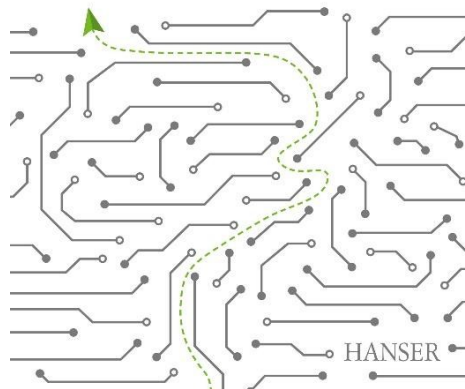# HANSER

DOMINIK RÜCHARDT

Strategie-Guide
Digitale Transformation
Anleitung und Methoden
für den erfolgreichen Wandel

HANSER

Reading sample

at

Strategy Guide Digital Transformation

by Dominik Rüchardt

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Content

A practical book for the strategy

Digital technologies such as the Internet of Things, artificial intelligence, lifecycle management, augmented reality, blockchain, 3D printing, platforms, cloud computing, and edge computing are bringing about changes that are both an opportunity and a threat, because they are changing not only companies, but also the boundary conditions, the markets, and the competition.

Digital transformation is a process of change, driven by new opportunities and challenged by the realization that it is necessary to evolve and work differently. More sustainable, more flexible, more transparent, with more responsibility for the world and future generations. And fueled by competition, locally and globally. The new possibilities are changing the rules of the game, and there is still great uncertainty about what is happening where and why.

This book supports you and your company in developing your own strategy for digital transformation. It is the result of 30 years' experience of digital transformation in industry, from different perspectives: ten years of the innovative drive of start-up companies, ten years of accompanying and leading major change initiatives in industry, and ten years of accompanying transformation with different in-dustry sectors and markets, together with industry representatives, associations and innovation design structures.

And it was born out of the experience that people still dream more than they understand when it comes to digital innovation and transformation. Opportunities are misunderstood, risks are not recognized, and people do not understand each other. The inertia and tenacity of software is often dangerously underestimated in the mistaken assumption that it can be changed at any time. All of this inhibits and paralyzes the process of digital transformation.

Digital transformation is a complex, interconnected process in the day-to-day operations of industry that no one among the group of stakeholders can manage alone. That is why it needs order. A common language, common decisions, common structures in industries and regions. The

But change has long been underway, and no one knows exactly what will happen next. This is also the spirit of this book. Planning and managing transformation in the face of climate change, in the face of global crises, in the face of the Covid experience and its impact on social life, work and the economy. Understanding one's environment well and focusing on what really makes a difference from one's own strength in interaction with the environment is one of the greatest challenges for companies.

How can the digital transformation be successfully shaped in the company, taking into account your own current position, your own strengths, the environment and the associated changes? What should you be aware of and take into account? What strategy can be developed for your own company and how can it be implemented in concrete terms? These topics are answered in the book as practically as possible. It is a book from practice for practice! The practical transfer is facilitated by many real, but anonymized examples.

I now wish you many new insights while reading this book as well as much success in developing your own "map" and mastering the digital challenges!

Munich, Spring 2023   *Dominik Rüchardt*

1 Guide through the Digital Transformation

The adage "knowledge changes the world" also applies to digital transformation, even in two senses. Knowledge about the current state of markets, customers, machines, processes and people is changing industry. It opens up new possibilities and process models in planning, in control, in monitoring, in fault prediction, in service, in collaboration, in business models with innovative products, processes, offers and ways of working.

It is not only the knowledge that is newly available through the digital world, but also the knowledge about this change. Knowing how to deal with it, how others deal with it, and where the important questions and the important answers lie for your own company is the challenge for companies in their decisions on digital investments.

Companies and people in the industry and in their environment, be they ministries, politicians, consultants or investors, have to find answers to complex questions:

- **Digital companies** need to figure out how to develop their business in the face of industry and competitive change, and how to keep positio ning it.

