denli önemli olduğunu vurgulamaktadır.

Anahtar Kelimeler: İş dünyasında dijitalleşme, İş modelleri, Dijitalleşme yol haritası

1. INTRODUCTION

The application and use of new information technologies in the business context is currently leading to a significant change, sometimes even displacement, of established business and value creation models under the heading of "digitization" - and at an enormous speed (Fitzgerald et al. 2014, Urbach and Ahlemann 2016). This change can be exemplified by the companies Uber, Facebook, Alibaba and Airbnb (McRae 2015). Uber, the world's largest taxi company, does not own any cars. Facebook, the world's most popular media company, does not create its own content. Alibaba, the world's most valuable retailer, does not have its own inventory. And Airbnb, the world's largest provider of accommodation, doesn't own any properties. All of these companies can be viewed as digital companies, as their business models are essentially based on the innovative use of modern information technologies. At the same time, all four companies are market leaders in their respective segments, in which they have ousted established market participants in a comparatively short time. Last but not least, these are comparatively young companies. None of the examples - with the exception of Alibaba - are older than 15 years. These examples show that digitization has a strong impact on the business models of companies. Some of the central characteristics of digitization are already clear at this point. We see that the importance of the end customer interface is experiencing a renaissance. Of course, the end customer has always been important because products and services are manufactured for them and they pay the companies for them. Nonetheless, each of the above companies owes its success to the fact that it won the battle for the end customer interface, at least for the time being,



against established market participants. The Uber app, for example, serves as the central interface to the end customer. Individuals or small taxi companies, with whom the end customer has no contact, work in the background. Current research results show that thinking from the end customer perspective is becoming even more important for companies - regardless of their position in the value chain (Nüesch et al. 2015). This example also shows that digitization is leading to changes in industry structures. On the one hand, digitization, as just illustrated, leads to the formation of a monopoly at the end customer interface. So-called winner-takes-it-all effects occur. On the other hand - using the example of Uber - there would not previously have been the small or very small taxi companies that are made possible by the low market entry barriers of digitization in this area. Another central observation is that digitization is leading to a merging of the digital and physical world.

Digitization and business models or companies that have emerged from digitization are not limited to the digital world. Rather, the examples mentioned above show that digital business models have a massive impact on individual actions and economies in the physical world. Examples of such a physical-digital fusion are cyber-physical systems and the Internet of Things, which are currently being discussed intensively in connection with digital production. Last but not least, we see that numerous opportunities and challenges of digitization are initially discussed in the business-to-consumer environment (B2C environment), i.e. in relation to end customers, and only then enter the business-to-business environment (B2B Environment). In addition, however, we are also observing that many companies that have geared their traditional business towards the B2B environment are increasingly considering expanding to the B2C environment. With this article we shed light on the effects of digitization on the business models of companies using the example of the Internet of Things. To do this, we first look at the general technological drivers and the business implications of digitization. We would like to particularly emphasize the high speed and the increasing degree of networking in the digital economy. We are also introducing cyber-physical human-machine systems as a possible target for digitization. In addition, we present central areas of activity in digital transformation. This is about topics that companies should concentrate on in order to benefit from the opportunities offered by digitization and not to fall victim to the disruptive forces associated with it.

In the main part, we concentrate on digital business models in the Internet of Things, which are made possible by novel interactions between companies, customers and smart things - so-called business-to-thing (B2T) interactions. The focus is on smart products and services, the properties of which can be described using B2T interaction patterns. We conclude with a brief conclusion.

