Management for Professionals

Ralf T. Kreutzer · Marie Sirrenberg

Understanding Artificial Intelligence

Fundamentals, Use Cases and Methods for a Corporate AI Journey

Springer

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Any sufficiently advanced technology is not too different from magic.
Arthur Clarke

Preface

One term is increasingly dominating discussions on the subject of digitalization: **Artificial Intelligence (AI)**. Chinese companies such as *SenseTime* even place Artificial Intelligence at the **center of the 4th Industrial Revolution**, in which most of the world's economic nations find themselves today. *SenseTime* has a good position to do this—after all, it is currently the **most valuable AI start-up in the world**.

This is not by chance: In its **master plan "Made in China 2025,"** China defined Artificial Intelligence as one of ten industrial areas in which China wants to achieve a global leadership role. China had defined impressive goals. By 2030, China wants to be more than just a global **AI innovation center**. The Chinese AI industry will then have a value of approx. 150 billion US-$—and the AI-supported industry ten times that amount. China has recognized that Artificial Intelligence is the **mother of all new technologies**.

Developed countries in America and Europe are (still) far away from this kind of strategic planning. Several questions arise regarding the possible causes:

- Is the inadequate analysis with Artificial Intelligence due to the fact that there is still **no comprehensive idea** of what Artificial Intelligence can do for companies, entire industries, and countries?
- Is it primarily the **tight legal framework** that makes it difficult for companies operating in that area to build up and use data necessary for Artificial Intelligence?
- Or is it a **lack of (proven) concepts** to successfully unleash the potential of Artificial Intelligence in the own environment?

We should have in mind that we are already in permanent contact with **AI applications** today. If we use a **digital personal assistant** such as *Alexa* or *Google Home*, we have access to AI applications. Anyone who receives support from *Google Translate* or the German start-up *DeepL* in **translating** will benefit from Artificial Intelligence. Whoever uses **facial recognition** systems utilizes AI algorithms. When radiologists have X-ray images and CT scans evaluated by computers, AI-supported **expert systems** are in action. In addition, **robots** are increasingly being deployed—and not only in production. Autonomous driving is another AI field of application that uses a robot as a driver. This makes it clear:

Artificial Intelligence has already arrived in our everyday lives.

With this book, we want to contribute that (even) more people understand and recognize **the potential associated with Artificial Intelligence**. At the same time, it is clarified which **framework** is necessary **for a responsible handling of Artificial Intelligence**. Finally, a convincing **AI journey for the corporate development of the AI potential** is presented. After all, one thing is for sure:

Artificial Intelligence will change the lives of people and companies—embedded in the possibilities of digitalization—even more sustainably than many can imagine today.

The book encourages to consider this topic seriously (at an early stage) and should help to identify and use sustainable value-adding fields of application—before others do. Above all, it is intended to arouse curiosity and interest in the various fields in which Artificial Intelligence can unfold its effects. It applies:

Artificial Intelligence will very quickly evolve from a nice-to-have technology to a have-to-have technology. After all, Artificial Intelligence is not a technology like many others, but a basic innovation that will penetrate all areas of business and life in the coming years.

It's good to be prepared for that.

Berlin, Germany — Ralf T. Kreutzer
Bad Wilsnack, Germany — Marie Sirrenberg
August 2019

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