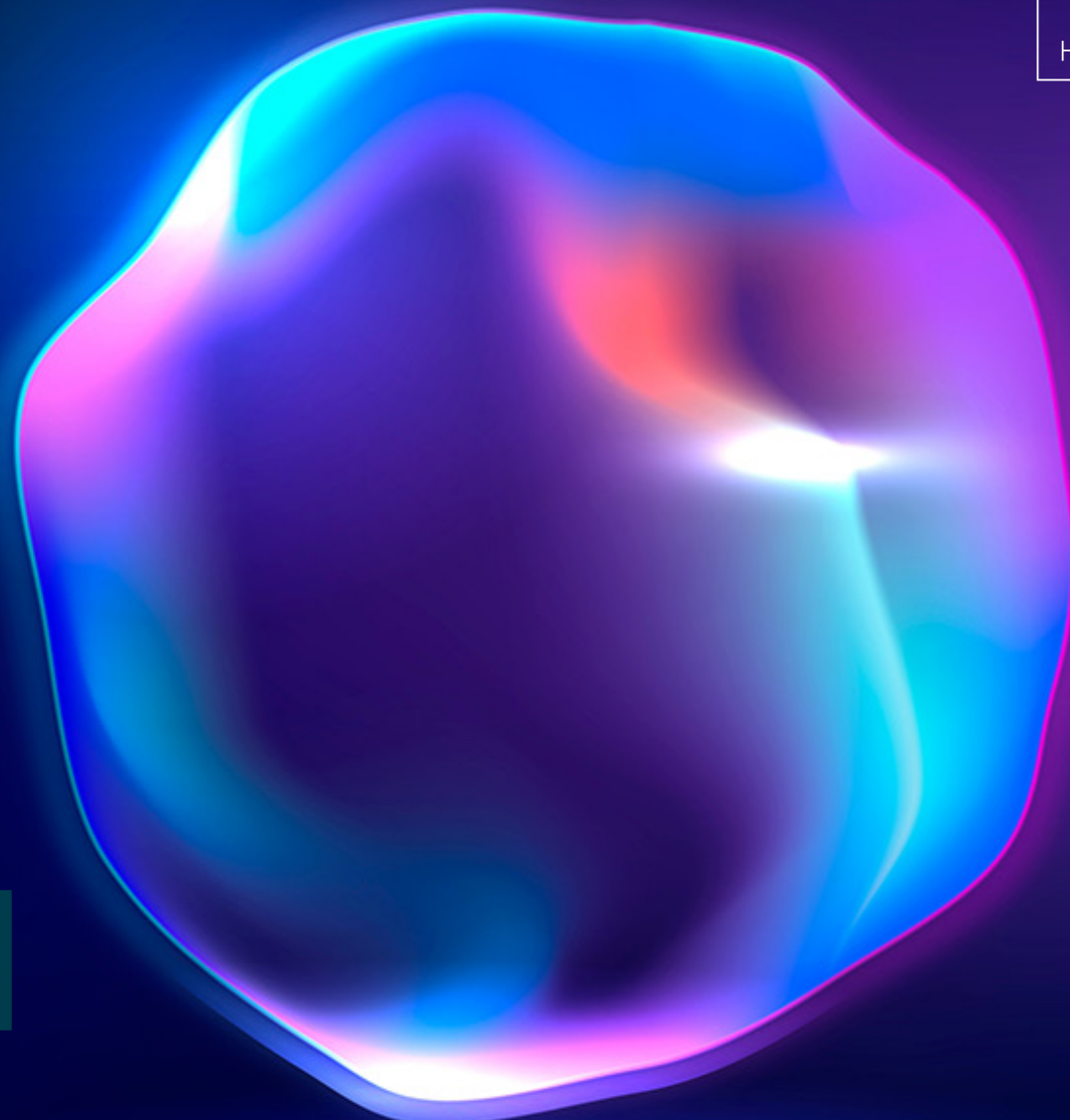


Future of
Communication

**ARTIFICIAL
INTELLIGENCE**

PART 1



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EDITORIAL

Dear readers,

Do you think that Artificial Intelligence-based language tools like GPT-3 will soon be writing all our texts? Will companies fire their press officers in a few years and replace them with chatbots? Will everyone soon be able to create convincing layouts with the support of an AI-based system? And will intelligent algorithms predict the wishes and attitudes of target audiences in the future?