- **Industrial companies** are asking themselves how they should position themselves successfully in a digitized industry. Should they become digital providers? If so, to what extent and how? Boards of directors in industry, which previously thought in terms of machines and production, need to understand digital strategies.

- **Service providers** must find out what the customer needs and services of the future are in a service-oriented industry and develop accordingly.

- In a fast-changing business world, **consultants** want to be aware of trends and what advice they should give their clients to secure their success, and thus their own, in the long term.

- **Politicians are** looking for orientation in a world that cries out for subsidies and seeks and prevents regulation at the same time. Politicians must find their role when it comes to shaping fundamental changes in the economy and society.

- **Association representatives** see their members facing new challenges and are asked to play a formative role in answering the questions that affect their industries.

- **Research institutions** are facing new issues, because it is less about new technologies and more about how technology is used to benefit society.

- **Media representatives** need an understanding of what is meaningful and possible in a world between visions and reality.

- **Investors** need to know what questions to ask in order to evaluate performance evaluations of companies and their investments.

This book gives direct answers to some questions, and for the others it points the way to the answers. For this purpose, it is divided into three parts:

- **Part 1** describes the situation in the industry regarding digital transformation from a digital perspective.

- **Part 2** provides a methodology for shaping digital transformation from a business perspective.

- **Part 3** describes the application of this methodology and various application scenarios.

At the end of the book, I describe a selection of existing industry concepts that all participants in the digital transformation should be aware of, and I present a selection of basic technologies and use cases of the digital transformation that are already being applied today.

This practical book repeatedly builds on **examples** that often remain anonymous, as they are not always flattering. And it contains **exercises** so that readers can apply the methodology in their own context, practice it, develop their own strategy and initiate its implementation.

Readers will end up able to create a **"map" for their own transformation**, as well as their **own positioning of** their **own offering** in a transformed industry and a **plan to implement** the transformation both organizationally and in process.

This book teaches a method that is based on first recognizing one's environment, especially in times of change, then observing what is happening there, and then describing one's own position and strength and making a plan for how to implement it.

The method uses four simple questions "Where?", "Why?", "What?" and "How?" to describe:

- **Where:** the environment with its characteristics within which the trans formation is to take place.
- **Why:** of the events and phenomena that currently influence this environment.
- **What:** of one's own possibilities to change something in this environment.
- **How:** the way in which this change can be achieved.

The method and its application are developed and described in the course of the book. In the introductions of the first chapters, I apply it myself by way of example.

Part 1:
Starting position of the digital transformation

2

The "digital transformation" phenomenon

| Where - *the environment with its peculiarities, within which the transformation should take place.*	All companies involved in the digitization and digital transformation of industry, as manufacturers of digital or physical products or as service providers. Users of digital process chains and those involved with these companies. are, as politicians, association, consultants, media.
Why - *events and phenomena that currently influence this environment.*	New technologies for networking, knowledge generation, knowledge management and automation are driving competition, while at the same time global crises are calling previous industrial concepts into question and bringing about far-reaching changes. require.
What - *own possibilities to change something in this environment.*	Structures, processes, products, business models, value chains, ways of working, tools - everything is changing, in individual companies as well as across industries and value chains. away.
How - way in *which this change can be afforded.*	Information replaces resources, services replace products, responsibilities and value chains are reassembled - but it is an uncontrolled change in which all participants are expected to find their own way. find

The term digital transformation has crept in. It has slowly seeped into the language of industry without need or external compulsion, driven by a rapidly growing number of digital innovations and the idea of Industry 4.0. Very few people have thought about what it means. Some have equated it with progress, others with digitization, third with efficiency. This clueless approach is one of the reasons why industry and all those who play a role around it are still struggling both to grasp the course of digital transformation and to develop a plan for it. It is more of a phenomenon than a concept, and so while it is effective, it needs to be understood by stakeholders.

and those affected still have to be grasped and understood. What it does to companies, what it does to industries, and how a company that has not accidentally hit the jackpot as a "unicorn "[1] with a brilliant idea can deal with it in a meaningful and sustainable way. And anyone who wants to become a unicorn would probably be better off approaching it systematically than relying on luck.

