On Change Management in the Age of Artificial Intelligence: A Sustainable Approach to Overcome Problems in Adapting to a Disruptive, Technological Transformation

Daniel Valtiner and Christian Reidl
Infineon Technologies Austria AG, Austria
Email: daniel.valtiner@infineon.com, christian.reidl@infineon.com

***Abstract*—Digital Transformation brings along many challenges, opportunities and changes for economy and society. Companies are faced with accelerating dynamics and need to speed up in their ability to adapt in order to gain benefit from these developments. However, an increasingly important aspect of the Digital Transformation is the rise of Artificial Intelligence. This paper presents a practical approach of a change management process for organizations. It comprises top-down and bottom-up elements to introduce a controlled, organization-wide transformation process to implement artificial intelligence technology in daily business life. The approach aims to address the organization in a holistic way and thereby tries to integrate artificial intelligence in existing strategic frameworks.**

***Index Terms*—artificial intelligence, change management, strategic management, digital transformation**

I. Introduction

Today the term digitalization comprises a broad spectrum of definitions which exceeds its bare technical definition from solely converting analog to digital information. [1], [2] A frequently encountered definition is the so-called Digital Transformation, which i.e. describes a set of technological changes across wide areas of society. [3] In an industrial context Digital Transformation is known as the Fourth Industrial Revolution – or Industry 4.0 – which basically means the comprehensive entry of information and communication technology in industrial manufacturing across the entire supply chain. [4] Looking i.e. on Germany's consulting sector, the revenue grew from 13 to over 25 Billion Euro from 2005 to 2015, which is mainly induced by the Digital Transformation according to a study of the BDU, the corresponding union of German consultants. [5]

Research indicates that many developments related to Digital Transformation, such as technological development, involve exponential characteristics. [6] A well-known example in the semiconductor sector is Moore's Law, which was formulated in the late 1960s. Moore observed that the number of transistors on a given microchip area doubles each 18 to 24 months. As a consequence the functionality doubles its capability for the same prize – or, to put it differently – the price for a given capability is halved within such a period. [7]

Thus, companies face severe need for rapid change in order to be able to react on the fast-changing environment and be properly prepared to further evolving their organization. New business models and being fast & agile are important abilities frequently discussed in daily business life. A well-known example for a branch which has been hit hard by such dynamic and/or disruptive change is the music industry as painted in a publication by Matzler et.al, in which they identified seven patterns of Digital Transformation. [8] Revenues in that industry reached 20 Billion USD around the turn of the millennium. Since then, they literally fell by more than 70 % (corrected by inflation) and in the light of a growing market for people listening to music.

II. AI on the Rise

One important aspect that comes along with the Digital Transformation is the rise of Artificial Intelligence (AI). From a scientific perspective the term of AI is rather hard to catch – there are even multiple definitions of human intelligence. Kahneman, i.e., explains intelligence through interaction of two cognitive systems operating on different levels of speed each. [9] Speaking from AI, one often means abilities of IT systems such as machine learning, deep learning, big data analytics or natural language processing. [10] Another well-known definition comes from Alan Turing and the corresponding Turing Test, in which a human individual communicates with two parties – one machine, the other human. At a point where the first human cannot differentiate if he or she communicates with the other human or the machine, Turing calls it intelligent. [11] A non-scientifically published (but in the context of this paper useful) definition can be found on Amazon's homepage, which argues AI to be a part of computer science which deals with machine's acquisition of cognitive capabilities that are usually assigned to humans. [12]

Manuscript received April 14, 2021; revised August 1, 2021.

doi: 10.18178/joams.9.3.53-58

A very important aspect of AI systems can be found in their ability to learn, which is often implemented using artificial neural networks (ANN). The basic idea is to copy the architectural concept of the human brain with its neurons and synapses using a model with knots and weighted edges. The weight of these edges and trigger points where neurons fire are changed by a so-called training process where the structure of the net is changed until the expected output is reached. Therefore evolutionary techniques can be used as shown in a publication from a southern Austrian university. [13]