This e-book outlines some of the ways in which artificial intelligence can already enhance marketing and communications activities, while also looking at how this will unfold in the future. It is certain that AI will play an increasingly important role in these fields. It is also certain that companies should get to grips with AI as soon as possible.

We have therefore highlighted a number of potential future scenarios for AI-supported corporate communications, extending as far as 2035.

As part of this we explore what is technically possible and where this can add value from a business perspective, without downplaying the risks and other uncertainties associated with the technology.

Naturally, we cannot predict the future. Our idea of what is to come is one possible narrative. But it is a narrative with a solid foundation, one that is based on today's trends and scientific knowledge and an understanding of technology - interspersed with a bit of imagination.

Our goal is to clearly define the relationship between the evolution of AI and marketing communications on a strategic level to ensure that AI, far from making communications less interesting or credible, can actually drive greater creativity and efficiency.

Happy reading!



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EXECUTIVE SUMMARY

Few other technologies attract as much scrutiny and attention as Artificial Intelligence. While many communications professionals have high hopes for AI, others have strong reservations. This e-book explains why, detailing how artificial intelligence can actually contribute towards the field of marketing and signposting a number of tools that are already available which can support editorial and creative work or support strategy development with clear insights.

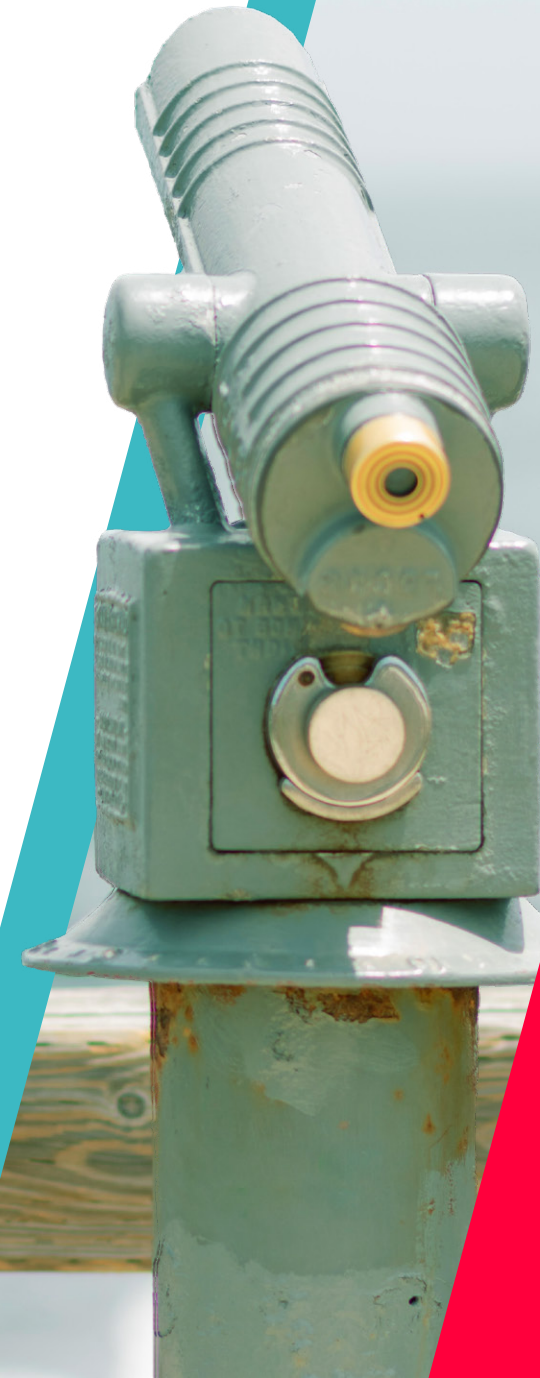
The second part of the e-paper demonstrates how the use of AI in communication will evolve.

- **2025:** Following an initial experimental phase, AI is now delivering real productivity gains. Prediction capabilities will be the greatest benefit.
- **2030:** AI triggers a massive wave of automation. Intelligent software agents will automatically operate digital channels and platforms. Communicators will become “puppet masters”, skilfully leveraging multiple intelligent software applications at the same time.
- **2035:** For more and more people, the metaverse, where the physical and digital worlds converge, has become an integral part of life. In this world, real people and digital avatars meet and communicate with each other. Thanks to their ability to interact in complex language, avatars can act on behalf of brands and companies, establishing a personalised dialogue that is specific to each user.