1.1. The Trend Towards Digitization

As a basis for further considerations, we provide an overview of the trend towards digitization. To this end, we introduce the key technology drivers and their business implications, consider in particular the enormous speed and high degree of networking in the digital economy and describe cyber-physical human-machine systems as a possible target for digital transformation. The trend towards digitization is leading to massive changes in the business world. This change is particularly driven by the use of new technologies in companies. These innovative technologies have an impact on the way business operations are carried out. A major driver of the new technologies is the usage behavior of individuals. We all carry smart devices with us these days. For example, most people have their smartphone with them all the time and everywhere. Some may even sleep next to their smartphone, so we're more or less "always online". This is a big change compared to how we have understood and used IT in the past. Social media platforms such as Facebook, Twitter and Skype are a second important driver. They give us an enormous number of communication options and channels. In addition, cloud computing is an innovative technology that comes very close to the vision of computing power or storage space from the socket. The end user usually doesn't care where this service is provided. The main thing is that he gets it - and that as quickly and cheaply as possible. Another technology is advanced analytics, which is currently being discussed intensively under the heading of "Big Data". As a result, we are now in a position to process very large amounts of structured and unstructured data in a very short time and to gain decision-relevant information. Ultimately, the Internet of Things describes the networking of all objects via the Internet. The Internet of Things also enables a new type of communication - both between smart things and between smart things, customers and companies. Based on this, intelligent systems are also among the technology trends that are driving the change in our world. The use of sensors, robotics and self-driving cars is currently being discussed under this heading. Occasionally the technologies outlined above are also summarized in the acronym SMAC (Social, Mobile, Analytics, Cloud).

When looking at these different technologies and developments, it becomes apparent that information technology was important in the past, but today it can contribute much more directly to the creation of value for companies. As a result of this change, new business models and markets have developed. Markets that did not exist before, some of which were generated by new providers or which are crowding into companies from other industries. This leads, for example, to the phenomenon that Google and Apple are also becoming active in the automotive market and appear there as threatening competitors of established brands such as BMW or Mercedes. We see value-added innovations, for example under the keyword Industry 4.0, which enable mass customization, for example - that is, profitable production with batch size 1.

In addition, we are experiencing significant productivity improvements through IT, which we have admittedly known for several years, but which are currently again significant Experience thrust. In addition, the increased opportunities for companies to interact with their customers, between business partners and between customers are playing an increasingly central role. Last but not least, the new technologies, especially in the field of knowledge work, enable new possibilities as well as increased flexibility in work design, which is discussed under the term work of the future.

1.2 Speed And Degree Of Networking

In connection with digitization, the legitimate question is repeatedly asked what is really new about digitization. After all, IT-based innovations have been around for a long time that have been used successfully. In our opinion, two things should be emphasized at this point. Firstly, many IT-based innovations have so far not left the company boundary or were not recognizable as such by end customers, such as service-oriented architectures (SOA) or web services in the past. However, many of the technologies outlined above are initially accepted by end customers, so that companies are not ahead of the curve, but are forced to act and have to react in order to be able to keep up with end customers ("IT consumerization"). Secondly, today we are dealing with an unprecedented speed of networking and a correspondingly high degree of networking. Studies show how long it took for certain technologies to reach 50 million users. The radio, for example, takes 38 years, for television it was 13 years. The Internet took only 3 years, Facebook 1 year, Twitter 9 months and Instagram only 6 months. It is true that these figures can be critically examined and cannot be easily compared with one another, but they underline the fact that one can speak of a completely different order of magnitude today than it was a few years ago. In addition, some studies examine not only the rate of networking, but also the degree of networking (Macaulay et al. 2015). According to this, there were already just over 9 billion end devices connected to the Internet in 2012. In 2020 there should be more than 50 billion devices. This not only includes smartphones, laptops and classic PCs, but also smart networked things in the Internet of Things. In total, both the rate of crosslinking and the degree of crosslinking increase exponentially. Together with a considerable economic potential, which is said to be the case with the Internet of Things, for example, digitization with nieces is just a technological idea, but a revolutionary, economically and socially relevant change. Gartner predicts an economic potential of USD 8 trillion for the Internet of