Research as well indicates that the rise of AI is expected to severely push economic development. A PWC study from 2018 concludes that Germany's GDP may rise up to 11.3 % until 2030, solely induced by AI. [14] The US consulting company IDC concludes a global revenue increase by 1.1 trillion USD in the timespan between 2017 and 2021. [15] Coming from the expectation that AI technology is rapidly rising, countries and country unions such as China, the EU or the US form strategies in which they declare AI as key technology, resulting in significant research funding budgets in this domain. [16] [17]

III. Trick or Treat: Change

As the impacts of digitalization and AI are so severe, companies need to react fast and efficient in order to keep competitiveness and ensure sustainable growth. On the one side, a strong need for new business models and business logics can be observed. According to the seven patterns of Matzler et.al, clear tendencies such as orienting towards free end-products and services (i.e. Google Maps, WhatsApp etc.), personalization and decentralization or innovations combing aspects across different industries force companies to rapidly overthink their income logic. [8] If they do not, examples like the music industry show what may happen. CISCO CEO John Chambers made a statement saying that only 10 % of the top 1000 companies would survive Digital Transformation. [18] On the other hand novel technologies offer the opportunity to improve efficiency and find new ways of working and cooperating, i.e. crowd sourcing. As a consequence, a constant need to adaptive change can be concluded for companies exposed to those developments.

The constant need for companies to adapt – or in a radical sense, to transform and reinvent themselves – implies a number of opportunities and threats at the same time. The question how much change an organization needs and how much change an organization can endure at the same time becomes more important than ever. Too much change may lead into chaos. Especially for large-scale enterprises, strategic directions are hard to control in a fast-changing environment. On the other hand, being too slow with transformation enhances the threat of not being able to react fast enough in a fast-changing world.

Further research shows that change for human beings comes along with some sort of fear, which leads to resistance when implementing change in organizations. Examples for types of resistance are rationally arguable resistance, political resistance or emotion-based resistance. Psychology classifies different phases of experiencing fears which are the main contributor of these resistances, as i.e. the model of Roth, Cevey and Prange does. [19]

Managerial science provides a set of solution strategies in order to overcome these problems. A very successful example for such a strategy is Kotter's 8 Steps. [20] In this work he provides a step by step approach containing elements like starting with creating a sense of urgency, building a powerful coalition, developing a vision and more. Following these principles, any expected resistance may be identified and reduced significantly.

Another fascinating approach by Kotter argues that established organizations often tend to be hard to change as they rely on established hierarchies and processes. Changing this "operating system" literally means to make a surgery on the open heart of the organization and thus is hard to achieve and risky for its basic operation. Therefore, installing a second operating system with a set of new rules opens up an opportunity for a radical change approach under controlled boundary conditions. As soon as the approach is proven in use, it can be transferred step by step towards the original organization when needed – and will find higher acceptance from employees and managers. [21]

Neumann et.al. propose to drive change by viewing organizations as self-referring systems. This view comes from system theory and proposes to "holistically understand" organizations and their function in terms of structure and resulting behavior. [22] Structure creates behavior and behavior as well confirms given structures. Therefore, organizational learning can be an approach to implement change. Agrys and Schön differentiate three phases of different learning: single loop, double loop and deutero learning. The first directly addresses achieving results, the double loop learning addresses the definition of the results themselves and reflects the result setting processes and corresponding learning. Thirdly, the deutero loop learning is the processes of understanding the learning process itself and thus a reflection of the learning loops.