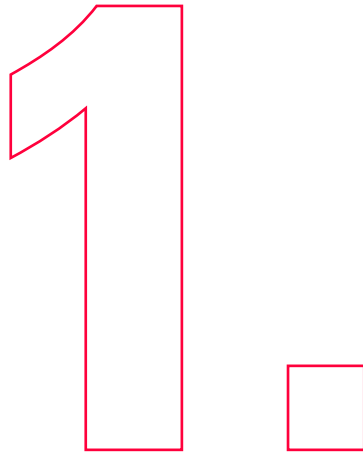
The opportunities of this innovation are numerous: processes become more efficient, exchanges with customers become increasingly personalised, and relevant topics can be identified and evaluated at an early stage.

However, the future scenarios also carry numerous risks: the use of AI can be accompanied by a loss of control. The prevalence of deep fakes can cause severe issues, placing target audiences at risk.

Software agents that behave in a way that is unethical can damage reputations. Similarly, if large sections of the public continue to reject the use of algorithms in the future, this will impede the uptake of Artificial Intelligence and comms professionals will continue to rely on slower, less efficient approaches based on human intuition.



ARTIFICIAL INTELLIGENCE – A DEFINITION



Most of us use AI, even if we don't explicitly refer to it as such, with applications such as Apple's Siri, Amazon's Alexa, and Netflix. What these companies and services have in common, is that they offer high utility value and are incredibly popular. The US computer scientist John McCarthy, who coined the term in the second half of the 1950s, foresaw this early on: "As soon as it works, no one calls it AI anymore". Indeed, as soon as it works, we no longer refer to it as artificial intelligence.

So far, there is no widely accepted definition of AI. According to John McCarthy's definition, a machine is intelligent "when it does something that would require intelligence in humans". Today, experts see artificial intelligence primarily as a tool for finding patterns in large data sets.

It differs from conventional software because AI can model complex problems. Whereas with conventional software the solution instructions for a task are clearly specified, AI learns to solve the problem based on the data. This enables it to deal with uncertainties and probabilities.

Did you know, even the cleverest algorithms are still weak in terms of AI? It replaces a single cognitive skill that previously required the intelligence of a human being. Weak AI is much the same as someone who excels in a particular field but offers little beyond that, whereas other humans are somewhat better rounded. In contrast, strong AI would have to

surpass or at least equal human intelligence in almost every area. It would need consciousness, environmental awareness, and feelings. Whether this will ever be possible is debatable among researchers and fortunately, self-determined robotic beings that aspire to world domination only exist in Hollywood movies and science fiction!

The most important advantages of artificial intelligence

- ∴ It can analyse large data sets efficiently and helps find new insights.
- ∴ AI recognises patterns and trends in data.
- ∴ With intelligent algorithms processes can be automated.
- ∴ AI thus creates freedom for creative activities.
- ∴ AI insights help to better understand customers.

AI – COLLECTIVE TERM FOR DIFFERENT METHODS AND DISCIPLINES



AI is not just AI: Artificial intelligence is a collective term for very different types of AI; the following methods can be deployed in marketing and communication activity:

:: Machine Learning (ML):

A collection of mathematical methods that search for patterns in data sets such as images, texts or spoken language. Machine learning derives decision rules from the patterns and stores them in a statistical model. The outcome is that the machine

learns from the data to perform its tasks more effectively, making decisions automatically as a result. Recommendation systems, search engine results or personalised news round-ups on social media are based on this technology.

Experts have identified several categories of machine learning, the most common of which is supervised learning. In this case, a computer learns to predict labels given by a human. To do this, the human feeds the algorithm with training data and training labels beforehand. For example, if it is to distinguish between dogs and cats, it must be trained with a large number of animal images, each of which must be labelled. With unsupervised learning, the algorithm must recognise patterns in the data set and categorise the data meaningfully on this basis.

:: Deep Learning: This method is a sub-area of machine learning. Deep learning uses neural networks to analyse large data sets. Deep learning algorithms are modelled on the neural networks of the

human brain. Artificial neural networks consist of different layers in which data is processed. They are called artificial neurons. In the beginning there is data, then it is processed, and finally there is knowledge. Deep learning can link what has been learned with new content with certain techniques, the machine can learn permanently, just like humans. Artificial neural networks can be used, for example, to learn about customers and their needs or to determine the best time for the next post. Deep Learning also allows the individualisation of the customer experience.

The following AI disciplines are highly relevant for communication:

:: Natural Language Processing:

This discipline gives software the ability to understand human language. Thanks to Natural Language Processing, computers can read texts or hear spoken language, and interpret it. Natural Language Processing is an important prerequisite, for example, for Alexa or Siri to respond correctly to human instructions.

