



## Digital Design Manifesto

A self-confident design profession is the key to successful and sustainable digitalization

Publisher:

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## 1 Foreword and Motivation

In building projects, we naturally think about architects — they are responsible for designing buildings and have received the appropriate training to do so. But who should we think about when designing digitalization projects? The answer is not so easy or clear here.

We want to change this by establishing a separate "Digital Designer" job profile and making it a profession.

There is no comparable profession today, and digitalization is too complex and far-reaching to manage without one. For digitalization, the digital designer should be what an architect is for construction. Just like a construction project should not be executed without an architect, there should be no digitalization project without a digital designer.

With this manifesto we motivate the need for digital design and show what digital design is and what it should achieve. Digital design is not intended to replace existing professions in digitalization but rather complete them. Through the manifesto, we want to create bridges to these professions in order to unleash the full potential of digitalization.

Feedback on our initiative is very important to us and we welcome it. Simply send an email to Frank Termer ([f.termer@bitkom.org](mailto:f.termer@bitkom.org)).

## 2 The Digital Design Manifesto

### **A self-confident design profession is the key to successful and sustainable digitalization.**

Digitalization has transformed information technology (IT) from a niche technology into the backbone of many industries and, like electricity, has become indispensable. The technical possibilities offered by digitalization, which are increasing enormously, will lead to far-reaching changes in industry and society which are difficult to foresee at present. These technical possibilities are growing day by day. However, the capacity to exploit these opportunities — that is, to design useful and sustainable digital solutions — are not growing at the same rate as the technical skills. This discrepancy and the shortage of relevant specialists is a major problem.

In Germany, the digital industry emerged from the technically defined IT world of the past. Technological excellence is necessary, but not sufficient on its own. We need a change in mindset here and we can take the Bauhaus as our role model. In the age of industrialization, the Bauhaus established arts and crafts as a connecting element and success factor and aimed to highlight the difference between the individual disciplines to allow even greater effect. Architecture in construction and industrial design have emancipated themselves as independent and self-confident design professions. In the same way, we need an independent and self-confident design profession for digitalization, with a clear job profile, defined responsibilities, and an academic culture. This design profession should be called "Digital Design".

Digital designers understand digitalization as material that can be shaped. They think through the possibilities and potential of technology in combination with the economic conditions and the current or future desires and needs of people. Digital designers design and optimize the objective, benefit, and means together, on both a large and small scale; they design and optimize the visible and the hidden, the tangible and the intangible, and they also design and optimize the design process. From this design perspective, they lead the creation process and take responsibility for the final result. This is the only way to obtain useful and sustainable results.

We are convinced that due to its dual focus on design and technology, digital design is not merely a unique profession — in our opinion, it is a key competence for ensuring the sustainability of Germany as a society and business location in the age of digitalization. Together with industry, politics, and higher education, we want to establish digital design as a design profession for digitalization.

Every profession needs ethical guidelines and an understanding of what is good. Good digital design looks at the person as a whole and anticipates the effects of the design results.

- It is useful and useable
- It is elegant and aesthetic
- It is evolutionary and exploratory

- It is sustainable and creates sustainability
- It respects data protection and data security
- It appreciates analog and digital means equally
- It uses digital means where this is necessary

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Technology leadership in the constantly changing digital world is always temporary; in contrast, digital design competence is sustainable. With an excellent digital design profession, Germany has the potential to move its reputation as a country of inventors, poets, and thinkers into the digital age.

Just like the Bauhaus triggered a revolution in architecture and design 100 years ago, we need a comparable revolution for digitalization today. This manifesto provides the trigger for this revolution.

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### 3 What Do We Want to Achieve?

**In industry, we need a design culture for digitalization that is equal to the technical culture.**

Realizing digitalization is a technical and design topic, just like the construction of a house. In recent years, the disciplines of the digital industry have differed strongly and have mutually separated themselves from one another. In contrast, digital design can be used by all disciplines as an approach for extending their own design competence.

What we want to achieve is that the design of digitalization is recognized as an important success factor in industry and that design is practiced on an equal footing with technical development. This will lead to the creation of economically successful business models for the digital future. To achieve this, businesses should strengthen and expand their existing skills in digital design and include digital designers in digitalization projects at an early stage.

**At national and regional level, we need a policy that recognizes digitalization as a design task and promotes the establishment of digital design as a profession.**

In public discussion about digitalization, the design perspective is missing. We need a change in mindset here too, so that the design culture can receive the attention it deserves. Public digitalization projects, such as E-Government, are also a design task and should be understood as such. The public authorities can thus take a leading role and serve as a role model for establishing digital design as a profession.

