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#ConceptualMindset
#ConceptualLeadership

A plea: ⅓ for conceptual work

Innovative Digital Transformation requires
Conceptual Mindset and Conceptual Leadership

Content

Acknowledgements | Foreword

Digital transformation in business and society is one of the megatrends of our time. It is associated with the hope of creating innovative and sustainable solutions which, based on digital technologies, deliver added value for customers. At the same time, it is also associated with the challenge of proactively changing and further developing organizations. This clearly shows that digital transformation is not exclusively a technical topic, but also challenges corporate culture, the development of agile organizational structures and the leadership of employees.

In Digital Design and Usability & User Experience working groups, we have been discussing for a long time how to focus more on the design aspect of digital transformation. One thing is obvious: a successful digital transformation takes into account the entire challenge to balance between wishes and needs of the users, economical constraints and technical capabilities.

Good conceptual work has always been the basis for a holistic view of problems, taking into account all framework conditions and restrictions. But what exactly does that mean? And how much space should conceptual work occupy in projects? This paper aims to provide answers to these questions.

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1 Germany – A country of Digital Transformation?

More than 40 years ago we set out into the digital world and 20 years ago we went online. The World Wide Web is often referred to as the starting point of the digital transformation of our society, i.e. our shift towards an economy and society based on digital technologies.

Why do we still not use the potential of these opportunities and really drive the digital transformation with good conceptual work?

Many of us have had our first experience with e-commerce by buying books on the internet. With the first iPhone in 2007, the digital world also increasingly moved into our pockets, jackets and handbags. Since that time, we have seen an explosion of technical possibilities around digitalization. Social networks, virtual worlds and even digital currencies emerged and became part of our everyday lives.

Most recently, the Corona pandemic has forced us into a digital home office in many industries. This has shown that in addition to the real office, a digital office is a viable option for many people.

However, if we put aside the exceptional situation of the crisis and the pleasure and fun of technological development, then unfortunately a rather disillusioned picture of the digital transformation is seen. In public authorities, for example, the e-file (eAkte) is considered a milestone, just like the e-prescription and the electronic patient file in the health sector. If we compare the developments in German authorities with those in other countries and other industries, then these developments are welcome, but by no means a digital transformation. The most important point of criticism is the transfer of existing analogue (paper) solutions into the digital world. The full potential of digital technologies is not exploited with such an approach, as paper as a model sets unnecessary limits in thinking. Instead of thinking about electronic prescriptions and files, thinking models such as the digital twin provide much more far-reaching possibilities for digital solutions and innovative ideas.

Of course, these and many other examples are steps in development and there are many good reasons why development is the way it is. Nor are the individual examples intended to be criticized per se. Rather, they represent an understanding of the digital transformation that worries us. It is precisely this understanding that we want to address:

Provocation: Simply transferring analogue paper solutions into the digital world is by far not digital transformation.

Digital transformation as »electrification« of the existing is a false understanding of innovation!

The starting point for many digitization projects are existing processes and ways of working, i. e. essentially existing (e. g. paper files and their processes) approaches and systems are transferred one-to-one into the digital space and thus are just electrified. With this approach, the innovative power of a project is already limited to the potential of the model, right from the beginning. If forms are the leading metaphor, then forms are also transferred into the digital world. The result of such an approach will then inevitably be a solution such as the eFile, because the file as an instrument is set or is not questioned.

But true innovation in the digital transformation can only succeed if we question precisely this approach. Social networks, for example, came into being because their founders questioned the structure of traditional media and the separation between authors and readers. Questioning the existing and thinking new and better against the backdrop of digital possibilities – that is the core of digital transformation. And digital technologies can give everyone this ability, e. g. to redesign digital communication and overcome previous boundaries.

Why is it so difficult for us to leave our entrenched perspectives to question our role models and basic ways of doing things?

2 Perfection culture inhibits innovative capacity

Germany, »the country of engineers, poets and thinkers«. This narrative about our own culture is deeply anchored in our consciousness and leads many people to expect that they work as error-free as possible and immediately have the most perfect solution at hand.

For a matured and established product or solution, high quality is necessary and important. The long-standing success of the German automotive industry can serve as a good example of this. But especially in innovative environments and in the early phases of a project, striving for immediate perfection leads to exactly the opposite.