:: Computer Vision: This discipline deals with the way computers see and understand digital images and videos. Thanks to machine learning, Computer Vision can process and analyse images.

THE RANGE OF SERVICES OFFERED BY AI IN MARKETING AND COMMUNICATION



Experts currently believe AI will have the greatest impact on the fields of personalisation and targeting. That said, there are already application scenarios in numerous other areas as well. In the context of corporate communication, algorithms can provide support on three levels:

- :: At a research and listening level, AI provides monitoring, surveys or regular competitor analyses
- :: At a process and organisational level, AI insights complement strategy and planning activities
- :: At a content management level, artificial intelligence creates content. It also assists with text creation, image search and document composition

From translation to image generation: What algorithms can do

Communications professionals want to communicate with impact and clarity. In this regard, AI is already delivering, albeit with some slight limitations. For example, the translation software platform '[DeepL](#),' delivers translations that still require some human intervention but which nonetheless can be useful in improving the overall quality of communications outputs.

Such tools can also save communications professionals a lot of time in their daily activities.

With the social listening tool '[Talkwalker](#),' communication departments can effectively track and monitor social media channels. By gauging audience sentiment, this allows for trending topics and customer needs to be identified, while offering an insight into the tone of such discussions among key target audience groups. '[Meltwater Audience](#)' provides information on how customers' target audiences communicate, on which channels they express themselves, on which topics and which formats they prefer. Software from '[Acrolinx](#),' makes it easier to write texts that are of interest to the target audience and that are easy to find and understand, while capturing the right tone of voice across all channels. The text generator software from '[Neuroflash](#)' can evaluate how a human-made text is received by consumers. In other words, it's not about AI writing the texts, instead, these digital tools provide actionable insights, from how to improve text from an SEO perspective, to identifying the key themes and brand or tone of

voice that will achieve maximum cut-through with a particular audience. Meanwhile, creation also benefits from AI, as deep-learning tools such as '[Nvidia GauGan](#)' can create photorealistic images from sketches, eliminating the need for a large portion of photoshoots.