1.3 Cyber-Physical Human-Machine Systems

It is by no means the case that we are at the beginning or at the end of an expansion stage with regard to digitization. Rather, we are in the middle of a transformation. Accordingly, the question arises as to where the digital economy will develop. In our opinion, the digital economy will develop into a collectively intelligent cyber-physical human-machine system (Gimpel and Röglinger 2015). In the area of digital production, cyber-physical systems have been discussed for a long time (Khaitan and McCalley 2015). The point here is to merge production technology (Operations Technology) and IT much more closely and to allow them to communicate with one another. This closes the gap between physical and digital in the area of production. However, development will not stop there. There will be more and more cyber-human systems, i.e. human-machine systems, with the help of which IT and people will merge more closely (Gimpel 2015). Both developments together lead to collectively intelligent cyber-physical human-machine systems in which there are an unlimited number of objects that interact with one another in a decentralized and self-organized manner. These objects are people, machines, products (things), services, data and algorithms - in other words, material and immaterial objects as well as objects with a technical or social core. The result is a very dynamic environment that can be characterized by four features: volatility, uncertainty, complexity and ambiguity. One speaks of a VUCA world (Volatility, Uncertainty, Complexity, Ambiguity) (Bennett and Lemoine 2014). Volatility means that tomorrow nothing will be the same as it is today. The world is constantly changing and at a very high speed. Uncertainty means that developments can no longer be

forecast. Predictions are becoming more and more difficult due to the numerous interactions between people, machines, products (things), services, data and algorithms. Complexity stands for the multitude of objects and interactions as well as the fact that objects and interactions can spontaneously be added and removed at any time. Finally, ambiguity means that, due to the first three characteristics, cause and effect can no longer be clearly distinguished because the digital and physical world merge - and because the degree of networking and the speed of networking are increasing exponentially.

1.4 Roadmap For Digital Transformation

There is a roadmap for the digital transformation of business models that has proven itself in practice at various companies. Adapting the roadmap to company-specific requirements is recommended. The roadmap is based on existing approaches to digital transformation and innovation of business models. Buzzwords such as digitization, Industry 4.0, collaboration tools, cloud computing, big data and numerous others can currently be found frequently in the media and concern companies of different industries and sizes equally. There is talk of a curse and a blessing at the same time, because the (new) technologies endanger existing business models such as from the automotive industry, mechanical engineering, trade and craft. On the other hand, the new technologies open up new opportunities, as e.g. Processes can be carried out more quickly and thus costs can be saved. With this series of whitepapers, we address medium-sized companies in particular and show specific ways in which the opportunities new technologies can be used. The whitepaper series consists of three parts that build on each other.

In the first part of the series of whitepapers, we presented the most important technological trends and drivers of digitization. In the second part we discussed their possible effects on companies and different areas of their business model. In this third part, we use a roadmap to show a procedure developed from practice and science for the implementation of the digital transformation of business models in five steps, how you can leverage the potential of digitization. We wish all readers interesting suggestions and good luck with the digital transformation of their business models.

Phase 1: Digital Reality

In this phase the existing business model of a company is outlined, the value chain with the associated actors is analyzed and the customer requirements are determined. Thus, there is an understanding of digital reality in different areas.

Phase 2: Digital Ambition

The goals for digital transformation are set on the basis of digital reality. These goals relate to time, finances, space and quality. Then the goals and business model dimensions are prioritized.

Phase 3: Digital Potential

During this phase, best practices and enablers for digital transformation are identified, which serve as the starting point for the design of the future digital business model. For this, different options are derived for each business model element and logically combined with one another.

Phase 4: Digital Fit

Options are then assessed. The fit with the existing business model, the fulfillment of customer requirements and the achievement of goals play a role here. The options can thus be prioritized.

Phase 5: Digital Implementation

Finally, the digital business model is finalized - i.e. the combination of options that should be pursued - and implemented. This process also includes shaping the digital customer experience and the digital value-added network with the integration of the partners. Furthermore, resources and skills are taken into account that are necessary for digital implementation.

1.5 Digital Transformation Of Business Models

What do vehicle manufacturers like Rosenbauer, logistics companies like DB Schenker, compressor manufacturers like Bauer, elevator manufacturers like ThyssenKrupp and hygiene product manufacturers like Hagleitner have in common? These companies have understood how to put their customers at the center of their activities, to address customer needs and to use the potential of digitization in order to offer customers services in a more intelligent and faster way. These companies have managed to approach the

digital transformation of their business model strategically and in a structured manner and to actively shape it. The digital transformation opens up new possibilities for networking and cooperation between different actors. B. Exchange data and thus initiate processes and enable new business models. In this context, the digital transformation of business models plays a special role, since all relevant business model elements, instead of just one technology that can be digitally transformed, are taken into account. It is important here whether an existing business process is digitized or a new business process is created. How the digital transformation can take place in five steps and through the use of simple instruments is the subject of this article.