IV. Problems for Non-AI-Companies Who Want to Make Use of This Technology

This paper is an outcome of a PhD-thesis that analyzed the current situation of a world leading semiconductor company with respect to the question how the company deals with the topic of AI in terms of strategy, activities and preparation and/or implementation of change. As one aspect, qualitative interviews with more than 20 persons from top management and technical AI expert positions were carried out. The questions of the interview addressed those person's perception of the company's approach to deal with AI and which problems they see or expect to appear in the upcoming years as well as which alternative approaches they think could work to accelerate the adaption to the new technology. Further a pilot project applying AI technology in the company's manufacturing environment was run and learnings have

been concluded. The project was about developing an AI system that is trained with data from a manufacturing tool in order to be able to predict when the machine is going to break down so that maintenance intervention is needed. It gives important insights due to the fact, that multiple parts of the organization are needed to run such a project and many of the arising problems are similar for different use cases. Following problems are extracted of those interviews as well as the pilot project with the intention to generalize them for other organizations. Refer to the following examples:

A. *Inhomogeneous Presence and Awareness Throughout the Organization*

AI is frequently present in departments which directly benefit from AI, such as business units which already have AI aspects in their current or soon-expected business models. Departments, especially supporting functions like e.g. finance or HR, in which employees primarily do not have engineering background, who could raise efficiency potentials but do not see direct benefit from investigating in possible AI solutions, do not actively push activities in that field. Risk is considered growing for them, to oversee high potential in early adopting for using disruptive technology.

B. *Efficiency, Learning and Hype*

For some parts of the organization, AI seems to become a kind a hype. Managers tend to run projects mainly because they want to run one whilst neglecting to choose sustainable topics with proper financial potential. On the other hand, learning new disruptive technologies in explorative fields means that not each project offers a straight forward character with an easy and obvious business case on the beginning. Hence, one needs to take risks. Further starting too many activities at once leads to blocking the limited resources of present AI experts in case it is not a core competency of the company, which applies for many organizations. A difficult tension field opens up.

C. *Human Resources, Capabilities and the Different Languages*

Many companies in manufacturing industries are very knowledge-intensive and computer science is not their core business – so AI experts therefore are limited. Skilled experts for dedicated departments are highly specialized in their field on the one side and often heavily loaded on the other. Developing new approaches using AI is often achieved by forming project teams consisting of specialized departments and IT staff, from which AI know-how is delivered. The experts are talking different technical languages. It can be highly challenging for IT employees to deeply understand the technical issue of departments, as it often took years for the respective experts to reach their level of understanding and expertise. Department experts often do not have specific background in computer science and thus lack knowledge in that sense. For them it is hard to know what to expect and how to apply AI techniques. To sum up, two different worlds collide and are expected to invent highly complex solutions in comparably short time.

D. *Availability of Data in Proper Quality*

An already well-known problem across different fields is that the available data is unstructured and suffers from poor quality. Thus, many AI projects take essential efforts for basic data cleaning alone. This allocates resources and, in a first or short-term consideration, does not generate benefit. Literature provides suggestions on how to differentiate multiple tasks in data cleaning activities. [23]

E. *Knowing Where to Go*

For departments or entire organizations it may be hard to classify where they are in terms of digital transformation, simply because a "degree of digitalization" is hard to measure. Therefore, it can be challenging to formulate a strategy and targets to monitor effectiveness of decided actions. To clearly be able to monitor cause and effect is not always possible.

V. AI Transformational Journey as Solution Approach

In order to address these problems and try to minimize resistance when changing an organization towards gaining benefit from the disruptive change of rising AI, the following approach is proposed and explained step by step. A combination of top-down and bottom-up elements is chosen in order to maximize the penetration rate within the organization.

A. *Step 1: Knowing Where You Are: Position Fixing Using an AI Radar*

As a first the step, the introduction of an AI radar is proposed. The radar is basically a set of KPIs (key performance indicators) which should measure the organization's status for different AI-related activities. For the definition of the KPIs as well as the valuing, a management self-assessment can be an instrument. Supervision by a specialist consultant may be useful as well. Fig. 1. Shows a proposal of a radar with a set of exemplary KPIs.