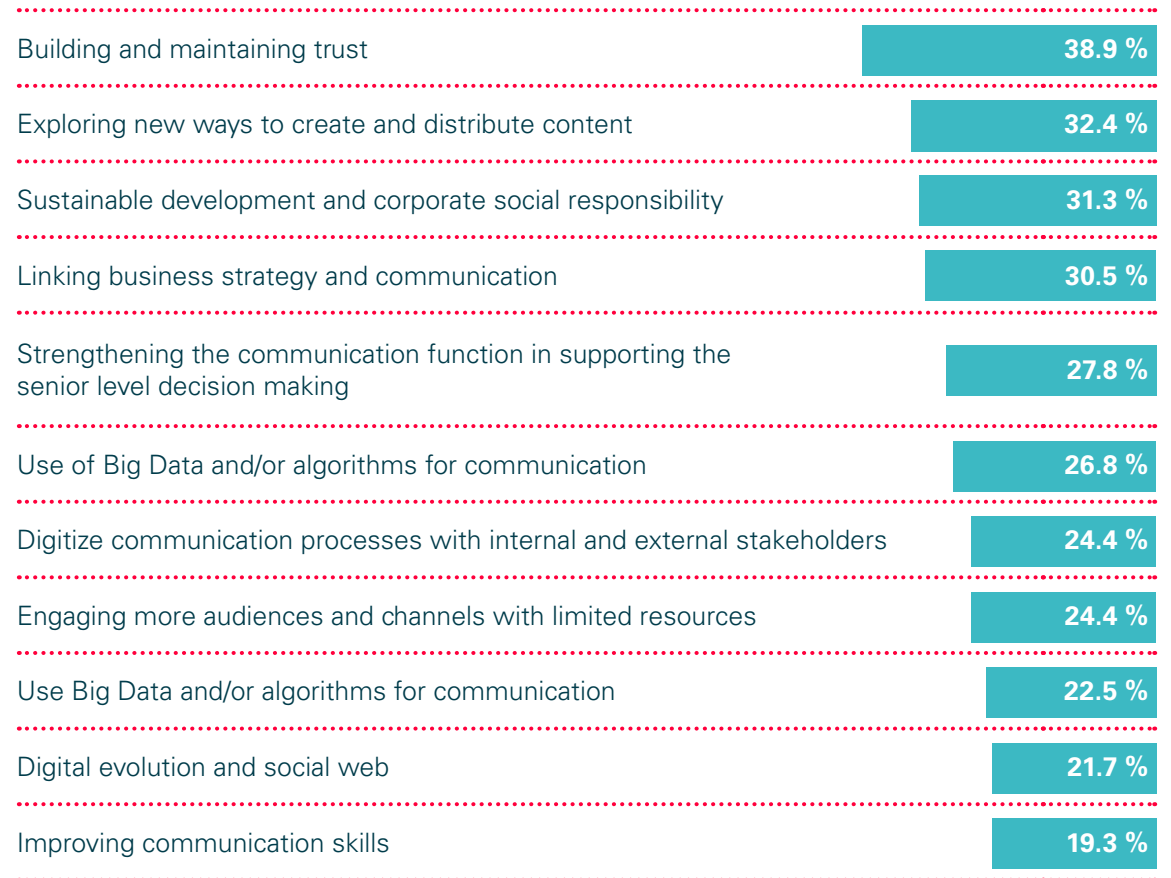
AI can automate and augment

The vast majority of AI applications to date have been aimed at automating marketing or communication functions. This automation is oriented towards selected processes and workflows in companies. Such automation enables us to work more efficiently, saving time for creative activities and improving the overall impact of our marketing or communication efforts.

Applications: Marketing automation, real-time bidding or look-alike audiences to build personas.

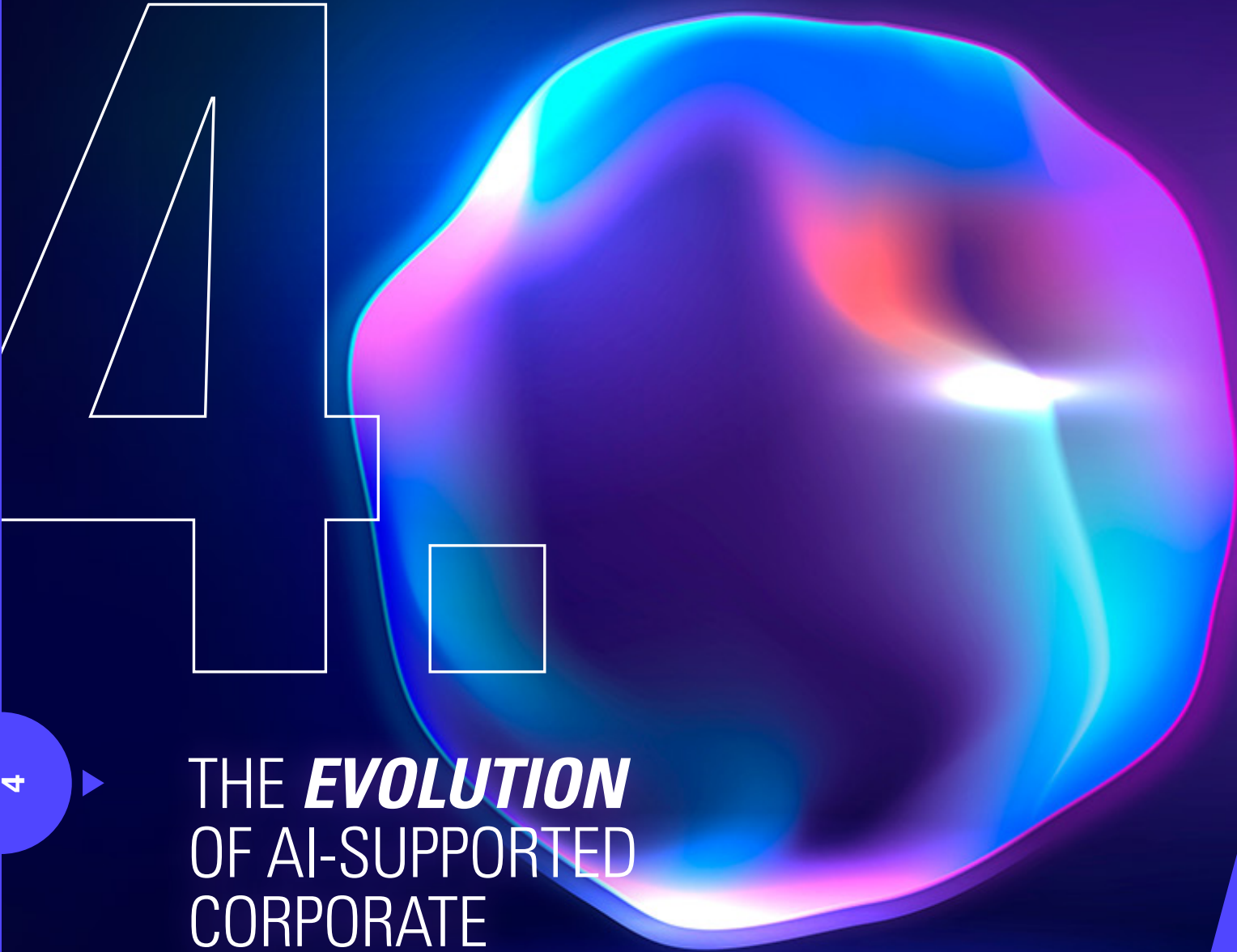
Machines can do so much more: they expand on what we humans can achieve. They are capable of augmentation: AI improves our cognitive performance and provides us with decision-making aids throughout the entire value chain. Its predictions, which are based on rational data analyses, underpin our gut feeling. The result is that we make better, more informed decisions. Thanks to augmentation, we gain new insights and can deliver greater innovation in terms of what we offer to customers. However, the number of such applications is still manageable.

