

## Presentation Handout

### ”Digital Change in the Times of AI & Co: Understanding, Mastering Challenges and Shaping the Future“

windream.*CON* 2019

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#### 1. Situation description

Digital change is in full swing in most industries. The new technical opportunities created by the increasing importance of data generation and analysis as well as artificial intelligence are increasingly digitizing business models and at the same time putting established companies under pressure by new competitors in the IT sector. Therefore, understanding the peculiarities of digital change, new technologies and the new ways of thinking derived from them with regard to business models and market processing is of essential importance.

#### 2. Core contents of the presentation

##### A) Digital change

Digital change is not a revolution, but an evolution. And even the much-cited digital disruption of business models is nothing new and above all nothing bad, since only "creative destruction" can make room for new products to better satisfy customers' needs (e.g. Nokia 3210 vs. smartphone; music cassette vs. CD). On the way from "Online First" to "Mobile/Platform First" we have arrived at the beginning of the age of "AI First", in which the Internet will only be the basis, but not the core of new business models.

It is indispensable for companies to permanently deal with the changing target group needs resulting from technical innovations. And, above all, to analyse precisely and objectively what the actual needs of the target group are and how this can change the market definition (e.g. television or actually temporally and locally independent moving image entertainment and information? Driving a car or actually individually comfortable mobility?). In this process, however, the established market players usually encounter similar problems, which were already described in 1997 by Clayton M. Christensen in his book "The Innovator's Dilemma": Factors such as complacency, fear of the unknown market and possible cannibalization, shyness of investments, short-term profit thinking, preservation of the company's existence and - last but not least - lip service by management without any real belief in the change of the market lead to a late and mostly inconsistent reaction (e.g. German automotive industry in dealing with e-mobility and autonomous driving). But a lot can be learned from the shortcomings of some industries in particular, because most other industries are still facing the really dramatic upheavals.

On the other hand, the new competitors of the old-established market participants often do not have their own products, but often only offer a platform - which is extremely user-friendly due to the use of artificial intelligence - and also radically simplify access to the product range and distribution channels. They profit from every transaction or even just by capitalizing on user data (e.g. Amazon, AirBnB, Uber, Google). But even this so-called platform economy is only an

intermediate stage in the digital evolution. The decisive phase of the digital change of the future is that of artificial intelligence. And this offers an enormous opportunity for many companies to get a fresh start. All those who have missed the trend towards social media, new mobility and cloud computing can find their way back into the game by consistently focusing on the future topic of artificial intelligence. However, those who miss this decisive opportunity in the coming years will find it difficult to stay in the market.

B) Special features of the digital change in the times of "AI First".

### 1. The speed of technological development

The storage capacity of chips doubles every two years (Moore's Law). This is the basis for the rapid change of markets through the use of artificial intelligence, which was previously not possible due to the large computer capacity required.

### 2. The new possibilities of data acquisition, storage and evaluation

Consistent data generation and evaluation, along with experience in dealing with customers, is an indispensable success factor. The availability of more and more relevant data can result in new, target group-oriented and algorithm-based product and sales offers. Since communication with customers is becoming increasingly social and networked, the needs of customers can be identified early on and their purchasing intentions can be influenced - while at the same time being consistently evaluated with the help of AI.

### 3. The Future Fields of Sensor Technology, Artificial Intelligence and Robotics

Artificial intelligence can be used to simulate human-like intelligence, i.e. a computer program can be trained in such a way that it can work independently on problems and make decisions. These are essentially predictions and classifications that are made with known statistical and mathematical methods. The two most important subforms of machine learning are supervised and unsupervised learning.

The following important differences need to be taken into account in model design and model output assessment:

GESTÜTZTES MASCHINELLES LERNEN	UNGESTÜTZTES MASCHINELLES LERNEN (V.A. ÜBER TIEFES LERNEN)
BASIEREND AUF HISTORISCHEN DATEN UND REGELN	OHNE MENSCHLICHE EINGRIFFE UND REGELN
SCHNELLERER OUTPUT	WENIG TESTAUFWAND
VERGLEICHSWEISE WENIG TRAININGSDATEN	NEUE MUSTER IDENTIFIZIERBAR
AKTIONEN SIND NACHVOLLZIEHBAR	PROBLEMLÖSUNG VOM ENDE HER
VERGLEICHSWEISE WENIG RECHENLEISTUNG	JE MEHR DATEN, DESTO BESSER
AUFWÄNDIGER INPUT (IDENTIFIKATION, CODIERUNG)	HOHE RECHNERKAPAZITÄT NÖTIG
	VIELE DATEN NÖTIG
	KEINE INTERPRETATION MÖGLICH

With the Internet of Things as an application of Artificial Intelligence, physical and virtual objects work together in a networked infrastructure with the help of information and communication technologies. They are no longer the object of human attention, but support human activities imperceptibly. It is

then only a small step from artificial intelligence to human-like robotics. Artificial intelligence in combination with robotics will not stop at work, but will also significantly change our interpersonal behavior.