■ 2.1 Replacing resources with information

The resources of a company are, in sum, what generates costs. This includes the company's own operations and its workforce, as well as purchased services and goods or risks that again result in the consumption of resources. A large part of this becomes dispensable through digital transformation because it is replaced by information. Information that communicates what material is needed and where it can best be procured. How it can best be recycled, how processes can be designed so that they consume as little energy as possible, how it can be ensured that machines last a long time and produce reliably. In addition, how transport costs and travel can be avoided and where services are better purchased from third parties because they are simply better at it (Fig. 2.1).
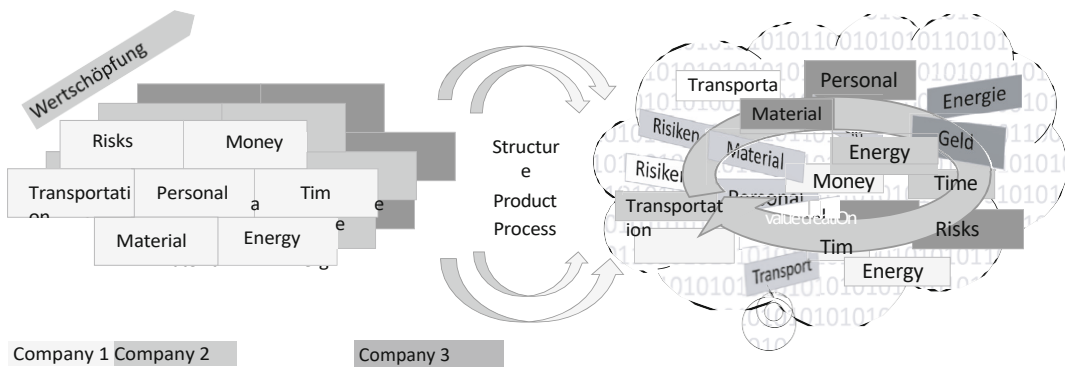
Figure 2.1 In the digital transformation, the rigid order in companies and value chains is replaced by flexible linkages and circular value creation

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[1] Unicorn: A company that, as a technology startup, has achieved more than a billion dollars in stock value in a short period of time.

Resource consumption is shrinking, which reduces costs and increases the sustainability of industrial work. The use of resources is reorganized, controlled by information and distributed across company boundaries in such a way that the best result is achieved for all.

Digital transformation is something that happens because it is possible. It is a phenomenon of change in which those involved use new possibilities and tools that did not exist before. This has always been the case with all the innovations that have optimized industry over decades and centuries. Steam engines suddenly made energy available everywhere, electricity made complex processes such as the assembly line possible, computers introduced systematic information processing and automation, and digital networking breaks down the boundaries between companies and processes, products and services.

But what distinguishes digital transformation from the changes, optimizations and innovations of the past?

There are two things at the core:

- **Difference 1: Digital transformation is the biggest transformation in industrial history.**

  An ongoing, highly productive and economically strong industry is being rebuilt. Not necessarily to become more efficient immediately, but to be competitive in the long term, to become more sustainable, to face the world's major crises such as the shocks in global supply chains caused by political upheavals and the Covid crisis. This can be done with smarter and more flexible tools, structures and processes, with new sustainable business models and with unprecedented trans parency. And it is a multitude of individual changes that add up and interlock.

- **Difference 2: The benefits of networking only develop their full effect when many companies tackle them together.**

  Only then can resource consumption be remixed in such a way as to create major effects. Networked value chains include many companies, and service-oriented business models such as remotely monitored medical devices require at least the support of suppliers and customers who agree on a new type of division of labor. Those who pay close attention in this mixing process and master the game will emerge as winners from the transformation.