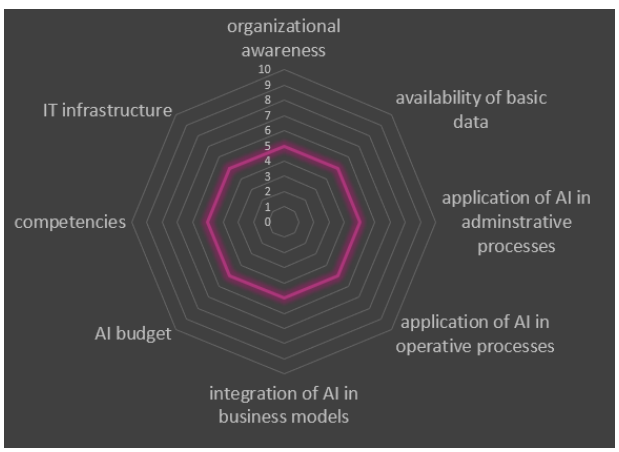

Figure 1. AI radar

The AI radar should be integrated in the company's top-level strategy and regularly updated (i.e. quarterly) in responsibility of the board. The KPIs may differ from use case to use case. The proposal shown in Fig. 1 means the following:

- Organizational awareness
  How present is the topic AI in the organization? A ten would mean an absolute "AI first" mindset, meaning that each individual first thinks how an AI could solve a new problem. 0 means that AI is definitely not a topic at all.
- Availability of basic data
  This point is a rating of basic data availability and its quality. Under consultation of i.e. the IT organization each department may rate its own status for available data and its quality for use by an AI system on a commonly agreed standard.
- Application of AI in operative processes
  How many AI-related applications are used to perform the company's core tasks?
- Application of AI in administrative processes
  How many AI related applications are used to perform the company's administration tasks like i.e. finance reporting, travel bookings, etc.?
- Integration of AI in business models
  This should be a rating of AI in terms of its presence for active business models. The KPI gives information if the business side as well considers AI as a growth perspective.
- AI budget
  How much budget does the company spend on AI-related activities?
- Competencies
  A value for rating the availability of AI-related competency
- IT infrastructure
  This KPI should represent the status of the given IT infrastructure and whether it is able to deal with the organization's needs for running AI applications.

However, it is important to mention that the AI radar is not designed to represent an objective picture. The intention here is to have a rating which is agreed on by the top management and which then can represent the organizational development in the defined aspects.

B. Step 2: Adapting the Company's Strategy to AI

The second step is to integrate AI elements in the organization's top level strategy. For many companies AI is not their core business, but sleeping on the rise of that technology might be a threat. Hence integration of AI may be a reasonable approach. That means that top level strategic goals should at least contain aspects of application of the new technology. Further, dedicated lighthouse projects should be defined, which generate organization-wide awareness and act as a role model for motivation and confirm top management's attention to the topic. The AI radar may be part of the company's strategy and be frequently monitored as mentioned. For bigger enterprises, the radar might be broken down to department levels.

C. Step 3: The Digital Belt as an Enabler for Bottom-up Activities

A well-educated organization is key to success for many companies. For pushing digitalization and AI-related activities and know-how, the introduction of an education system based on the idea of six sigma belts is proposed. [24] Therefore a curriculum for so-called yellow, green and black Digital Belts were developed.

The yellow belt relates to introductory content of digitalization and AI concepts and can be applied for a broad spectrum of employees without background in computer science or information technology.

The green belt evolves further expertise in running AI-related projects with the goal of realization of a concrete project under supervision of a black belt. Thus, the yellow belt offers a very basic education and is primarily designed to generate awareness, while the green belt goes deeper and enables employees to accompany and/or lead projects.

The black belt may be considered the master degree and shall be completed by academically educated AI experts which focus on social skills such as supervision and coaching, project management & leadership and prepare the candidates to supervise others. The number of required persons with belts needs to be defined case by case. The proposal out of this work is to educate 2 out of 50 employees for the yellow belt, 1 out of 50 employees with a green belt and 1 out of 500 employees for the black belt.

The following table gives an overview of the most important training content. A concrete proposal for the curricula needs to be defined.