The demands of immediate faultlessness and immediate perfection inhibit exploratory progress and the articulation of new ideas. We prefer to stick to supposedly proven models instead of questioning them and, if necessary, rethinking them. Our culture seems to have led us in large parts to no longer dare to express new ideas. Even voicing a supposedly »strange« or even »flawed« idea is often seen as negative behavior.

Our thesis is that our success in many sectors of the economy and the associated narrative of perfection have shaped us in such a way that we also want to be perfect immediately with a view to digitalisation. However, we forget the long history of many of today's »perfect« industries, which is also marked by numerous failures and learnings.

The exchange of design ideas, as a core principle of conceptual work, creates an intellectual space in which visionary ideas can be conceived and designed together without great risk. At this stage, the demand for one's own flawless or perfect expressions is counterproductive, as we then only make up our ideas with ourselves.

Designing is, in the best sense of it, teamwork in thought experiments. We can literally throw innovative ideas for solutions into the room, verbally and visually. This allows us to discuss how these ideas can relate to reality and our environment. In this phase there are no mistakes — there are only insights that help to find a proper solution.

The demand for immediate perfection and error free solutions inhibits exploratory progress and the expression of new ideas.

3 »Conceptual Mindset« and »Conceptual Leadership« are needed!

We are convinced that we need to relearn how to design digitalization in order to realize the full potential of the digital transformation for our economy and society. A cultural change in designing digital solutions is needed!

Conceptual work as a visible element of design must be newly established and lived. Doing and implementing this is what we call **Conceptual Mindset**.

This is especially important in the area of digital solutions. We often overestimate the supposedly quick adaptability of solutions in the digital space: »You can adapt it quickly, it's only software«. It must be understood that changes of fundamental nature to digital solutions are as costly and time consuming as changes to physical products and processes are.

»Good« conceptual work means interdisciplinary collaboration and a company-wide process that provides the guidelines for this. This is what we call **Conceptual Leadership**.

As the following plea will show, both – Conceptual Mindset and Conceptual Leadership – should be an integral part of the existing corporate culture. Conceptual Leadership, like leadership in general, needs to be lived by example and requires active participation. Therefore, success depends heavily on Conceptual Leadership being accepted, lived, promoted and demanded in a top-down approach through all management levels. Only such a permanent integration ensures that both Conceptual Mindset and Conceptual Leadership will have a sustainable effect.

We are sure that the initiation and steering of creative processes that are to result in successful products and services must be driven by strong Conceptual Leadership and, as a result, a distinctive Conceptual Mindset.

> Fundamental changes to digital solutions are usually just as costly as changes to physical products and processes.

4   Conceptual Leadership

Conceptual Leadership

Conceptual Leadership is much more than just a collection of instructions or guidelines. It is about creating the most ideal environment possible in which solutions for a given task can be successfully designed. This includes guard rails and clear framework conditions for creative processes. The guard rails and framework conditions must be flexible and at the same time controllable.

They also need to establish a transparent culture of error and communication among all contributors.

Conceptual Leadership – as responsibility for management and the organization – encourages and enables all participants to explore the maximum space of the task and to gather impressions and experiences for possible solutions. These are then discussed and evaluated collaboratively. In addition, a decision is made on their further integration into a concept.

The particular specification of principles for the conceptual work gives the project a structure. The energy and available resources of those involved are directed in a targeted way through clear structures without being unnecessarily restrictive. Depending on the project, this can include the following areas, for example

- Constraints for design & technology
- Process models
- Collaboration & Communication
- Information security
- Administration & organizational guidelines

> Conceptual Leadership encourages and enables all participants to explore the maximum space of the task and to gather impressions as well as experiences for possible solutions.

Typical tasks

A conceptual leader naturally has his own ideas about one or more possible solutions. It is important that this does not influence the team's perspective too much during the conceptual work. A conceptual leader is much more responsible for ensuring that »the direction is right« and that the team is basically on the right path with the right means. This includes ensuring priorities. Prioritization helps to focus energy and promotes a positive dynamic in the team.

Conceptual Leadership ensures that the team develops the best possible common understanding of the task and the approach. An emerging concept must be based on the common understanding of all participants. Cultivating this principle and Conceptual Mindset in the team and living it by example are the core tasks of Conceptual Leadership.