The promises of digitization caused a great stir in the decade. It was the first hype phase of the Internet of Things. The networking of things, processes and people was seen as having a highly exaggerated effect.

and the figures called up by the prophets of innovation were in orders of magnitude beyond what was imaginable.

The idea of *"technology seeking meaning"* came to mind while the world was dreaming of the networked refrigerator or the squealing toothbrush, and all sorts of game-loving people were wiring their homes so they could watch their houseplants grow from their vacation.

Over time, the usefulness of networked industrial scenarios became apparent, for example in the monitoring of machine operation and in the support of maintenance and service. But the well-constructed scenarios also had a catch: they did not fit into everyday industrial life. The permanently humming apparatus of the companies was set up in a way that worked differently. There were neither suitable infrastructures, nor suitable processes, nor suitable organizations, nor suitable supply chains or customers to implement networked applications such as remote monitoring of machines at the customer's premises and to leverage the benefits in service, maintenance and product improvement.

The innovation was not able to realize its added value. Because the environment didn't fit. It was in the lab, but not viable outside the protected la bor, the "proof of concept," as it was called in the companies. And the innovation was not strong enough in itself to be disruptive, i.e., to overtake the existing industry ice-cold, as the big digitalizers had managed so impressively in business outside industry.

The result was the impression that the digital revolution was not progressing as quickly as had been hoped. It had stalled and the industry was too sluggish to take care of its own future. This impression arose from the expectation of unbridled progress. But the situation in the digital transformation of industry is different.

2.1.1 Innovation and Transformation

Innovation and transformation are often mentioned in the same sentence, but how do the terms differ? How do they depend on each other?

With innovation, something new and unimagined emerges and changes the world. Innova tion fills an occupied or unoccupied space and ensures that everything that was there before is confronted with the change in this space. Inno vation is like building a bridge over a river that was previously crossed by ferries. All of a sudden, much more traffic can flow much faster. But even more is happening. Around the landing points of the ferries, there were stores for the waiting people, offering services that could be obtained during the waiting time.

led. The construction of the bridge has deprived these businesses of their livelihood. The construction of the bridge has had knock-on effects, some planned, others unplanned. On one side of the river, a park is created, where some of the stores are relocated; on the other side, parking spaces are created, where some of the stores are relocated (Fig. 2.2).

Initial situation   Innovation   Transformation
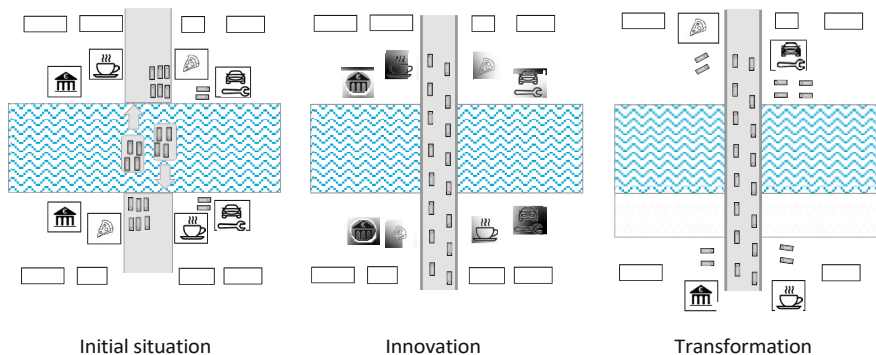
Figure 2.2 Innovation and transformation

This changed behavior of the environment, brought about by the innovation, is the transformation. Transformation is not itself an innovation, but the consequence of an innovation. It is how the existing world changes as a result of the innovation. This can have two different directions. One is a development in an empty space that only opens up because of the new possibilities, the cars go faster. Just as, for example, social networks were able to grow quickly in an unoccupied space. The other is the reconstruction of an existing space using the new possibilities of innova tion within the same, already occupied space. That's what's happening in the industry right now.

