

# **Technological advances and the future of corporate and marketing communication**

An international foresight study among experts from different professional backgrounds

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## **Keywords**

Marketing, corporate communication, technology, foresight, artificial intelligence, VR, human computer interface, blockchain.

## **Abstract**

This study strives to shed light on the potential impact of technological advances on specific aspects of corporate and marketing communication. It is based on an international survey among experts from different professional backgrounds ( $n=470$ ) and a follow-up group discussion of the survey results with selected media industry experts to identify required actions by companies to cope with various aspects of change. Our foresight approach with a time horizon until about 2030 suggest that artificial intelligence (AI), virtual, mixed, or augmented reality, new human machine interfaces in general as well as internet of things (IoT) and blockchain will have the most substantial effects alongside with the increasing complexity and need for integration of various communication activities. Furthermore, content creation will become automated to a considerable extent in this decade and thus will require process innovation to get it organized. As a result, companies should build internal expertise on AI at decision making level to avoid dependencies on external consultancy and set-up a proactive partnering with suppliers of the other key technologies.

## **Introduction and rationale**

Technological developments in areas such as VR/AR, other human-machine interfaces, artificial intelligence, internet of things, and blockchain are assumed to have a substantial impact on the way companies organize marketing or corporate communication (e.g. Accenture, 2019; Deloitte Insights, 2019; Lewnes & Keller, 2019; McKinsey Global Institute, 2013). These developments also affect the relationships of the involved parties like the media, and the overall communication goals (e.g. Deloitte Insights, 2019; Grossberg, 2016; Zerfass, Verhoeven, Moreno, Tench & Verčič, 2016). Furthermore, corporate and marketing communication will not anymore be clearly distinguishable from other tasks within organizations. Thus, this study investigates the impact of different emerging technologies on five aspects of change in marketing or corporate communication respectively: 1) a company's communication and marketing goals or strategies, 2) the organization of communication and marketing within a company, 3) the structure of external communication and marketing services, 4) the way companies will communicate with their stakeholders and 5) the creation of marketing and communication content.

In order to better understand these developments and their consequences on media and communication management as well as related education and training, we set up an international foresight study based on experts' opinions. It shall shed light on how technological advances drive different aspects of change and on which time scales. The article hence adds an encompass-

ing and comparative view to more specific elaborations of the impact of a particular trend or technological development and to more focused studies on singular aspects of change. As the study is international it also elucidates differences across the globe. Furthermore, a broad variety of experts with regards to their professional background will allow to derive multi-perspective or interdisciplinary insights regarding the impact of new technologies on the above mentioned five aspects of change.

We will first present a structured overview on the major trends affecting marketing and corporate communications respectively - as currently discussed in the literature - and proceed to a more specific focus on the role of technological advances therein. Technologies will be systemized based on extant research thereon. Further, a model discerning the different aspects of change in marketing and corporate communications will be proposed (including the role of media therein). We will then present the methodology of the foresight exercise bringing together major drivers with the specific aspects of change and proceed to the main results. An emphasis shall be given to differences in experts' opinion about future developments in terms of relevance and timing. We will conclude with an outlook on what the result could mean for industry as well as for media management scholars in research and education.

## **Trends that influence the future of corporate and marketing communication**

In the literature as well as in industry practice, various trends are discussed, that will continue to influence how companies orga-

nise corporate and marketing communication in their own - sometimes quite peculiar ways - in the coming years, to remain competitive. Technological advances are among the most important and much-discussed factors or trends respectively (e.g. Argenti, 2005; Forbes Communications Council, 2018; Wiencierz, Berger, Röttger & Wietholt, 2017; Zerfass et al., 2016; Quint & Rogers, 2015).

A factor that becomes even more important with new technologies is transparent and authentic communication on the part of companies (Deibert, 2017). Also, other drivers are not independent but rather interacting in various ways, like for example increasing consumer expectations with respect to individuality (Carl & Lübecke, 2018). According to other surveys (e.g. Economist Intelligence Unit, 2016), the personalization of customer experiences at numerous touchpoints will be a key marketing task in the future (see also KPMG International Cooperative, 2018).