TABLE I. DIGITAL BELT EDUCATION

	Yellow Digital Belt	Green Digital Belt	Black Digital Belt
Programming Examples	x	x	
Machine Learning	x	x	
Data Science and Analytics	x	x	
Algorithms and Data Structures		x	
Practical Use Cases	x	x	
Project Realization		x	x
Project Management			x
Leadership			x
Coaching & Supervision			x

The idea is to give yellow and green belt candidates an introduction to computer science related thinking and provide experts from computer science (which are either in place or have to be hired) social and leadership skills to guide the other belts in driving AI related projects and activities. A proposal for development of a concrete

curricula would be 2x1 + 1 days for yellow belts, 2x2 days for green belts and 2x1 +1 days for black belts. In between there is a break in which the candidates may do either a small homework of a medium-size project. Green belts realize one medium-size project under supervision of black belts and black belts need to supervise others under supervision in their education phase. Therefore, the breaks for green and black belts should take at least for 3-4 months.

D. Step 4: Start the AI Journey and Communicate

For implementation of the changes an AI journey for the entire organization shall be started. The top management should have prepared the strategic adaptions (already having other top managers included) and the digital belt education concept should be finished at that time. A proper communication concept shall be prepared, explaining the importance of the rise of AI to the entire organization. The communication concept may use the following formats:

- Monthly CEO video statement
  The CEO (and/or other board members) gives monthly video statements which are published on the intranet and contain explanations on urgency, the *why*-aspect as well as present different examples of running activities in different parts of the company. The videos should be short (i.e. 5 mins) and may contain a scheduling. For example, different department managers can be integrated reporting their activities in a rolling schedule, etc.
- Integration of AI in all regular company meetings as one fixed agenda point
- Regular top management mail reporting and highlighting of success stories as well status updates to the AI journey

The AI journey starts simultaneously with its communication. Lighthouse projects should be started, the strategy be adapted and communicated and the education program be started.

E. Step 5: Create a System that Allows the Change to Start

Following Kotter's example, the top management should introduce a new system for AI-related activities. A dedicated budget needs to be released to finance lighthouse projects as well as projects that come out of the education activities. To overcome the problematic of business case calculation, the following metric shall be applied by a dedicated commission within this new operating system. The commission can consist of managers and technical experts (i.e. 5 persons), or, if already present, be handled by innovation managers. The proposed metric is shown in the following table.

TABLE II. METRIC FOR PROJECT RATING

Business Case	0-10 points
Learning potential out of project	0-5 points
Ability to be transferred to other departments	0-5 points

Throughout application of this metric projects with high learning potential for the organization and the potential to be applied by others may concur with projects with good business case. In sum, the project portfolio can then result in a combination of financial sustainability and handling of uncertainty with disruptive technology.

F. Step 6: IT Ambassadors: Overcoming Know-how Lacks Through Collaboration

In order to address the issue with the lack of expertise within the IT and the respective departments, an IT ambassador concept is proposed: educated IT staff is sent out within the organization and put into leadership responsibility of the target department. It may apply that legal leadership is put into the target department and functional reporting is kept within the IT organization. With that approach IT experts can keep their full network into the IT organization, but work suburb directly at the destination of their implemented target applications. When running AI projects, these employees can deeply understand what kind of problems the systems will have to solve. On the other hand they closely cooperate with department experts that immediately get the view of IT engineers and thus can learn computer science- related thinking and what to expect from AI systems.

