

Ann-Kathrin Heinemann-Becker
Nina Rauwald

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Digital Competence
and Future Skills

HANSER

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an overview of all other contributions contained in the handbook can be found in the table of contents.

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Foreword



Why are we really concerned with digital competence? A question that you, as valued readers, have probably already answered before buying this book, right? But it's also a question I have asked myself repeatedly in recent years - even though I'm now the editor of a handbook on digital literacy and have trained with my company over 200,000 employees in companies all over the world in digital competence and future skills.

How does this fit together? My original, professional background is primarily in innovation and technology management, and in my earlier professional positions I dealt more with business model innovation, digital technologies and consulting approaches than with future talent development and competence management.

To understand the motivation behind this handbook, you equally need to know the development of the "Innovation Center for Industry 4.0", which I founded in January 2015 together with my partner Helmut Kraft near Regensburg in Germany.

Driven by enthusiasm for the vision of "Industry 4.0," which was first presented by Chancellor Angela Merkel at the Hanover Fair a few years earlier, we wanted to explain to the world the opportunities and potential of digital transformation in industry. We felt that a great new era was beginning, one that would bring many opportunities for companies and people.

Over several months, we traveled through parts of Europe and Asia to first understand for ourselves how far Industrie 4.0 and the digital transformation had come, and which concepts and ideas really worked in practice. All these insights were ultimately the basis for our modularized training program, named Digitalization and Industry 4.0 Driver's License, which also led to the founding of our company.

It was quite unusual to found a startup with a training program in a year when Apple introduced its first smartwatch and Gartner predicted 3D printing, Internet of Everything and various cloud services, among others, as the most important trends of the year. Founding a startup then, as now, meant first and foremost developing technology.

Over the years, the original idea of training employees and managers in companies for Industry 4.0 and getting them excited about it has developed into a significantly different task for my team and myself. After the first training sessions in Singapore at the beginning of 2015, I realized that it is not so much a matter of explaining certain technologies, but rather of enabling people to make the right decisions for themselves within the context of today's VUCA world (Velocity, Uncertainty, Complexity, Ambiguity). To achieve this, people must be empowered to deal with multidimensional requirements on their own. A goal that sounds very simple in theory, but in practice meant much more than we could imagine at the time.

In order to achieve this ambitious goal, however, it was necessary for me personally to get an even deeper understanding of the conditions and realities in the companies today. One particular reality that I have repeatedly observed in recent years and today is a perception gap. On the one hand, there were and are still the large conferences, trade fairs and workshops of associations and institutions with high-profile speakers, use cases and plenty of "digitalization confetti." These events often felt and still feel very much like family reunions. Why? Because, irrespective of where you are, you usually meet a very similar group of people everywhere who are intensively engaged with the digital future. One could almost speak of a kind of digital elite. Unfortunately, these well-intentioned scenarios often do not correspond to the reality in companies. In concrete terms, far fewer and significantly less significant projects have been implemented, as quite a few studies have repeatedly revealed in recent years. In addition, far too few people in the companies and even less in wider society really take sufficient note of the initiatives and projects. It is a case of the ivory tower we are all familiar with. To make matters worse, the leading global industry and the financial sector have an almost historically grown relationship with large consulting firms, which has meant that many digital projects are driven primarily externally as an extended workbench. In many cases, this prevents broad digital participation across different disciplines and groups of people, let alone the democratization of digitalization.

Back to my initial question about why I am concerned with digital competence. If we drill down into the almost hackneyed-sounding terms behind digital transformation, we can identify many issues and topics that need to be understood in a much broader context. This context is far broader than a purely technical business perspective. Rather, digitalization as a new dimension of innovation has sparked an economic, societal, and even social discourse that needs to be understood in all of its diverse shades – and that even outside the ivory tower. Let's take the principle of networking as an example. It is in no way a new development, but rather a deeply rooted human need to bridge barriers and cliffs and to connect things and people. This also applies in a special way to companies, which have always developed from relationships between different stakeholders. The creation of guilds or the organization of the Hanseatic League are good historical examples here. The possibilities for networking have technically increased many times over, which must be understood – and not just for a small, exclusive minority. The exciting question, however, lies not only in the nature of networking, but also in the consequences that will result for people, societies and entire economic systems. Far too often, our answers to the question of "why" are too superficial. Are we just chasing a trend or do we really want to understand what it is all about?