However, it is becoming increasingly difficult to gain the attention of customers for one's own brand. Brands therefore use new methods of communication such as immer-

sive storytelling or video content to involve consumers more intensively (Harvey Nash & KPMG, 2018; Tosun & Donmez, 2019; Wyzowl, 2019). Moreover, the increased use of mobile and connected devices is changing the way companies generate and distribute content (Hutchinson, et al., 2018; Leitherer, 2018).

Finally, in the course of globalisation, the international environment in which companies operate is bringing about changes in corporate and marketing communication, while at the same time offering new opportunities (Berger, Röttger, Vogel, Wiencierz & Wiesenbergs, 2016; Naghi & Para, 2013). In figure 1 we summarize the dominantly discussed general trends that are considered to be drivers of change, of which technological advances are but one. As a basis for that we considered the top hundred google results (dominated by agency and industry associations reports) related to "trends", "developments", "future", "foresight" or "outlook" on "communication", "media", "public relations", "PR" or "marketing" in German as well as English language over the years from 2015 to 2019.

<b>Technological advances</b> e.g. <i>Artificial Intelligence, Human Machine (Particularly Voice) Interfaces, VR/AR/Mixed Realities, IoT, Blockchain, general advances in computing/miniatrurisation</i>	<b>Increase consumer/stakeholder requirement of authenticity and/or transparency</b> e.g. <i>proofs of facts, related to companies and products, real existence of followers</i>	<b>Increasing demand for embedding brand communication in rich enticing stories</b> e.g. <i>immersive storytelling, gamification, humanizing brands</i>	<b>Increased privacy concerns</b> e.g. <i>concerns about companies collecting and misusing data, leakage of personal information</i>
<b>Globalization and internationalization</b> e.g. <i>global markets, international cooperation, global procurement of goods and services</i>	<b>Increasing complexity and needs for integration of communication activities</b> e.g. <i>seamless / transmedia communication, roles of social media</i>	<b>Increasing demand video content and its formats</b> e.g. <i>transition from text to video, live streaming, user-generated content</i>	<b>Personalization, individualization and mass customization</b> e.g. <i>individual advertising feeds and communication, data- driven storytelling, context sensitivity</i>

Figure 1. Trends that influence the future of communication.

## **Systemizing areas of technological advances**

In our study we want to focus more specifically on the technological drivers of change. Emerging technologies are increasingly changing the way companies are organized. In an extensive desk research, we started with general technology outlooks (e.g. McKinsey 2013; Gartner, 2017 and 2018a/b/c; The CMO Survey 2018; KPMG International Cooperative, 2018; Deloitte Insights 2019; Accenture 2019), and further extended our research in the direction of general technological advances (big data, public data security regulation, 5G, cloud computing), Artificial Intelligence, Human-Machine Interfaces, Virtual/Augmented/Mixed Realities, Internet of Things (IoT), and Blockchain Applications that stabilised in the course of the desk research as mutually quite exclusive and at the same time collectively exhaustive categories (see also figure 2).

We identified Artificial Intelligence as one of the key drivers discussed with respect to change in corporate and marketing communication. AI is considered to influence various areas in organizations, including corporate communications and marketing (Ransbotham, Kiron, Gerbert, & Reeves, 2017). According to the European Communication Monitor (Zerfass et al. 2019), companies worldwide believe, that AI will change the whole field of communications dramatically. AI applications presumably will offer companies various new solutions, like Deep Learning that uses large amounts of data to recognize patterns that can help to understand customer behavior (Brynjolfsson & McAfee, 2017; Gentsch, 2018). Based on this, assumptions can then be made that served as a basis for our foresight analysis.

Another important trend is the progress in Human Machine Interfaces (HMI). HMI refers to the communication between human and machine, i.e. the process in which the user's input is translated as a signal for machines and then delivers the result desired by the user (Ghumare, 2019). According to Deloitte Insights (2019), the communication between human and machine has become more and more intelligent in recent years due to advanced technologies. It has developed in such a way, that the control of machines or devices respectively is no longer carried out by hand alone, but speech (Natural Language Processing), gestures, and mimics can also be used as a user interface. This makes human-machine interaction more natural and thus, promotes new ways of applications that are subject of the current study (Deloitte Insights, 2019; Reply, 2019).