WHICH TOPICS ARE PARTICULARLY IMPORTANT FOR COMMUNICATORS?



Current surveys confirm the issue of maintaining trust remains high on the agenda. Many of the relevant topics offer significant scope for the use of AI.

THE *EVOLUTION* OF AI-SUPPORTED CORPORATE COMMUNICATION



We hope to demonstrate the opportunities and risks that are inherent in these technologies. To do this, we have to take a look into the future of AI-supported communication in the form of the below scenarios. We do not claim to make an exact prediction, but our goal is to promote an understanding of the speed and extent to which artificial intelligence technologies will change corporate communication in the future. We start by examining what this looks like today, before looking at its journey over 5-year intervals.

We are taking steps forward and trying to creatively imagine the capabilities of AI and the evolution of the digital communication world.

TODAY

EXTENDED ANALYTICS IN A RAPIDLY EVOLVING WORLD OF COMMUNICATIONS

The world of AI-supported corporate communications is still at an early phase of its development. The applications are selective, not very standardised, and are often more experimental than productive. The first wave of workplace-ready solutions are emerging, especially where external access to large databases is possible. Therefore, most applications can be found in listening, sentiment, topic and target group analyses. Only a few companies have a clear strategic perspective for the use of AI in communication. The use of internal data often fails due to data silos and unclear legal framework conditions.

Central AI capabilities (widely available)

- :: Supervised learning with often high manual effort in training the models
- :: Highly specific applications for clearly defined use cases

Use in corporate communication

- :: Recognition of simple patterns in publicly available text data (e.g. improved sentiment analyses)
- :: Individual applications with experimental character, focus on analytics

Opportunities for corporate communication

- :: Pioneer status, competence development and experience gain
- :: Increasing the quality of analyses in the early stages of the communication process

Risks for corporate communication

- :: Cost-intensive experiments without a directly measurable benefit cause internal stakeholders to become disengaged with the topic of AI
- :: Gap between goals and real opportunities cannot be closed (e.g. no attractive employment opportunities for data scientists)

2025

PREDICTIVE DASHBOARDS IN AN AUGMENTED COMMUNICATION WORLD

AI applications are entering the productivity phase. “Augmented communication” is the promise of the fast-developing AI com-tech scene. Pre-trained machine learning models are integrated into existing dashboards and thus deliver real benefits in the everyday life of communications professionals. The increasingly advanced predictive capability of algorithms makes a significant difference. Communication becomes predictive. Simulation environments and predictive assistants complement the experience, creativity and gut feeling of communication professionals in the company. The reliance on large platforms is accepted, because the use of internal data sources remains complicated for communication departments.

Central AI capabilities (widely available)

- :: Machine learning based on big data
- :: Supervised learning dominates in most AI applications

Use in corporate communication

- :: From pattern recognition to predictive control of communication measures
- :: From individual, experimental applications to standardised dashboards for optimised communication processes

Opportunities for corporate communication

- :: Increased efficiency in internal processes and coordination
- :: Early identification of issues and dynamics in the target groups
- :: Provides a model that can be consistently applied by communicators

Risks for corporate communication

- :: Dependence on Big Data/AI providers: algorithms remain something of a mystery
- :: Sub-optimal outcomes based on imperfect AI recommendations, where strategic thinking is siloed and does not harness the creativity of an organisation

2030

COOPERATING AGENTS IN A HIGHLY AUTOMATED WORLD OF COMMUNICATION

To communicate successfully in the 2030's, where competition for attention is extremely intense, companies are now relying on cooperating software agents. These agents use complex digital channels and platforms dynamically, in a way that is situation-specific and personalised, thereby implementing companies' communication goals quasi-autonomously. This is made possible by advances in unsupervised learning with lower costs.