In the context of the digital transformation of business models, technological and personal potentials that enable digitization play an important role. Products used to consist of mechanical and electrical components and are now complex systems that enable hardware, software and data storage to be linked - products are consequently more intelligent and networked than in the past. In addition to products, services, processes and value networks and the customer interface are also being digitized, which on the one hand requires, but also enables, new business models.

Within the digital transformation of business models, enablers or technologies are used (e.g. big data) that generate new applications or services (e.g. demand forecasts). These enablers require skills that enable the extraction and exchange of data as well as its analysis and use to calculate and evaluate options. The evaluated options serve to initiate new processes within the business model.

The digital transformation of business models takes place on the basis of a procedure with a sequence of tasks and decisions that are logically and temporally related to one another. It affects four target dimensions: time, finance, space and quality.

2. COLLECTION OF DIGITAL ENABLERS - EXEMPLARY REPRESENTATION

Enablers are used to enable applications or services that serve to digitally transform the business model. One example is additive manufacturing for bionic aircraft components. In July 2014, Airbus installed a bionically shaped bracket in an A350 test aircraft and has already flown with it. It is a component "printed" with titanium powder, which has the same requirements in terms of function and strength as a conventional component. The advantages are (Legner et al. 2017):

Less material and lower weight (30 percent lighter)

Reduction in fuel consumption

Increased flexibility, since shipyards can "print" spare parts directly on the spot according to original plans without large production facilities.

There are four categories for enablers and applications / services, which are explained below:

Digital data: The acquisition, processing and evaluation of digitized data enable better predictions and decisions to be made.

Automation: The combination of classic technologies with artificial intelligence enables the construction of autonomously working, self-organizing systems. This makes it possible to lower error rates, increase speed and reduce operating costs.

Digital customer access: The mobile Internet enables direct access to customers, who thereby receive a high level of transparency and new services.

Networking: The mobile or wired networking of the entire value chain via high-bandwidth telecommunications enables the synchronization of supply chains, which leads to a reduction in production times and innovation cycles.

The enablers are listed with their applications / services in a digital radar.

Recommended action: Use enablers and best practices to generate ideas for the digital transformation of your business model and for achieving goals. This enables you to use existing knowledge for your business model. The options for designing the digital business model are assessed. The fit with the existing business model, the fulfillment of customer requirements and the achievement of goals play a role here. The evaluated combinations can thus be prioritized.

Criteria for fit with the existing business model:

- ✓ How does the combination of the option fit in with the existing elements of the customer dimension?
- ✓ How does the combination of the option fit in with the existing elements of the benefit dimension?
- ✓ How does the combination of the option fit in with the existing elements of the value-added dimension?
- ✓ How does the combination of the option fit in with the existing elements of the fit with the existing partner dimension?
- ✓ How does the combination of the option fit in with the existing elements of the financial dimension?

Criteria for meeting customer requirements:

- ✓ How does the combination of the option contribute to the fulfillment of the functional benefit?
- ✓ How does the combination of the option contribute to the fulfillment of the economic benefit?
- ✓ How does the combination of the option contribute to the fulfillment of the process-related benefit?
- ✓ How does the combination of the option contribute to the fulfillment of the emotional benefit?
- ✓ How does the combination of the option contribute to meeting the social benefit?

Criteria for achieving goals:

- ✓ How does the combination of the option help achieve time goals?
- ✓ How does the combination of the option contribute to achieving financial goals?
- ✓ How does the combination of the option contribute to the achievement of spatial goals?
- ✓ How does the combination of the option contribute to the achievement of qualitative goals?

Using the criteria listed, the combinations are evaluated in a scoring table in order to prioritize.

Recommendation for action: Check how your ideas for the digital transformation of your business model fit your existing business model, meet customer requirements and achieve your goals.