In addition to voice assistants, Virtual (VR) and Augmented (AR) Reality applications' use has intensified (Bitkom, 2018). The first creates a virtual environment for the viewer that is detached from the real environment. Special glasses with small screens (Head Mounted Displays) enable a 360-degree view, whereby the viewer has the feeling of actually being in a virtual environment. In contrast, AR means an extension of reality by integrating virtual three-dimensional elements into the real environment. A real-time transmission enables the viewer to interact with the projected objects. Mixed Reality (MR) is a merger of the real and the virtual world, either by enriching the real world with virtual, digital objects or by fading real objects into a virtual environment. This allows physical and digital objects to coexist and interact in real time (Borgmeier, Grohmann & Gross, 2017; Deloitte, 2016). According to state-

ments from consultancies and in scientific literature, the potential of these technologies can be particularly seen in the marketing and sales departments of organizations. The use of VR can ensure a longer retention time for instance through increased interactivity and make the product presentation significantly more attractive, because the user is completely immersed in the virtual world (KPMG, 2016; Pfaff, 2018). Similar effects have already been shown for AR applications in the context of brand perception and buying intentions (Haumer, Kolo & Reiners, 2020). However, VR/AR applications will be used in other areas of the company as well. In general, communication can be improved and collaboration in the enterprise can be greatly facilitated through enhanced environment applications such as meetings with other business units. VR environments can create an improved feeling of presence and proximity compared to videoconferencing and thus improve meeting outcomes (Campbell et.al., 2019; Deloitte, 2016). In addition, VR/AR is used for virtual showrooms and for visualization in order to convey vivid impressions of distant objects to the viewer or to support online shoppers in selecting suitable products by transmitting virtual changing rooms on their smartphones (Bitkom, 2018; Deloitte, 2016).

Another emerging technology that is assumed to have a big impact on corporate and marketing communication is the Internet of Things (IoT). According to Gartner's Hype Cycle (2018), this technology will continue to have a significant influence on the organisation of companies and the way they work with stakeholders in the coming years. IoT is defined as, "[a]n open and comprehensive network of intelligent objects that have the capacity to auto-organize, share informa-

tion, data and resources, reacting and acting in face of situations and changes in the environment" (Madakam et al., 2015, p. 165). IoT is strongly promoted by the advances in sensors technology, which can be used to collect data and information about various consumer behaviours. Ordinary objects such as refrigerators, tables, food, etc. can be individually addressed, e.g. by embedding chips and thus make it possible to monitor all processes in one's own home. Thus, this technology will presumably change the way organisations communicate with customers and stakeholders because it will drive communication away from a human-to-human activity towards communication within data networks that follow all new rules of machine-to-machine communication (M2M) and optimization of individual benefits.

Finally, blockchain technology, as the underlying technology of digital currencies such as Bitcoin, has increasingly influenced and changed the way companies finance and manage their businesses. In respective publications, the discussion about blockchain technology shows that in recent years extended application areas have been considered. Blockchain can not only be used in the financial sector in connection with the crypto currency, but also has a great potential in areas such as M2M communication, decentralized autonomous organizations and smart contracts (Kaulartz, 2016; Tapscott & Tapscott, 2018). For marketing and sales, the blockchain technology could bring significant advantages in various aspects. It enables micropayment in real time, which can be used by marketers to create an incentive for customers to transmit valuable customer information. Companies no longer need to go through third-party providers such as Google or Facebook, but pay the customer directly,

e.g. for calling up an advertisement. In this way, the interaction between companies and customers could change fundamentally. The customer will gain more control over his data and interact differently with advertising. This enables companies to learn more about how customers behave, and to align their marketing activities accordingly. For sellers, the use of blockchains could result in greater transpar-

nology will establish itself in the fields of communication, marketing and advertising is thus another interest of knowledge of the current study.

The mentioned specific technological advances are accompanied by general improvements in data processing, storage (e.g. cloud computing) and transmission (e.g. 5G) as well as further miniaturization (see the following figure 2 for an overview).