Central AI capabilities (widely available)

- :: Unguided learning with lower data volumes is the focus of innovation
- :: Advanced text generation models (NLP; GPT-X) and image/video generation

Use in corporate communication

- :: Complex use of all channels by specialised and cooperating communication agents
- :: Dynamic and situational generation of content and formats

Opportunities for corporate communication

- :: Competitive advantages in the war for consumer attention in the digital age through the successful deployment of various interconnected AI-based tools
- :: Communicators remain in the driver's seat but need to develop new skills in their role as "puppet masters", ensuring that all tools seamlessly interact with one another

Risks for corporate communication

- :: Algorithmic Armament & Acceleration: that AI-based tools can evolve beyond their original intended uses into something more dangerous
- :: Loss of control, lack of transparency and deep fakes are unsettling
- :: Reputational damage due to rogue algorithms

2035

TRUSTWORTHY AI IN A COMMUNICATION LANDSCAPE THAT HAS BEEN TRANSFORMED BY THE METAVERSE

By 2035, we predict the digital infrastructure for communication will have changed significantly. The digital and physical worlds will have merged to a major extent, while augmented reality will have replaced the smartphone as the primary device. The internet of today has expanded into a three-dimensional space. A large amount of social interaction and communication takes place in this “metaverse”, where real people and digital avatars meet. These avatars are based on a combination of machine learning models and rule-based AI. They are increasingly perceived as persons in their own right. They are capable of complex linguistic interaction, demonstrate attitude and represent brands and companies. On this basis, the entire communication process of companies is highly personalised and dialogical. Communicators focus on the strategic guidelines of communication. However, with the increasing complexity and performance of ever more powerful AI systems, the degree of their rejection by a large part of the population is also increasing. Companies must therefore manage the balancing act of being successful in the new world of communication without alienating critical target audience groups.

Central AI capabilities (widely available)

- :: Focus on combining machine learning and rule-based AI (“hybrid AI”)

Use in corporate communication

- :: High degree of personalisation of communication processes (1:1)
- :: AI systems as proxies for the company in different arenas
- :: Avatars are perceived as independent persons in the “metaverse”

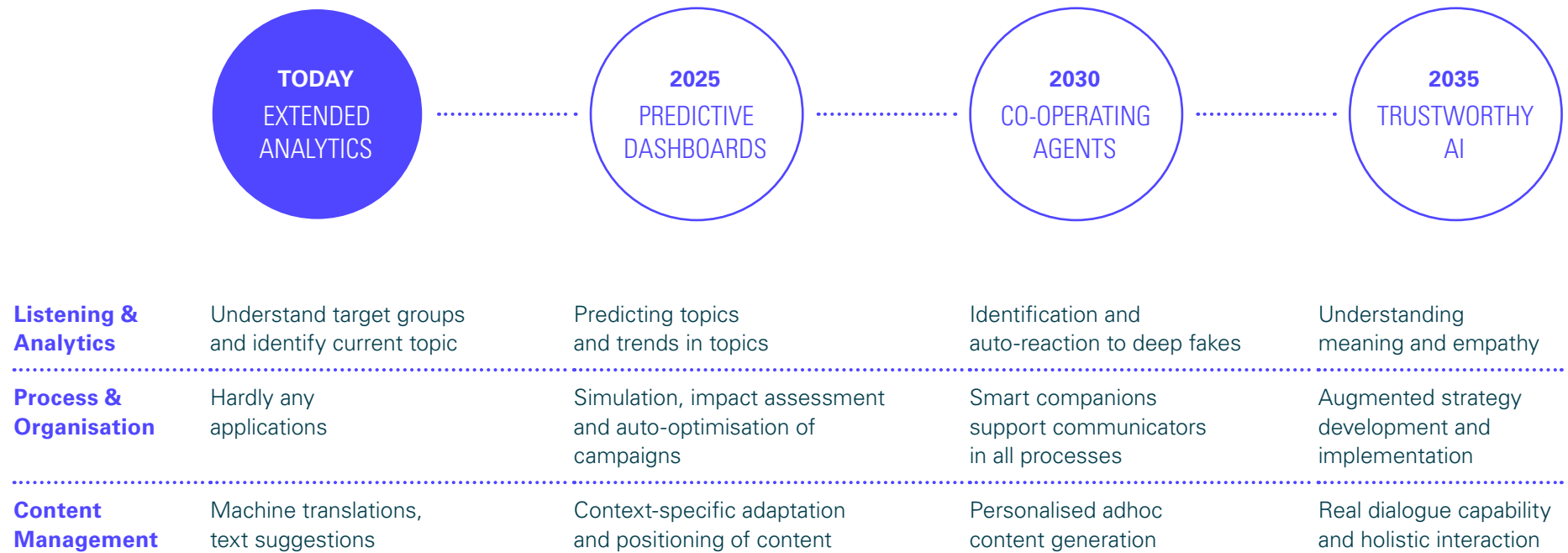
Opportunities for corporate communication