The difference

While digital innovations up to the decade essentially opened up new topics and fields, such as mobile communications or automated process chains, or replaced or changed individual professions, for example in accounting or design, the digital transformation is changing economic systems far beyond individual industry boundaries. A network of optimized processes and business relationships that has grown over decades is slowly but surely beginning to change. This creates different effects for the digital transformation than the digitization phases before it, when it was more about progress in delimited areas. And as with the transformation of complex ecosystems, the effects are usually unexpected and unpredictable.

This is different from anything we have experienced so far in connection with digitalization. It has been displaced and destroyed. Cell phones have swept came ras out of the field, e-mail the letter, Booking.com the travel agencies, and social media journalism. But all of this was characterized by an impetuous mood of optimism, by the intoxication of possibilities and the brutality of those who wanted to profit from the innovations.

Industry 4.0 is taking place in a different framework. It is not about displacement and victory, it is about restructuring. An industry with its characteristics, traditions, capabilities, customers, suppliers and networks is rebuilding itself. Because there is no other way.

You could also put it this way: **What was previously progress now becomes reconstruction and renewal.**

This is a new experience. For a long time, we lived under the impression of stability, progress and unlimited possibilities. It was all about winning in a world that sees winning as a sport and worships winners because they are heroes in a game without limits. Innovation meant progress, making new things, breaking boundaries. The world was built on growing.

Things are different now. We now realize that fewer people are entering the workforce than are leaving. We realize that we have to think about how to operate sustainably. We realize that globalization has reached its limits and that industry needs new, more robust models, and we realize that we cannot turn the wheel back, but only forward.

Digital transformation is called what it is for a reason. It is not digital progress, not digital awakening, but transformation. The transformation.

In an industrial context, it doesn't work for a digital company to simply sweep others off their feet or push them into a supplier's corner, as Uber has done with drivers, Airbnb with hotels, and Lieferando with restaurants. Industrial supply chains are too complex for an app to overrun them.

The flower in the garden - or the **formula for digital transformation:**

Transformation = Innovation + Context

An innovation in itself is value-free, something is new, but that alone has little meaning. A new flower stands in the garden. It may stand there and nothing happens. Only in the interaction with the context does the innovation become a change, a transformation. The flower shadows other flowers, which then die, the flower attracts the bees away from other flowers, the flower

overgrows the garden, the flower attracts people to the garden, who then trample the meadow . . . In these cases, the garden changes, and it is possible that people encourage this change by watering and caring for the flower, or it is possible that they think the flower is a weed and fight it. It is even possible that both happen, and some people fight the flower while others water and care for it.

2.1.2 Calculable Benefit

The wave of digitization that made Apple, Google and Facebook great was primarily about doing business with consumers. This competition took place in an environment of pure innovation. The iPhone, Facebook, the search engine. It was a big business of disruptive innovations, but one in which customers acted more out of passion than calculation, and new technologies were able to grow unrestrained in a space that was still virtually free of competition.

The digitization of industry, on the other hand, is taking place in a professionally managed space. Teams work in networks and according to perfectly organized models with elaborate preparation, a lot of risk and a lot of money are involved, supply chains and production must function, the apparatus must run. Instead of being able to try out unlimited possibilities, each possibility immediately creates a lot of difficulties.

Problem and solution - which comes first?

Problem (hunger, scarcity, war ...)	→	Solution (efficiency, innovation, technology ...)	→	Result: Preservation of an order	
		Solution (efficiency, innovation, technology ...)	→	Problem (visions, hype, race ...)	→ Result: Change of an order

Figure 2.3 The sequence of problem and solution

The order of problem and solution is always important (Figure 2.3). If a solution follows a problem, the preservation of order is the motive. The problem is a disturbance of the order, which gives the concrete reason to deal with it.
how to fix them.

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