VI. CONCLUSION

The paper presents a change management approach, which addresses problems arising for companies when adapting to a rapid technological change such as the rise of AI. To overcome these problems, the proposed approach combines elements from bottom-up and top-down methodology in order to maximize momentum on change. Initially, a set of specific difficulties is identified which have been conducted through explorative research in a leading semiconductor company. Limitations of the approach are given by this set of identified problems which may vary in different organizations. Further, monitoring of effects when applying this approach is proposed by using a set of KPIs in the so called "AI-Radar". This radar demonstrates a possibility to monitor the progress of change based on expert judgement. However, it does not provide an objective measurement of the companies' general condition in applying AI technology. The key findings to overcome these difficulties are considered for general applicability. Top down change is achieved by adapting the organization's strategy and definition of lighthouse projects. The bottom-up part is reached throughout a combination of upskilling and providing new boundary conditions which differ from the organization's standard operating model according to Kotter. With the "AI-ambassadors" - approach, a bridge between dedicated departments and computer science experts is created. The presented steps thus shall represent a holistic management approach to properly prepare an organization to deal with AI in a proactive way.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Daniel Valtiner conducted the research, drafted the manuscript, designed the figures and wrote the paper. All authors discussed the results and commented on the manuscript.

REFERENCES

[1] T. Wolf and Jaqueline-Helena Strohschen. Digitalization: Definition and Maturity, *Inform. Spektrum Ausg. 12018*, 2018, Accessed: Jul. 17, 2020. [Online]. Available: https://www.springerprofessional.de/digitalisierung-definition-und-reife/15405302?searchResult=6.Digitalisierung:%20Definition%20und%20Reife&searchBackButton=true.

[2] P. D. O. Bendel. Definition: Digitalization. *https://wirtschaftslexikon.gabler.de/definition/digitalisierung-54195*, Feb. 19, 2018. [Online]. Available: https://wirtschaftslexikon.gabler.de/definition/digitalisierung-54195/version-277247 (accessed Jan. 08, 2021).

[3] H. Weber, Digitalization in public Discourse, in *Unternehmens-IT für die* Digitalisierung *4.0: Herausforderungen, Lösungsansätze und Leitfäden*, H. Weber and J. Viehmann, Eds. Wiesbaden: Springer Fachmedien, 2017, pp. 3–13.

[4] D. Spath, O. Ganschar, S. Gerlach, M. Hämmerle, T. Krause, and S. Schlund, *Future Production Work - Industry 4.0*, Fraunhofer IAO, 2013.

[5] J. Murmann. Facts and Figures from Consulting Market, Bundesverband Deutscher Unternehmensberater BDU e.V., 2015. [Online]. Available: https://www.bdu.de/media/18888/facts-figures-zum-beratermarkt-2015.pdf.

[6] R. T. Kreutzer, "Drivers and Background of Digital Transformation," in *Treiber und Hintergründe der digitalen Transformation*, Springer, 2017.

[7] M. M. Waldrop, "The chips are down for Moore's law," *Nat. News*, vol. 530, no. 7589, p. 144, Feb. 2016.

[8] K. Matzler, F. Bailom, S. F. von den Eichen, and M. Anschober, *Digital Disruption: How to Prepare Your Organization for the Digital Age*, 1st ed. München: Vahlen, 2016.

[9] D. Kahneman, *Thinking Fast, Thinking Slow* Penguin, 2016.

[10] C. Bünte, "More than a simple Definition: this is Artificial Intelligence," in The Chines AI revolution: Consumerism, Marketing and Trade: How China changes the World's Economy with AI, C. Bünte, Ed. Wiesbaden: Springer Fachmedien, 2020, pp. 53–72.

[11] I. Teich, "Milestones of development of AI," *Inform. Spektrum*, vol. 43, no. 4, pp. 276–284, Aug. 2020.

[12] 'What is Artificial Intelligence (AI)? – Amazon Web Services', *Amazon Web Services, Inc.* [Online]. Available: https://aws.amazon.com/de/machine-learning/what-is-ai/ (accessed Aug. 25, 2020).

[13] I. Fehérvári, On Evolving Self-organizing Technical Systems. Alpen-Adria-Universität Klagenfurt, 2013, [Online]. Available: https://mobile.aau.at/~welmenre/papers/theses/Fehervari_On%20evolving%20self-organizing%20technical%20systems.pdf.

[14] C. Kirschniak, *Consequences of Applying Artificial Intelligence in Germany*, PricewaterhouseCoopers, 2018.