- :: Deep connection to each actor through perceived value-creating communication and interactions
- :: Communicators focus on strategy and long-term foresight of issues

Risks for corporate communication

- :: Increasing rejection of AI in larger parts of society leads to strong polarisation, which could alienate certain groups that are opposed to AI

AI-SUPPORTED CORPORATE COMMUNICATION: FROM THE EXPERIMENTAL PHASE TO TRUSTWORTHY AI



HURDLES ON THE WAY TO AI SUPPORTED COMMUNICATION

5

There is often discussion among professionals about the use of AI in communication and marketing, although few actually take advantage of the opportunities that it can offer.

Only eight per cent of companies use AI in their branding on a daily basis, according to a recent study carried out by the SRH Berlin University of Applied Sciences. Although 45 per cent of communicators in a survey conducted by the FAZ Institute see AI as an important analytical

tool for the future, only one-third are actively investigating ways to bring it into use.

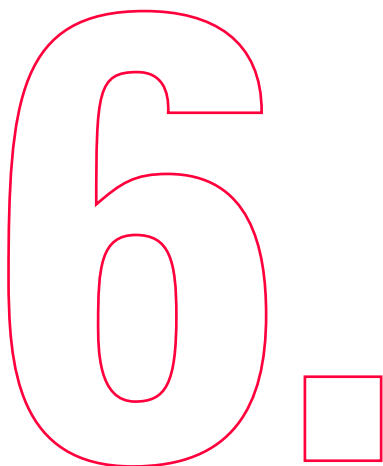
Even among digital pioneers, only isolated AI solutions are in use since these are not networked with each other. Why is that? The reluctance is not primarily due to the fact that technology is still relatively nascent. In fact, a combination of scepticism about technology, a lack of know-how, and a shortage of available data are holding back the use of AI.

Marketing and communication also require a qualitatively and quantitatively meaningful amount of internal and external data. In addition, AI projects require certain data structures and standards. Probably only a small cross-section of communications professionals is able to judge whether their data meets all the necessary requirements. Hence, they need to work closely with data experts if they want to use AI in a way that is meaningful and creates value.

The biggest hurdles for the deployment of AI:

- ❖ An insufficient amount of data or unstructured data
- ❖ A lack of opportunity for (legitimate) data collection and data comparison
- ❖ A lack of opportunities of integration of data
- ❖ Uncertainty and scepticism towards new technologies (e.g. because of data security and protection)
- ❖ Staff lacking the knowledge to select and deploy potential uses

THREE TIPS FOR THE USE OF AI



The best way to achieve an overarching AI strategy is in stages. Ask yourself fundamental questions in advance: What do you want the algorithms to do? What goals do you want to achieve in the short term? Where do you want communication to be with the support of AI in five or ten years?

- 1. Start with singular AI applications:** Identify specific application scenarios that can be automated with the help of AI. Select tasks that belong to the particularly tedious routines in your teams. Use standard tools that can take over these tasks. For example, check whether you can automate reporting, recurring analyses or monitoring with AI in a way that saves resources and is equally as efficient.
- 2. Network with other divisions:** Have you successfully implemented the first stand-alone solutions and gained initial experience? As a next step, you should network with other divisions. Make the most of experts in your company who have probably been working with AI in other departments for some time. Participate in the development of an overall AI strategy for your company.
- 3. Provide targeted training for your communicators:** Only a minority of employees are likely to have sufficient AI and data skills. Those who are supposed to decide on the types of applications, methods and procedures of artificial intelligence must also be familiar with them. Therefore, you should combine the AI projects with targeted further training opportunities. Ideally you can bring in AI specialists from other areas.

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