As a further measure, public funding programs can be expanded to include a digital design component, thereby creating incentives for establishing the profession of digital design. Similarly, we need an education and science policy which supports academia in establishing a training and research culture for digital design through funding programs.

**In academia and education, we need a training and research culture that combines technical and design skills.**

We need training and further education in digitalization to focus primarily on either the technological dimension or the design content. This culture must be expanded to include training courses that combine the technological and design skills so that people can recognize and achieve digital design as a goal of training and further education.

To do this, we need a separate academic culture for digital design. This can be achieved in particular by founding departments or even separate colleges that focus on digitalization, comparable with the Bauhaus 100 years ago.

## 4 What Is Digital Design?

Of all the megatrends that are driving change, digitalization is by far the strongest factor. Therefore, we describe and recognize digitalization — changing industry and society using digital technologies — as a gigatrend.

Digital designers design and optimize by communicating and leading. A digital designer is someone who thinks about the future, someone who is capable of creating a vision for digital products, processes, services, business models, or even entire systems, free from technical or organizational obstacles as well as apparent reservations (outside-in thinking).

Digital designers are also capable of ultimately turning this vision into reality. They transfer (technological) possibilities into (new) product/process/service/business model/system design. To do all of this, digital designers must be skilled in design and the available technologies and be capable of interacting with all stakeholders.

The difference to previous approaches lies in the simultaneous and holistic consideration of all components and their design. Just like an architect has to think about the materiality, environment, and economic efficiency of a building as well as the actual layout, a digital designer will have to think about the same things for their product. This means that not only software and the associated interface design, but also the physical product design and aspects such as economic efficiency, psychology, cognitive sciences, social sciences, occupational sciences, ergonomics, marketing, and communication design and many other aspects must be understood and considered to the extent that, in case of doubt, corresponding expertise can be engaged constructively.

### Digital designers design on a large and small scale

On a large scale, design means in particular designing new digital business models, processes, and strategies, brand experiences, ecosystems, products, and services. On this scale, design also encompasses the social development influenced by all of the above. On a small scale, design means thinking about small, digital, everyday things. Designing or optimizing the structure for managing a book of household accounts in a spreadsheet is just as much digital design as is designing the next disruptive social network.

### Digital designers design the visible and the hidden

For users, it is the interaction with digital systems, processes, and end devices that is initially visible or perceptible. The technical architecture, data structure, algorithms, and connections to other systems remain hidden. An easy and understandable process for selling cinema tickets via the World Wide Web is just as much part of digital design as is the definition of the data required and the technical ecosystems connected for the sales process.



## Digital designers design the tangible and the intangible

Even though digitalization implies something intangible — that is, software and data — digital design must also consider the tangible, as digitalization always has a reference to a tangible object. An app for online banking on a smartphone is intangible digital design, as is the design of speech interaction for booking a hotel with a digital assistant, or virtual reality applications.

Tangible digital design is concerned with the Internet of Things — for example, an intelligent house which, using digitalization, coordinates sun blinds, the heating system, and the solar plant with battery storage such that as little fossil energy as possible is used. Ultimately, the tangible and the intangible can be merged in hybrid technologies and lead to augmented and mixed-reality systems.

## Digital designers design objective, benefit, and means together

Objectives are the desired results of digitalization. Benefits are the added value of the means, and the means are digital products, systems, and services for achieving the formulated objectives. From an innovative perspective, objectives, benefits, and means define each other in digitalization, as new technical possibilities allow new objectives to be achieved and can offer new benefits. New technologies (such as artificial intelligence, Internet of Things, or blockchain) offer new opportunities, which can result in previously unachievable objectives and new potential benefits.

## Digital designers design the design process

Digital products, systems, and services are often highly complex and innovative in nature. This means that when they are created and developed, a lot of information has to be obtained and decisions have to be taken about their design. This design process is not trivial and must therefore be shaped on an ongoing basis with methodical skill, care, and in particular, with the technical possibilities offered by digitalization.

## 5 What Does Good Digital Design Mean?

### Good digital design is useful and usable

Digital technologies are supposedly some of the most powerful technologies that have ever been invented by humankind. Good digital design uses these technologies to create benefits and added values. At the same time, however, digital technologies are supposedly the most complex technologies that have ever been invented. This complexity must not become a user problem. Therefore, good digital design is devised such that it can be used easily by the user.