The decisive factor for the conceptual work should be that the specifications, principles and priorities are taken into account in order to design an optimal solution. The cooperation is based on mutual trust, which is supported by transparency and information. This includes critical questioning and also »auditing« to ensure success. To this end, Conceptual Leadership promotes and demands a strong and respectful work and feedback culture.

Organizational interaction as a success factor

Conceptual work leads to the involvement of many participants from different areas and perspectives of the company. For successful and targeted interaction, this must be organized and orchestrated through Conceptual Leadership (in terms of tools, paths, cadence).

This interaction must support the achievement of goals in an efficient and fact-oriented manner and must not become a means to an end.

This means, in particular, that the participants always work towards a concrete goal within a defined framework and that the interaction leads to traceable results or further activities with clear responsibilities.

Risk management and decision making

Conceptual Leadership is the conscious handling of decisions and risks, which are identified and addressed through conceptual work. Conceptual leaders are responsible for ensuring that all necessary decisions are made. It is important that only those decisions that the team cannot or may not make on their own responsibility are made by the conceptual leader. Decisions that the team does not want to make should not be taken over by a conceptual leader, but the team should be encouraged to make them themselves.

When decisions have to be made, it is important to understand that they cannot always be based on hard facts or KPIs in the context of conceptual work. Instead, they must be based on the confidence that the team has sufficiently addressed the issue and that the best possible information (at the time) is available. If there is any doubt about this, it is the responsibility of Conceptual Leadership to state this clearly and to encourage the team to improve the information situation. Here, the guidelines, principles and especially the priorities are of decisive importance.

Conceptual Leadership is responsible for weighing up the risks in such a way that an entrepreneurially justifiable solution emerges which is optimal for the users. For this, it is necessary to know, overview and critically question the work and in particular the results available up to that point.

5   Conceptual Mindset

A question of attitude

Conceptual Mindset is an attitude and a way of behaving in order to design the best possible solution with given framework conditions (e. g. time, money or resources).

With Conceptual Mindset, one clarifies the framework conditions and acts in the awareness that the process of creating a solution is a highly collaborative cognitive process. The focus is on experiencing possibilities and limitations as well as gaining collaborative insights with the available resources.

The process of cognition includes questioning and understanding the problem space and exploring the corresponding solution space. The clear goal is the convergence of the cognitive process towards a good solution.

First and foremost, the Conceptual Mindset is about understanding how possible solutions can or will be designed. It is not about the concrete solution in detail.

In the Conceptual Mindset, designing a concept with its continuous adaptation is firmly anchored. A concept lives as long as the solution is being worked on. This means that for the duration of the implementation, it is continuously developed and adapted to the needs in order to make the current state of knowledge transparent to the solution.

A Conceptual Mindset means being aware that aspects, partial solutions or entire solutions will be identified as inappropriate and discarded. It is important to document the design as well as to record the reasons if parts or the design as a whole have been rejected.

The path is part of the solution, but the end of the path is not always the final solution, but often a step towards the goal.

The design process as an »Escape Room«

Compared to a clearly defined implementation process, the design process is characterized by various uncertainties. The Escape Room is a good analogy here to describe the work on designs.

Imagine that a group of people are in a completely dark building and have to leave it together. Leaving the building is the solution, the concept is the wayfinding and the search for the way is the design process. All participants take their flashlights and start to illuminate the nooks and crannies of the building. Then they report on their perceptions. Which places seem suitable for finding an exit? Where do there seem to be dead ends? Where is it safe to move around? Where do dangers lurk? Are the observations perceived in the same way when someone else looks at the same place? What changes if you use more light?

It is crucial for Conceptual Mindset to coordinate activities and resources and to transfer findings into a common understanding: The concept.

It must be decided together where it seems most promising to focus the energy in order to find an exit. The available resources (in this case flashlights, people searching, batteries and their remaining power) are limited.

This can result in one or more activities. When everyone is convinced that they have found an approach to a way out, implementation is started together. If the solution does not work, alternatives are sought again.

Community based, agnostic of the process model and continuous

Conceptual work, as an application of the Conceptual Mindset, is an ongoing and continuous activity that begins before implementation and accompanies the entire implementation. Conceptual work is independent of process models such as waterfall, agile, lean startup, etc.

Therefore, it should not be confused with existing process models which often define types of results of the conceptual work and their timing (e. g. specifications or user stories). However, they do not define the way in which the results are created. This path is the conceptual work and happens in parallel to all process models.