In order to be able to serve customer wishes as perfectly as possible, it is already possible today to track the behavior of mobile customers in real time. With the help of a customer app and small transmitters, companies can recognize, for example, that customers are in the vicinity of one of their branch offices and can send customers tailor-made advertising. The use of sensor technology can also revolutionize the entire shopping process (e.g. Amazon Go-Stores). It is therefore a question of tailor-made, situation-related solutions with the mobile customer right in the middle.

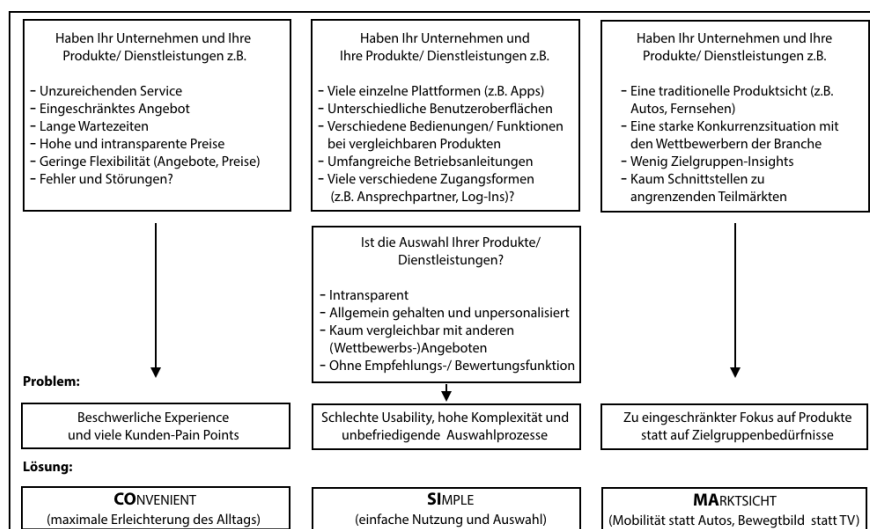
### C) Success factors for the successful management of digital change

The best business model, especially for young target groups, is no longer defined by the best partial products, but by a highly customer-centric and integrated ecosystem of all important functions to satisfy needs.

In the future, consumers and new competitors will therefore demand much more dynamism and more intelligent and comprehensive digital solutions from the established players.

The following skills are more important than ever:

1. Permanent rethinking of markets and business models from the point of view of target groups.
2. Customer experience above all (pre-sales assistance, individualized response to customer needs before rigid products, consistent experiences before internal processes, building digital relationships instead of product sales)
3. Resolution of online/offline thinking with focus on the "Mobile" interface
4. Consistent data collection and analysis using AI-supported cloud solutions
5. review of all products and services with regard to the COSIMA principle, i.e. convenient, simple, broad (with regard to market definition) and implementation of the reorientation with consistent use of artificial intelligence.



6. Cooperation rather than fighting old industry enemies
7. Strategic data management (acquisitions and product development)
8. Making knowledge, experience and business processes machinable
9. Permanent search for automation potentials
10. Short product life cycles (courage to disrupt/cannibalize oneself)
11. Strengthening human abilities again (communication, service)
12. Thinking ahead with the help of young, unconventional and creative employees
13. New leadership, i.e. building flexible and agile teams through trust and inspiration rather than guidance and arrangement.
14. Courage and consistency in implementation

3. Link list to videos and articles about the presentation:

<https://deepmind.com/blog/alphago-zero-learning-scratch/> (Alpha Go Zero)  
<https://blog.openai.com/openai-five/> (Five)  
<https://deepmind.com/blog/deepmind-ai-reduces-google-data-centre-cooling-bill-40/>  
(Google Cooling Centre)  
<https://www.youtube.com/watch?v=B8R148hFxFw> (Waymo)  
<https://www.youtube.com/watch?v=NrmMk1Myrxc> (Amazon Go)  
<https://www.forbes.com/sites/parmyolson/2017/11/16/ocado-robots-ai-grocery-delivery/#75814b123d36> (Ocado)  
<https://cloud.google.com/blog/products/gcp/how-a-japanese-cucumber-farmer-is-using-deep-learning-and-tensorflow> (Gurkenfarmer mit KI)

4. Reading materials related to the presentation:

- Innovator's Dilemma (Clayton Christensen)
- Schnelle Denken, langsames Denken (Daniel Kahnemann et. al.)
- Kollege KI (Stefan Gröner)

5. Contact

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