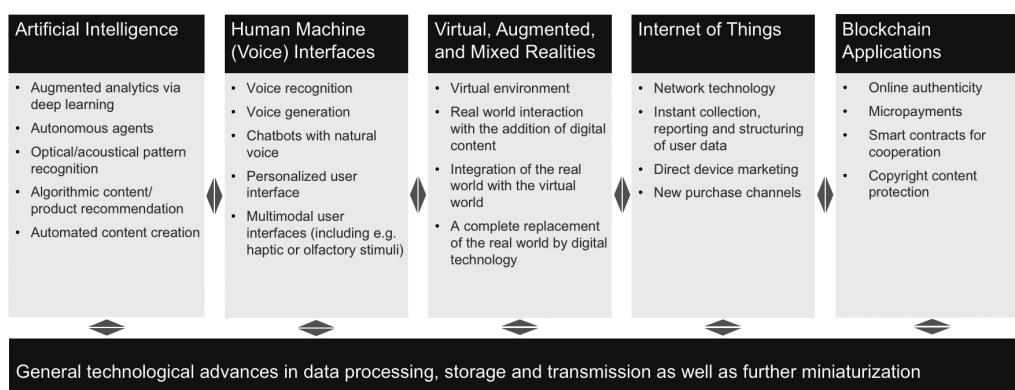


Figure 2. Systemizing Areas of Technological Advances.

ency regarding the solvency of customers. The latter enables transactions that would otherwise not have been possible due to a lack of trust or risk. However, it should be mentioned that precise queries also make it less likely to discover people or partners, who do not fit a particular profile, but are open to change and adaptation (Asharaf & Adarsh, 2017; Harvey et al., 2019; Tapscott & Tapscott, 2018). Despite the promising potential of this technology, it can also be seen that many companies are reserved in this area. According to The CMO Survey (2018), only 8% of the companies consider the use of blockchain technologies in marketing as moderate or very important. The extent to which the blockchain tech-

## Aspects of change in marketing and corporate communication

To understand the extent to which technological advances impact corporate and marketing communications and in order to fully reflect the breadth of change, different aspects of communications need to be considered. Here, stakeholder management is regarded as the starting point and provides the foundation for corporate communication. The stakeholder approach emphasizes that companies have relationships with various external and internal persons and groups, who influence the activities of a company and its economic performance.

The focus of this approach is on communication with stakeholders, which is why in this context a focus is on communicative relationships and social network management. Due to the fact that the environment of companies has constantly changed over the years, additional groups such as global competitors, media, governments, etc. have to be considered in addition to the traditional stakeholders such as customers, suppliers, employees and owners (e.g. Freeman, 2010). Furthermore, the realm of corporate and marketing communication today extends to diverse social media platforms.

De la Rey van der Waldt (2004) assigns the sub-disciplines managerial communication, organizational communication, public relations, and marketing communication to corporate communication. According to Van Riel & Fombrun (2005), the typical structure of communication in a company includes investor relations, public affairs, marketing communication, internal communication and issue management. Hence, the understanding of corporate communication is directed towards a comprehensive coordination and

integration of all communication activities of the company. Based on this, we try to trace the effects of technological advances on various aspects of a company's communication to be able to comprehensively map the changes in communication. Starting from the strategic level, the change in the organization of internal and external communication and marketing activities is also considered. In addition, changes in communication with stakeholders and markets will be described as well as the way in which the production of communication/marketing content has developed. Accordingly, the five aspects of change in corporate and marketing communication as given in figure 3 are discerned.

## Overall methodology and composition of survey responses

The study follows a multi-step approach that consisted of three different phases.