### Good digital design is elegant and aesthetic

Just like a well-designed (analog) product or building has its own elegance and aesthetics, good digital design is also elegant. This elegance refers to the users' expectations for visible elements, such as aesthetic interfaces or elegantly designed end devices. But invisible elements are also elegant. Along with the internal structure of a digital solution, algorithms, data structures, and software architectures can develop their own elegance. They do this, for example, through their simplicity, efficient processing, reusability, good maintainability, or intelligent use of the technical possibilities offered by digitalization, thereby promoting their own usefulness for the development of digital products, systems, or services.

### Good digital design is evolutionary

No solution is perfect from the very beginning — all solutions continue to evolve. External circumstances can also necessitate change. Good digital design is devised such that it has a long life. Changes and further development are made as simple as possible or are not hindered unnecessarily.

### Good digital design is exploratory

Believing that you always know in advance which solution will work is naive. This is particularly true for the innovative field of digitalization. Good digital design is exploratory — it allows users various options for achieving their objectives. It draws conclusions from users' behavior to detect the best way forward and to develop this path further.

### Good digital design focuses on the person as a whole

User-centered design is an important design principle but is too short-sighted as the user is also a person within society as a whole. The expected revolutions as a result of digitalization therefore mean that the focus must be shifted to the person as a whole and their environment. Today, for example, fully digitalized workplaces tie employees to their desks and lead to a lack of movement for many office workers. Good digital design can design digital workplaces such that movement elements become an integral part of the work and therefore promote employees' health.

## Good digital design anticipates the effects of its results

Digitalization does not take place in a vacuum; it has an effect on all people and on society. Current developments show that not all effects of digitalization are really desirable and can even lead to undesirable side effects. Therefore, good digital design anticipates the effects of its results and soundly weighs up whether the advantages of a solution are canceled out by the disadvantages that arise.

## Good digital design respects data protection and data security

— What data is stored and how it is processed is a design issue. Therefore, data protection and data security begin in digital design. From the very beginning, good digital design takes account of applicable data protection laws and uses data sparingly, meaning that it uses only data that is required for the intended purpose. In good digital design, critical data is specially protected according to its importance through the use of current technologies that take account of risks.

## Good digital design is sustainable and creates sustainability

— IT and the Internet use a lot of energy every day. The manufacture of end devices such as smartphones or tablets also consumes a lot of resources. Energy and valuable resources can be saved through intelligent design. Conversely, intelligent digital solutions can create sustainability. For example, digital means of communication can reduce the necessity for travel and thus save energy. Intelligent digital control systems already save energy in a lot of areas of industry today.

Good digital design must contribute to sustainability and therefore favors solutions whose energy and resource consumption is minimal in comparison to the benefit, and whose quality is distinguished by a long life. In digitalization, sustainability includes anticipating disposal. Therefore, before realization, good digital design plans what happens with data or end devices when solutions are no longer used.

## Good digital design appreciates analog and digital means equally

Analog and digital are not contradictions; they merely describe the poles of a spectrum. Just because something that was previously analog is now digital (e.g., paper books compared to e-books), this does not necessarily mean that it is now better. Good digital design does not have to maximize the digital aspect. Digital means should only replace analog means where this is appropriate and constructive. If an analog element is equal to or even better than the digital element, the analog element can be used. The potential of hybrid solutions can only be used to achieve real innovations when analog and digital means are appreciated in the same way.

## Good digital design uses digital means only where this is necessary

Without doubt, digitalization is a leading force for progress. But this is precisely why it must not become an end in itself, because then it would lose its power and credibility. Good digital design uses digital means intentionally and where this is necessary and creates benefits.

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## Acknowledgments —The People behind the Manifesto

Texts such as this manifesto are not written by one person alone. It is much more the work of many people who, through draft versions, critical comments, and numerous detailed discussions, have allowed the manifesto to be created. They must be thanked and recognized. The following people have also made a decisive contribution to this text: Holger Bramsiepe, David Gilbert, Ronald Hartwig, Karsten Lehn, Ulf Schubert, and Marcus Trapp.

Thanks are also due to the many people who have given feedback and provided valuable detailed comments on the various draft versions of the text. They are some of the first signatories of this text. Many thanks also to Katrin Krause, Linda van Rennings, and Anna Stolz for the graphical design, as well as to Konrad Tadesse for the technical implementation of the website. Finally, special thanks go to Frank Termer, who masterfully kept all the organizational threads of this project together.

Kim Lauenroth, for the Bitkom Digital Design working group, September 2018