As part of the digital implementation, the finalization and implementation of the digital business model, i.e. the combination of options that are to be pursued, take place. The digital implementation also includes the design of the digital customer experience and the digital value creation network with the integration of the partners. Furthermore, resources and skills are taken into account that are necessary for digital implementation.

2.1 Finalizing And Implementing The Business Model - Exemplary Representation

An example of how the product “engine” is embedded in the business model and the system of systems. Different stages of development are shown here, the idea of the stages of development comes from.

The product is an engine that is installed in an aircraft. The intelligent product is made available by collecting data using engine sensors, which enables target / actual consumption of fuel and optimization. If the engine is networked within the aircraft in order to e.g. B. To control landing flaps, it is an intelligent, networked product. The networking can also take place with the entire fleet of the airline or fleets of other airlines.

If further services are now added to the intelligent and networked product, then it is a product system. In the present example, it is the aircraft system that includes navigation service, fuel management and risk management.

The navigation service makes it possible to reduce the miles flown and thus the fuel consumption. The navigation service also helps improve the planning and implementation of performance-based navigation procedures. Experts from different domains have access to it and tailor-made customer solutions can be provided.

Fuel management involves the provision of knowledge in order to achieve sustainable fuel savings. Savings are measured and monitored. The fuel management contains analysis and reporting functions to provide insights for additional savings. Risk management ensures flight safety and fleet productivity with flight data analysis software. The evaluation and validation of several data sources, such as flight, weather and navigation data, take place via an automated integration. The functions can be adapted to all fleet types.

Precise analysis functions also include customizable navigation. On the one hand, it can be seen that the benefit generated for customers (e.g. cost savings) and thus customer loyalty increases at each stage of development. This also enables a higher differentiation from competitors. On the other hand, the complexity, the number of partners and thus the costs for the provider increase with each stage of development.

Recommended action: Finalize your business model and design the digital customer experience and the digital value network. Test your ideas and concepts and make adjustments if necessary.

The phases of the roadmap described above are summarized within a process model. Objectives, activities and results are described.

The process model pursues the goal of enabling the digital transformation of business models. In addition to using the entire process model, there is the option of adapting the process model by combining or skipping individual phases and activities.

The process model and the roadmap shown serve to determine customer requirements, use existing potential and digitally transform existing business models in a structured and targeted manner.

2.2 Effects of Digitalization

The effects of digitization are discussed intensively in the scientific literature as well as in practical literature for a wide variety of industries. The effects are made tangible through market and competition analyzes as well as a large number of experience reports and case studies on companies that pursue the goal of shaping changes in their industry through digital transformation initiatives or adapting them to them. The results of the survey among 380 German and US companies show that digitization is perceived as a great opportunity by the majority of the companies in the sample. Where there is light, however, there is also shadow, because digitization is also associated with major challenges. A very large proportion of German companies see the concrete implementation of digitization initiatives as a particular challenge. The proportion of companies that consider the risk of companies being crowded out or the entry of new competitors to the market is, however, much lower.

The opposite is true for the US companies in the sample. Compared to German companies, significantly fewer US companies consider the implementation of digitization initiatives to be a major challenge. US companies seem to see the far greater challenge in the risk of being squeezed out or in new competitors. Possible explanations could lie in the different regulations of the two countries, differences in the dynamics and size of the start-up scenes and the larger macroeconomic role that the service sector plays in the USA. The barriers to market entry in some industries are significantly increased by German legislation. One example is the Passenger Transport Act, which, among other things, requires a local knowledge test before a driver is allowed to transport people commercially. This means that the transport service provider Uber cannot implement its business model known from the USA in Germany⁸. In addition, Silicon Valley is one of the world's largest innovation centers in the USA. In Germany, startups find it more difficult to obtain capital to finance new business ideas and enable rapid growth (Roland Berger, 2016, p. 15).

Due to the high dynamism in the US start-up scene, established US companies are likely to be confronted with potential new competitors more quickly than established German companies. Last but not least, it can be assumed that the role that the service sector plays in both countries has an impact on the perceived threat situation. The service sector in the USA makes a significantly higher contribution to GDP than in Germany. According to the results of an expert survey, the greatest changes due to digitization are to be expected in this sector in particular (Grossman, 2016).