In phase 1 we conducted a kick-off workshop with communication experts

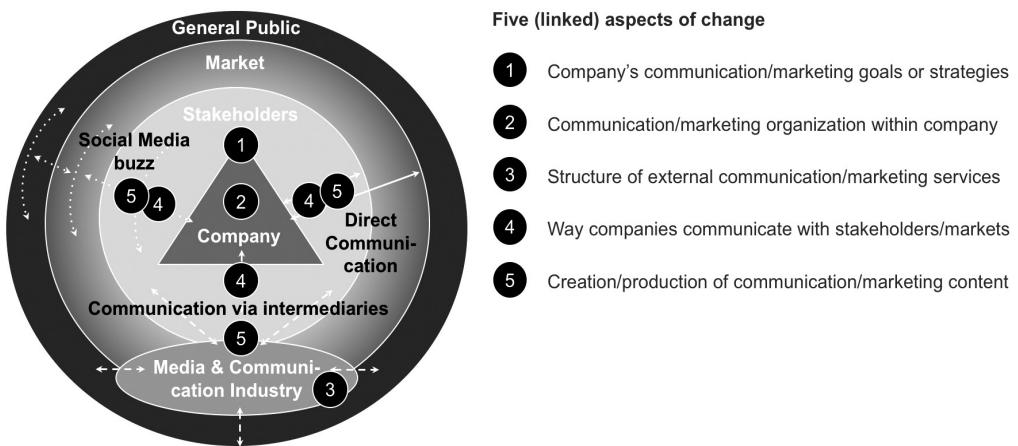


Figure 3. Aspects of change in marketing and corporate communication.

to test and refine our questionnaire. In this phase, the areas of technological advances have been derived from current industry reports (e.g. McKinsey 2013; Gartner, 2017 and 2018a/b/c; The CMO Survey 2018; KPMG International Cooperative, 2018; Deloitte Insights 2019; Accenture 2019) as well as from a systematic google analysis using advanced google search operators (e.g. "AND", "OR" and "SEARCH TERM" to identify technologies that are specifically applied in a business context.

In the second phase, we identified experts in respect to various emerging technologies via a keyword search on LinkedIn. We managed to identify n=922 experts from all over the world with different professional backgrounds and levels of decision-making. We contacted those experts via direct message (n=528) and e-mail (n=394) and sent out our questionnaire after they have agreed to participate in our survey. With this methodological approach, we managed to receive a number of n=470 replies and n=155 fully completed questionnaires.

Finally, in a third phase, the results of the survey were discussed with a sample of experts and an outlook on corporate as well as marketing communication was elaborated (see also figure 4 for an overview of the overall methodology).

The fully anonymized survey covered a characterisation of the professional context of the participants, a rating of diverse technological as well as non-technological drivers of change in communication, and a major part on specific hypotheses of what could happen in certain periods of time driven by several technology areas.

We received 155 completed questionnaires with a distribution of the expert sample in terms of demographic information as follows:

- Gender: "male": 59%, "female": 34%, "other" or not specified: 7%
- Age: under 35: 43%, 35-44: 33%, 45-54: 19%, over 54: 5%,
- Country of residence: Germany: 39%, Rest of Europe: 8%, Americas: 33%, Asia: 8%,
- Other or not specified: 12%

Concerning the professional background and the level of decision-making the following distributions can be seen:

- Professional background: "general management": 19%, "marketing": 15%, "technology": 14%, "media": 13%, "corporate communication": 9%, "academic": 8%, "other" or not specified: 22%
- Level of decision-making: Leading from a "board level": 17%, "leading a department": 17%, "leading a team": 29%, "other" or not specified: 37%.

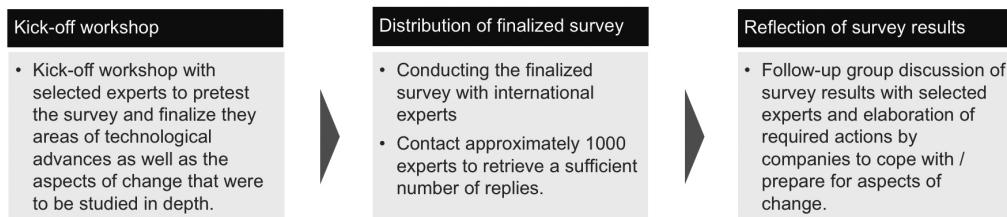


Figure 4. Overall methodology of this foresight study.

Further, the expertise of the respondents related to technological advances is of relevance as this is one factor influencing the perspective on the presented questions and hypotheses respectively. Hereby the expertise of most experts was rather focused on a sub-set of technologies taken into account. A high level of expertise/involvement in the development or application of the specific trend was evident in cloud computing applications (29%) and human-machine-interactions (20%). The involvement in AI (16%), IoT (14%) and VR/AR/MR (13%) was in midfield. The lowest level of involvement can be seen in the technological trends 5G (10%) and blockchain applications (6%).