A second example: the saying that “knowledge is power” was not only established in the course of digitalization, but was already articulated in the 17th century by Sir Francis Bacon. Today, we could paraphrase this statement in simplified terms as the “Big Data phenomenon”, which seems to be further intensified by exponential data volumes. If we assume that knowledge is power today - even more than ever, then we need to look more intensively at how digital issues are changing our lives and also at what role humans are playing in this. The much-invoked “thinking outside the box” is required, not only in theory, but quite intuitively for each of us. For me, this is also an intrinsic part digital competence and therefore a decisive factor for our common future.

Admittedly, the contexts described are somewhat simplified, but they underscore an interesting paradox: On the one hand, our world is changing quite massively, while on the other hand certain human, social and entrepreneurial issues remain quite unchanged.

Understanding the interrelationships of our time holistically and multidimensionally is precisely what digital competence means to me, or at least its starting point. Digital (r)evolution takes place not only in smart devices and algorithms, but above all in understanding the “new” world and thus in learning and education, at the most diverse levels. Only when a broad base succeeds in jointly penetrating the potentials will we also be able to solve the challenges of our time, be it a pandemic, social discord or sustainability. Digital competence must therefore leave the “ivory tower” and become accessible to everyone.

Therefore, at its core, it's not about digitization at all, that's just a means to an end, instead it's about something like the wisdom of how we as humans deal with the challenges of our time. For me personally, this realization is the reason why I consider this topic to be so central to our social and economic development. This realization is the reason why this book project came into being.

This book is intended to provide you with inspiration and concrete ideas on how different companies, institutions and industries are trying to operationalize “digital competence” for themselves. The book does not follow a single paradigm or school, instead it is a synthesis of different perspectives. Therefore, use the book as a toolbox to make your own sphere of influence - on a “small” or “large” scale - fit for the future. The individual contributions take different perspectives, but are united by the fact that this book features those experts who are actually doing something, who are taking responsibility, and who are thus helping to shape the (digital) future and are now sharing these experiences and their use cases with you. The following pages are thus also intended to be a stage for those who are already doing great things today and who simply do things full of optimism.

This book does not claim to be exhaustive; rather, it aims primarily at the multidimensionality of the topic. Accordingly, you will find heterogeneous starting points on what digital competence can mean, which organizational, cultural and strategic changes are needed and how people in organizations can develop in the future. To this end, the book also includes very concrete practical reports on how companies have designed their competence frameworks, developed training curricula, or implemented concrete e-learning and blended learning concepts, for example.

This book can also be understood as an invitation to continue the discourse on digital competence and the future of learning and development. If you, as readers, have ideas, experiences and suggestions on the topic, please feel free to contact us - the book project is far from over with the publication of this work.

Finally, I would like to conclude with a big thank you to all the people involved in this project. To realize a book of such scope requires a strong team. First and foremost, this includes the authors who have agreed to invest their valuable time in this project in order to provide a unique view into the most diverse shades and implementations of digital competence development in practice and science. But it also needs an innovative publisher, who has the courage to devote so much space to this important topic, which is why I would like to sincerely thank Michael Justus and Volker Herzberg from the Hanser Verlag. And last, but definitely not least, this book could not have been

realized without the dedicated team of future skills enthusiasts at our company, i40.de. I would especially like to thank our project manager Anne Koark, who organized this book full of sensitivity, passion and hundreds of emails. I would also like to thank my colleagues Daniela Wischinski, Daria Kutepowa and Martin Dowling for their support.

Yours

Philipp Ramin

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All authors are committed to the equal treatment of all genders. For ease of reading, the masculine form may have been used in places. This is in no way intended to imply that only men are meant. Digitalization needs diversity!