2.3 Value creation structure: Integrated vs. Networked

The value creation structure has been seen as a decisive factor in a company's competitiveness over the past 20 years (Melnyk 2009). This requires constant adaptation to the changing framework conditions of competition. The structure of added value is influenced by various areas of tension, such as efficiency versus flexibility, control versus focus, or individualization versus standardization. The change in the logic of competition through the establishment of service ecosystems favors the creation of value networks. Networking companies along the value chain is nothing new. As early as the turn of the millennium, the trend towards focusing on individual stages of the value chain resulted in a large number of cooperation and network models, which are based on new value creation structures based on the expectations and needs of certain customer segments. Integrated value creation models are characterized by a high degree of structuring and rigid connections between the individual processes. A service ecosystem, on the other hand, consists of

rather weak connections, which allows the value-added network to be adapted to the changing needs of customers quickly and with little effort (Lusch et al. 2010). The insurance industry is a market that counteracts this networking and is still characterized by a relatively high level of service integration.

Although insurers have examined the focus on individual value-added processes under the pressure on returns from the capital market, there has been a trend in recent years back to the traditionally fully integrated value creation model with a high level of service depth and a wide range of services as well as a strong product differentiation. Vertical integration does offer advantages, such as control over the value chain, the reduction of complexity or the possibility of improving efficiency. However, it could prove to be an obstacle in the course of the digital transformation, since the environmental conditions are currently changing at a high rate and the flexibility of integrated value chains is rather low. Among other things, because of the lack of agility, the established insurers are currently being challenged by InsurTechs. Business models such as FinanceFox or Knip offer customers easier access to the security ecosystem. The business models, which were very simply set up for the first time and which up to now can be compared with a broker, created a platform that enables customers to centrally store their insurance policies from other providers. When entering into a business relationship, a mandate relationship is created at the same time, which enables the providers to view their customers' contract data and to offer the customer a tailor-made solution. The advantage of this model is that no insurance license has to be obtained, so the barriers to market entry can be bypassed, so to speak. This enables rapid geographic cross-scaling. Once access to the customer has been secured for the first time, the service ecosystem can be expanded. As a result, established insurers would then only have the role of a supplier.

The digital transformation is currently opening up a multitude of new possibilities for designing one's own innovation process. For example, using an outside-in approach, knowledge from outside the organization can be used to develop your own innovations. An outside-in approach enables trends to be recognized and implemented at an early stage, whereby resources can be used by customers. Current examples of such an approach are summarized under open innovation (Chesbrough 2003). The lead user approach (Hippel 1986) and the "crowdsourcing" approach (Howe 2006) are used in many places. The trend towards the use of crowdsourcing solutions is made clear by the emergence of various platforms such as the or innocentive. The outdoor clothing company Mammüt found a substitute solution for zippers through crowdsourcing. A closure system similar to that of a freezer bag won the tender (Gassmann 2010). In contrast, with an inside-out approach, ideas for possible innovations are brought in by in-house employees. In the case of stage-gate processes, the innovation process is divided into stages (phases defined ex ante in the innovation process) and gates (event-based turning points linked to performance targets with go / no-go criteria). In a market landscape characterized by digitization, however, such models are often too time-consuming. Nowadays, approaches such as design thinking or lean startup are often used. The lean startup approach tries to design a business idea, a product or a service as quickly as possible at the beginning using the guiding principle "Build - Measure - Learn" and to test it on the market using a prototype (Minimum Viable Product). By means of feedback, necessary changes can then be implemented quickly and conclusions can be drawn for further measures. The company therefore does not intend to start the market with a flawless and optimally functioning product. Rather, the product should be tested directly on the market, so that the performance can then be adapted evolutionarily to the needs and wishes of customers.