[15] J. F. Gantz, D. Schubmehl, M. Wardley, G. Murray, and D. Vesset. A Trillion-Dollar Boost: The Economic Impact of AI on Customer Relationship Management. p. 20, 2017, [Online]. Available: https://www.salesforce.com/content/dam/web/en_us/www/documents/white-papers/the-economic-impact-of-ai.pdf.

[16] European Commission, Key Enabling Technologies, *Horizon 2020 - European Commission*, Nov. 06, 2013. [Online]. Available: https://ec.europa.eu/programmes/horizon2020/en/area/key-enabling-technologies (accessed Jul. 27, 2020).

[17] 'Made in China 2025 – BACKGROUNDER - June 2018'. Institute for Security & Development Policy, 2018, Accessed: Jan. 19, 2021. [Online]. Available: https://isdp.eu/content/uploads/2018/06/Made-in-China-Backgrounder.pdf.

[18] P. Fisk, "At least 40% of all businesses will die in the next 10 years… if they don't figure out how to change their entire company to accommodate new technologies" ... 75 facts about business innovation today', *GeniusWorks*, Jan. 23, 2020. [Online]. Available: https://www.thegeniusworks.com/2020/01/at-least-40-of-all-businesses-will-die-in-the-next-10-years-if-they-dont-figure-out-how-to-change-their-entire-company-to-accommodate-new-technologies-75-facts-about-business/ (accessed Jul. 25, 2020).

[19] M. Landes and E. Steiner, "Emotional Reactions on Change, " in *Psychological Consequences of Change Management: Resistance, Emotions, Change Readiness and Implications for Managers*, M. Landes and E. Steiner, Eds. Wiesbaden: Springer Fachmedien, 2014, pp. 13–15.

[20] J. Kotter, H. Rathgeber, and S. Johnson, *Our Iceberg is Melting, Changing and Succeeding Under Any Conditions*, Unambridged Edition, Macmillan,, 2006.

[21] J. Kotter, "Accelerate!" *Harv. Bus. Review.*, Nov. 2012.

[22] R. Neumann and G. Graf, *Management-Konzepte im Praxistest*, 12007th ed. Wien: Linde Verlag Ges.m.b.H., 2007.

[23] V. Ganti and A. D. Sarma, "Data cleaning: A practical perspective," *Synth. Lect. Data Manag.*, vol. 5, no. 3, pp. 1–85, Sep. 2013.

[24] P. Schönsleben, "Quality Management — TQM und Six Sigma, " in TQM and Six Sigma" in "Integral Logistics Management: Operations and Supply Chain Management inside the Organization and cross-company, P. Schönsleben, Ed. Berlin, Heidelberg: Springer, 2020, pp. 723–750.

Daniel Valtiner was born in Villach, Austria, in 1986. He studied a Systems Engineering bachelor program at the Carinthia University of Applied Sciences. Further he finished a master degree in Information Technology, followed by an MBA in General Management at the University of Klagenfurt in 2017. Valtiner worked 9 years in refractory industries (RHI AG) followed by a further 10 years in semiconductor industry at Infineon Austria, where he filled different positions in R&D as well as manufacturing. He is currently working as a senior manager. Besides that, Valtiner gives different lectures at the Carinthia University of Applied Sciences and currently works on his PhD thesis in International Management.

Christian Reidl was born on March 24th 1976 in Passau, Germany. He studied electrical engineering at the Friedrich-Alexander University of Erlangen-Nurnberg starting from 1998 focusing microelectronics. He finalized University 2003 as a degreed engineer. He accomplished a master of business administration in October 2017. Actually, he is working on a PhD thesis focusing the inclusion of agile processes and methodologies into the development processes in the product development of semiconductor products.
In 2003 he started as a design engineer at Infineon Technologies Austria to contribute at the development of integrated magnetic sensors. 2013 he changed into a management position and since them he leads design groups as a director for product development in Villach.