## Main results and differences in experts' opinions

The ranking of general drivers of change in marketing and corporate communications (including the overall relevance of technological advances) showed that technological

advances have various impact on the five aspects of change discerned in the study (see figure 5). Most impact is seen on the aspects "structure of external communication/marketing services" and "creation/production of communication/marketing content". In addition, figure 5 exhibits that with regard to the aspect "structure of external communication/ marketing services" the factor "technological advances" has the greatest impact compared to the other factors presented in the survey.

In relation to the several technological trends and their evaluation as drivers of change in marketing and corporate communications (see figure 6), it can be seen, according to the experts' evaluation, that current technological advances will have a different impact on each of the five aspects of change. It turns out that AI has the strongest impact on the aspect "company's communication/marketing goals or strategies", "cloud computing applications" on the aspect "communication/marketing organization within company", AI on the aspect "structure of external communication/market-

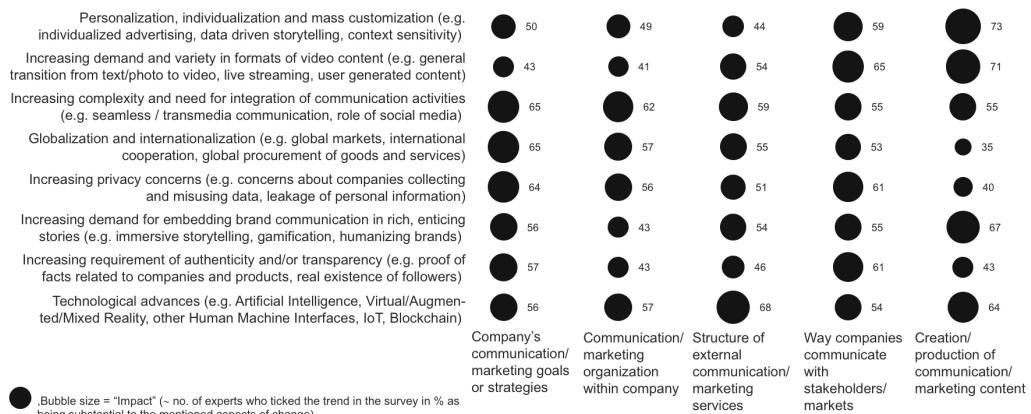


Figure 5. Ranking of drivers of change in marketing and corporate communications.

H9: Virtual influencers with specific personalities (e.g. beliefs, looks) designed according to a company's image will be widespread.

H10: A majority of content producers will use Artificial Intelligence to produce stories in a fraction of the time compared to human producers.

H11: Virtual influencers will help a majority of companies to significantly reduce the costs of brand and/or product communication.

H12: AI-based "bots" will allow first innovative companies to communicate to all stakeholders in a consistent corporate identity-aligned language.

H13: Among a majority of companies AI-based "bots" that direct and offer work-related information personalized for the employee are widespread.

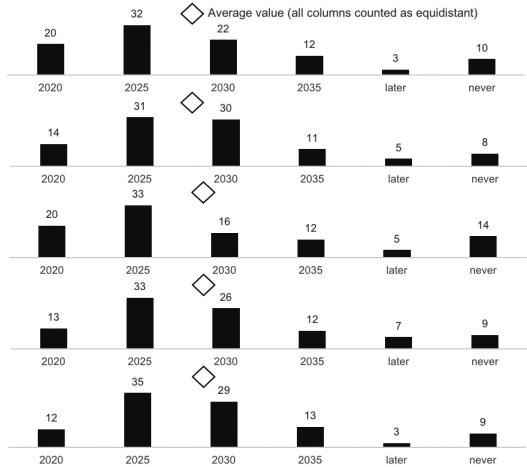


Figure 6. Ranking of several technological advances as drivers of change in marketing and corporate communications.

ing services", AI and 5G on the aspect "way companies communicate with stakeholders/markets" and VR/AR/MR on the aspect "creation/production of communication/marketing content". Blockchain applications are seen as having less impact than the other technological advances, with a particular emphasis however on the "way companies communicate with stakeholders/ markets".

