

## Table of Contents

<b>Imprint .....</b>	<b>2</b>
<b>Forewords .....</b>	<b>3</b>
<b>1. Welcome to the VUCA World .....</b>	<b>11</b>
1.1 How Digitalisation Changes our Everyday Lives and our Companies .....	13
1.2 Technologies on the Rise .....	15
1.3 Between Moore's Law and Huang's Law .....	18
1.4 How Tech Companies and Start-ups change Industries .....	20
<b>2. Technologies .....</b>	<b>25</b>
2.1 From the First Industrial Revolution to Industry 4.0 .....	26
2.2 Technologies on the Rise – Knowing and Interpreting the Trend .....	30
2.3 Artificial Intelligence .....	32
2.4 Augmented and Mixed Reality .....	38
2.5 Virtual Reality .....	40
2.6 Robotics .....	42
2.7 LIDAR .....	47
2.8 SLAM .....	49
2.9 Li-Ion and BMS .....	50
2.10 Camera Systems .....	51
2.11 Ident-technologies .....	53
2.12 E-Ink .....	58
2.13 Drones .....	60
2.14 Hyper Loop .....	61
2.15 IoT Wireless Technologies .....	62
2.16 Exoskeletons – Superpowers in Everyday Working Life .....	66
2.17 Trends in IT – Cloud Services/Edge Computing .....	68
<b>3. Changing the Way We Work .....</b>	<b>71</b>
3.1 Additive Manufacturing Processes as an Example of how our Work is Changing .....	72
3.2 Sustainability as an Example of Changed Working Methods .....	75
3.3 New Technologies and Trends Impacting Employees .....	80
3.4 Lifelong Learning and Supporting Employees .....	83

>>

## Table of Contents

<b>4. Changes in Logistics</b>	87
4.1 How Logistics has Changed in Recent Decades	88
4.2 Automated and Autonomous	89
4.3 Production Facilities	92
4.4 Warehouses	102
4.5 On Premises	112
4.6 Supply Chain	115
4.7 On the Way to the Customer	119
4.8 Logistics Planning	123
<b>5. Moving towards Implementation</b>	137
5.1 From the Idea to Effective and Widespread Implementation	138
5.2 Four-steps to Industrialisation	141
5.3 Lean First, Automate Second!	145
5.4 Lead Plant vs. Model Factory	146
5.5 Implementation Cycle	148
<b>6. Identifying the Right Partners</b>	153
6.1 Why Disruption is Impossible without Cooperation	154
6.2 Scouting for Innovations	157
6.3 Science and Research Projects	159
6.4 Tradition and Disruption – Learning from Start-ups	161
6.5 Developing new Fields of Business	164
<b>7. Planning and Communication</b>	167
7.1 Implementation Strategies for Companies	168
7.2 Internal/external Communication and Logistics Prices	173
<b>8. Vision for Logistics</b>	179
8.1 Converging Technologies in Logistics	180
8.2 How do I develop my Own Vision for my Company?	182
8.3 A Hypothetical Vision of the Future	185
<b>The authors</b>	191/192