Conceptual Mindset is always necessary and useful at any point in time, because it helps to ensure that all those involved have a common understanding of the task to be solved and the solution they are aiming for.

Conceptual work as a basis for reasonable division of labor

Conceptual Mindset overcomes organizational and professional boundaries. To solve the tasks, all participants work together collaboratively.

Through successful conceptual work, all participants can map necessary requirements and related changes to their respective areas of responsibility and work on them independently. The concept ensures that the degree of autonomy to be lived is understood. All participants are aware that the flow of information and collaboration are essential for the solution of overarching tasks.

The »usual suspects« such as software development (development, testing), product management (product owner, project manager), operations (Ops, DevOps) and user experience (UX)/user interface (UI) design must be involved in the conceptual work. In addition, sales, pre-sales, business strategists and support as well as all other relevant roles and functions, and of course potential users, should be involved.

It is crucial to have no one excluded right from the beginning. However, the interaction must be organized and orchestrated through Conceptual Leadership (see section 4).

6   Conclusion

In summary: Conscientious conceptual work is an elementary prerequisite for successful development, e. g. of technology-based products, innovative services and digital solutions.

Good conceptual work reduces wrong decisions and avoids the emergence of bad solutions that the user does not accept. This ensures that the implementation is more targeted, more efficient and thus more economical and provides a useful reference for quality assurance. Such an approach more than compensates for the investment of one third of the energy in the conceptual work.

Good conceptual work identifies risks and core aspects, looks for different approaches, weighs them against each other and decides on a solution in a reflective way. Conceptual work is a collaborative process. It brings together people from different perspectives within the organization. It is not so much about documents, but about a common vision for implementation.

Conceptual Mindset manifests a jointly supported and content driven mission. It forms the basis for a common understanding of tasks and contributes to structured communication.

In the entrepreneurial sense, Conceptual Mindset not only contributes to the content of the work, but also results in risk minimisation and cost savings. In addition, Conceptual Mindset as an energy catalyst and motivator supports soft factors, e. g. an emotional connection to the task, which releases creative energies.

Conceptual Leadership and Conceptual Mindset are closely related. An organization that is committed to the Conceptual Mindset can only function if Conceptual Leadership is exemplified. Culture cannot be prescribed, but is an expression of the lived reality within organizations.

> Good conceptual work identifies risks and core aspects, looks for different solutions, weighs them up against each other and decides on a solution in a reflective way.

7   Call for Action – ⅓ for conceptual work

Therefore, in this paper, we advocate that 1/3 of the total available budget be invested in conceptual work. This investment, especially in the early phases of digitisation initiatives, has a high return on investment!

In order for the investment in conceptual work to be valuable, Conceptual Mindset based on Conceptual Leadership is required from all those involved, otherwise it is a waste of money.

At this point, it can only be recommended to start on the path to good conceptual work at the leadership level. If the leaders in their organization really commit to the Conceptual Mindset, support concepts and give space where it is needed, Conceptual Mindset can develop.

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Martin Beschnitt is the managing partner of the renowned, research-based UX design agency eresult GmbH. The media technologist has been designing and optimising digital interfaces on behalf of German SMEs and DAX-listed companies since 2007. In addition to his full-time work at eresult, he is a guest lecturer at various universities and is responsible for the board of the Usability & User Experience (UUX) working group at the digital association Bitkom. He is passionate about usability, user and customer experience. Although these professions have existed since the 1990s, the German digital economy still has considerable potential to establish human-centred design processes throughout the company. In his understanding, UX is primarily about business strategy and change management.

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Martin Fix is Technology Director at Star, a global partner for strategy, design and engineering in the field of innovative digital products and digitalisation. He has worked in software development and IT and technology management for 25 years, 15 of which in an agile environment. As CIO at NDT Global and CTO at TerraLoupe, he was responsible for numerous digital products and defined, built and led corresponding organizations. This included training and coaching people in the various process models (waterfall, agile mindset) and roles (e.g. project manager, product owner, scrum master and team leads) as well as responsibility for the associated processes and governance. He is a driver for innovative solutions, also with reference to R&D (e.g. robotics, machine learning). At Star, he currently contributes to the successful acquisition and implementation of digital solutions with a combination of technical expertise and leadership. His expertise includes automotive, pipeline inspection services, machine learning for image processing, traffic planning and traffic modeling.