Figure 7 gives an example on how we tried to shed light on even more specific aspects of change driven by new technologies. A series of hypotheses were to be answered with respect to their realisation. Herbey different levels of the diffusion of innovations were offered (i.e. by qualifying the number of adopters like "some", "a majority", "almost every", ...).

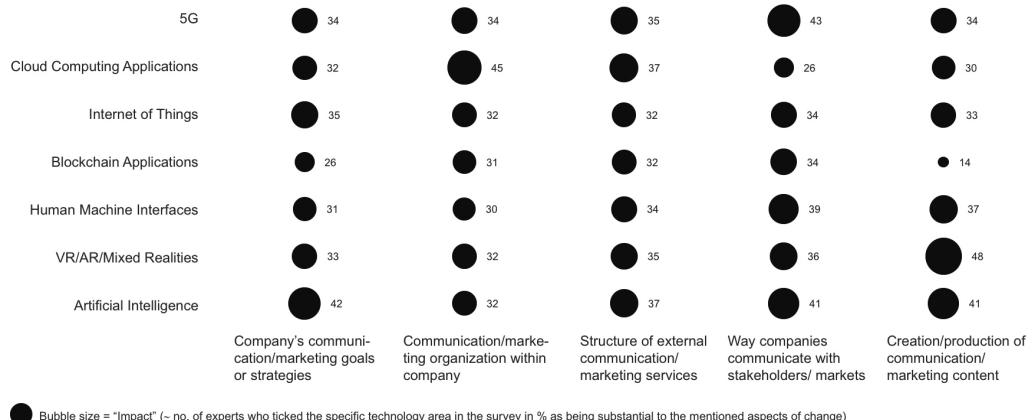


Figure 7. Example for hypotheses on future developments to be judged by experts: AI (Bots, Virtual Influencer & Content Creation)

Finally, this study reveals some striking differences in respect to judgements of the impact on technology on corporate and marketing communication between experts with different professional backgrounds, levels of decision-making and country of origin. Whilst 39% of general managers believe that a majority of customers will communicate with humanized 'bots' which address the individual customer via natural language by the year 2020, only 14% of marketing and communication professionals and 18% of academics believe that this will happen this fast. In respect to experts on different levels of decision-making, significantly more board/department leaders (59%) see an impact of technological advances on the structure of external communication/marketing services in comparison to experts, who lead a team (40%) and other experts (35%). Regarding different countries of origin of our experts we find that only 7% of German experts believe that a majority of companies will use intelligent voice assistants to improve personalized communication and build more intimate relationship with their customers and other stakeholders by the year 2020. On the others side 34% of international experts believe that this will happen to this date. Moreover, 10% of German experts think that this technology while never be used on a broad basis whilst only 4% of international experts share this belief.

## **Conclusions for business and education**

Generally, communications will increase in volume and complexity compared to other company activities, making it increasingly strategic – i.e. relevant as a competi-

tive advantage (e.g. things will communicate with things and humans in parallel, more direct communication replacing one-to-many communications, more just in time). Work will shift from clear department logic to more and more cross-functional teams and temporary projects that require agile approaches. Several technological advances combined will enable real-time produced offerings in the mass market without external services. Trust will be key in customer relations and related communications ("no more lies"). Real-time production of content requires richer and at the same time more natural user interfaces (voice based / visually at least augmented) with as much dependency on context as possible. Furthermore, communications activities will become faster and more one-to-one requiring increasing technological support to get it organized.

More specifically, with regards to a company's communication/marketing goals or strategies the experts suggest the implementation of an AI ethics advisory board for setting limits and alignment with corporate values becomes mandatory for communications intensive businesses (most are) that want to be sustainable. Companies should build internal expertise on AI at decision making level (otherwise they would be dependent on external consultancy in such a strategic issue) which could be part of Chief Digital Officer's role. Furthermore, experts recommend the setting-up of a proactive partnering with suppliers of AR/VR/MR as well as IoT (possibly different ones; here, internal know-how is of lesser importance than for AI) in a marketing/corporate communication context. Also investing in data collection and analytics as a basis for later AI/IoT applications (infrastructure + human

resources at all levels) shall be considered as well as in preparedness for cloud computing and next generation mobile (data) services as a prerequisite for all other serious anticipation of technological advances in the context of marketing/corporate communication. A clear policy should be developed on how to deal with personalized data (privacy policy taking into account current legal framework conditions and their further development).