3. CONCLUSION

A strategic goal of established service providers that has often been heard recently is corporate agility. The aim is to ensure that the company can react quickly to changes in the market. The corporate agility, however, partly contradicts the logic of corporations trimmed for efficiency. In addition, agility ultimately comes from every employee and cannot be forced. Rather, the organizational prerequisites must be created to ensure that employees remain agile in their thinking and action processes. Today's traditional management approaches were designed for bureaucratically organized and mechanistically functioning organizations of the industrial age. Organizations will, however, face completely different challenges in the future, such as achieving comparative market knowledge, increasing the speed of innovation and the aforementioned corporate agility. Until now, the main purpose of management was to make the value creation process even more efficient, with employees having to perform a predefined task, but in the future, management will have to deal with providing the most effective possible company environment for creative knowledge workers. The role of the manager is therefore redefined through support and empowerment, rather than through instruction and control. The digital transformation is not only changing customer needs on the supply side, it is also expanding the possibilities for collaboration and changing the needs of employees. While Generation X

tended to strive for monetary values, status and power, the incentive systems for the coming generation of employees and managers will have to change. The organizational design of a company in a digital world must enable its employees to realize themselves, not only in terms of their status, but above all in terms of the meaningfulness of their work. It must also be taken into account that millennials have had an information overload since childhood. They had to decide over and over again what to look at and what to ignore. While Generation X has been looking for information, millennials have learned to deal with excess. This leads to a different way of working, which the organizational design must do justice to.

REFERENCES

- Bennett N, Lemoine J (2014) What VUCA Really Means for You. *Harvard Business Review* 92 (1/2)
- Berger S, Denner M-S, Röglinger M (2018) The Nature of Digital Technologies: Development of a Multi-Layer Taxonomy. Paper presented at the 26th European Conference on Information Systems (ECIS 2018), Portsmouth, UK
- Chesbrough, H. (2003) *Open Innovation: The New Imperative for Creating and Profiting, from Technology*. Harvard Business School Press, Boston.
- Fitzgerald M, Kruschwitz N, Bonnet D, Welch M (2014) Embracing Digital Technology: A New Strategic Imperative. *MIT Sloan Management Review* 55 (2): 1-12
- Gimpel H, Hosseini S, Huber R, Probst L, Röglinger M, Faisst U (2018) Structuring Digital Transformation: A Framework of Action Fields and its Application at ZEISS. *Journal of Information Technology Theory and Application* 19 (1):Art. 3
- Howe, J. (2006). The Rise of Crowdsourcing. *Wired*, 14. <http://www.wired.com/wired/archive/14.06/crowds.html>
- Legner C, Eymann T, Hess T, Matt C, Böhm T, Drews P, Maedche A, Urbach N, Ahlemann F (2017) Digitalization: Opportunity and Challenge for the Business and Information Systems Engineering Community. *Business & Information Systems Engineering* 59 (4):301-308
- Lusch, R. F., Vargo, S. L., & Malter, A. (2006). Marketing as service-exchange: taking a leadership role in global marketing management. *Organizational Dynamics*, 35(3), 264–278. doi:10.1016/j.orgdyn.2006.05.008.
- Macaulay J, Buckalew L, Chung G (2015) Internet of Things in Logistics: A Collaborative Report by DHL and Cisco on Implications and Use Cases for the Logistics Industry. URL: http://www.dhl.com/content/dam/Local_Images/g0/New_aboutus/innovation/DHLTrendReport_Internet_of_things.pdf (visited 04/24/2018)
- Nüesch, Rebecca; Alt, Rainer; and Puschmann, Thomas (2015) "Hybrid Customer Interaction," *Business & Information Systems Engineering*: Vol. 57: Iss. 1, 73-78.
- Steven A. Melnyk, Rhonda R. Lummus, Robert J. Vokurka, Laird J. Burns & Joe Sandor (2009) Mapping the future of supply chain management: a Delphi study, *International Journal of Production Research*, 47:16, 4629-4653, DOI: 10.1080/00207540802014700
- Urbach N, Ahlemann F (2018) *IT Management in the Digital Age – A Roadmap for the IT Organization of the Future*. Springer, Heidelberg
- Urbach N, Drews P, Ross J (2017) Digital Business Transformation and the Changing Role of the IT Function. *MIS Quarterly Executive* 16 (2):ii-iv
- Von Hippel, E. (2005). *Democratizing innovation*. Cambridge: MIT.