First of all, I am a UX professional with more than 15 years of practical experience in human-centered design and a strong background in industrial applications. I am also a digitalisation strategist, guiding SMEs on their way to successful digital transformation. Lastly, I am a technology optimist and fascinated by the question of how the advancing technologization of people and the environment will change society and our individual interaction behavior in the future.

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Sabine Klein studied Intelligent Systems at the University of Bielefeld. She currently works at Diamant Software GmbH in Bielefeld. As a software developer, she was initially entrusted with the core of financial accounting and the daily challenges of a wide range of customers. Today, in her role as a release train engineer, she supports an agile development department in making its work effective and customer-oriented. The focus is increasingly on taking the company into the future and working with the agile teams to create exactly what customers need in this new, increasingly digital world. As a board member of the Bitkom working group Software Engineering & Software Architecture, her focus is on the people and the processes that make companies successful.

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Klaus Knebel is a team leader in the area of Business Process Automation at ISR Information Products AG. Since 1987, he has always worked on IT projects at the interface between the specialist department and core IT. His goal is to make IT usable for users in such a way that it fits naturally into the work processes and is a tool that can be used easily and effectively. Since 1999, he has been working on the topics of business process management, enterprise content management and related topics such as input and output management in many projects, seminars and numerous customer contacts as a business analyst, managing consultant and project manager both nationally and in other European countries.

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Frank Kruse studied computer science at the University of Paderborn. He has been working in the field of software development for 25 years, including 5 years in an agile environment. He currently works as a software architect at Diamant Software, the specialist for digitalised and automated accounting and controlling software in medium-sized organizations. There he is responsible for the architecture of the software products in the area of corporate management.

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Dr. Kim Lauenroth is an interim-professor for digital design at the University of Applied Sciences and Arts Dortmund. Until 2021, he was Chief Requirements Engineer at adesso SE. Kim is a volunteer at IREB e.V. for training and education in requirements engineering and digital design. He is chairman of the steering committee for software in Bitkom and is committed to establishing new job profiles for digitization. Kim studied computer science, business administration and psychology at the Technical University of Dortmund and received his PhD in the field of requirements engineering for product lines from the University of Duisburg-Essen.

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Ingo Waclawczyk works as Managing UX Professional at Capgemini at the interface between interfaces, companies and strategies. In his work, he has a special focus on people in their role as social beings. He is concerned with the questions of how communication works in the digital age and how digital technology can be made more human-friendly. In doing so, he always tries to understand people as individuals and as part of the whole. To this end, he also seeks inspiration in human and social sciences such as sociology, psychology and economics.

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Sascha Wolter is an expert in the planning and implementation of cross-device applications. As such, he is passionate about the user experience and explores improved multimodal forms of interaction between humans and machines - including conversation via text (chatbots) and voice (also known as Alexa). He has been working as a consultant, lecturer, speaker and author since 1995. In his spare time, he enjoys mountain sports from hiking to skiing and good Italian coffee. He is Chief Advisor for Conversational AI at DB Systel, TecCo Lead HMI at Deutsche Bahn and is a board member of BITKOM's Usability & User Experience working group. He has received several awards for his developer and community commitment as a Google Developer Expert for the Google Assistant (GDE). Previously, he was a Senior UX Consultant and Principal Technology Evangelist at the conversational AI platform company Cognigy, worked as a Senior Developer Evangelist at Deutsche Telekom (including Smart Home), as a Senior Technology Evangelist for Alexa at Amazon and as a freelancer.

Bitkom represents more than 2,000 companies of the digital economy. Through IT- and communication services alone, our members generate a domestic annual turnover of 190 billion Euros, including 50 billion Euros in exports. The members of Bitkom employ more than 2 million people in Germany. Among these members are 1,000 small and medium-sized businesses, over 500 startups and almost all global players. They offer a wide range of software technologies, IT-services, and telecommunications or internet services, produce hardware and consumer electronics, operate in the digital media sector or are in other ways affili ated with the digital economy. 80 percent of the members' headquarters are located in Germany with an additional 8 percent both in the EU and the USA, as well as 4 percent in other regions of the world. Bitkom promotes the digital transformation of the German economy, as well as of German society at large, enabling citizens to benefit from digitalisation. A strong European digital policy and a fully integrated digital single market are at the heart of Bitkom's concerns, as well as establishing Germany as a key driver of digital change in Europe and globally.

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