Concerning the way companies communicate with stakeholders and their markets respectively as well as the way they produce corporate communication or marketing content, they should prepare for radical change concerning the latter as better algorithms to artificially generate content will be a differentiator. Also, preparedness for blockchain technologies enabling superior transparency in terms of how personal data/preferences are stored and used should be on the agenda.

With respect to communication and marketing organization within a company, the latter should prepare for most call center operations (internal & external) being at least gradually replaced by AI-based services with voice interfaces. Furthermore, on a board level it should be taken into account that a substantial number of jobs on lower/middle management level will become obsolete also in a marketing/corporate communication context (i.e. routine jobs that allow for algorithmic decision making in standard communication activities). But also new jobs will appear at the interface of analytics and decision making to give analytical results a meaning and to guide analytics in a sensible direction. Within companies also thinking of a new work ethic required by cloud computing and next generation mobile (data) applications should be encouraged. Lastly, a frame-

work of KPIs aligning operations across departments/functions (also more qualitative aspects become relevant for KPIs) to prepare for dynamically optimized customer experience (which will become key) has to be set up.

Coming to the structure of external communication/ marketing services, here based on blockchain technology the contribution of different suppliers/agencies to value creation in marketing/corporate communication activities should be anticipated (with the risk for them of being bypassed in the future – when not substantial anymore). Based on blockchain technology companies should also prepare for more direct relations with its customers/stakeholders increasingly replacing intermediaries (i.e. also challenging earlier routines of company's departments in the collaboration with agencies/suppliers). Furthermore, agencies' role shall be reconsidered which will have to become increasingly specialized for communications related services or to propagate to more cross-sectional consulting services.

Overall, this study expands our knowledge about how technology will change corporate and marketing communication and when this will happen. However, our results also reveal some interesting differences that need further investigation to be fully understood. The differences regarding the judgements of academics in contrast to those of general managers suggest that education plays a major role. Some technologies like chatbots or the application of artificial intelligence in the field of content creation are widely discussed on public mass media and also have a lot of advocates in the scene of technology evangelists. However, scientific results in this field reveal that there still are some major hurdles

for those emerging technologies to overcome before they will hit the mainstream (Berger et. al., 2015; Etzrodt, Wagner, & Engesser, 2019). At the same time, our results indicate the different technological status and developments in different countries. We already know that technologies like personal voice assistants and virtual influencers are much wider spread in Asian than they are in Europe or the United States. Academic education in media management as well as corporate and marketing communication should take these differences into consideration when creating study programs or research designs. As necessities of corporate and marketing communication experts change so will also curricula have to change and address these requirements.

## **Limitations and future research agenda**

Since this study is based on the opinions of mostly industry experts from different countries, some of our results might be prone to some peer-group bias as well as general public opinions in different cultural regions. To get a better understanding of those potential biases we analysed the sample for significant differences across the diverse groups of experts (according to country of residence, age, gender, hierarchy level, professional context, and technological expertise with regards to specific technologies as well as overall). The results show some differences for specific questions about the impact of technology that should be addressed in future research. For instance, subsequent studies could focus on the different views between academics, general managers and marketing and communication experts. Addition-

ally, our sample cannot not be considered as representative for the overall populations of our different types of experts. However, we addressed this issue by recruiting a diverse sample by applying a sampling method (screening) via LinkedIn that seems to be very promising. Yet, the quality of this approach should itself be a matter of future research. Finally, the application of a fully structured questionnaire without open questions might have led us to miss out some relevant technological developments as well as aspects of change. However, we tried to minimize this potential issue with our multi-step research approach that included the input of experts in moderated workshops on different levels of the research process. Thus, we believe that this study can be considered as a solid starting point for deeper investigations of how current and emerging technologies will change the ways and challenges of marketing and communication management in the near and further future and how those developments will influence academic education in the respective fields.

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