Ethics & AI: Identifying the ethical issues of AI in marketing and building practical guidelines for marketers

Can-Luca Benkert
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT

Artificial intelligence is already a core part of various marketing activities. With the ever-increasing amount of data created and gathered every day – and the utmost (business) value of that data – artificial intelligence is only going to continue its steep rise, impacting marketing departments among the most significantly in businesses. Yet, recent uproars of data mistreat, such as the Cambridge Analytica case, have started to shed light on what ethical problems these applications are imposing and how to handle them. In order to identify these issues and to extrapolate appropriate guidelines specifically for marketers, this paper first explains what artificial intelligence and ethics mean in the context of marketing, then continues by conducting a critical literature review (n=29) on the ethical issues of AI and approaches to solve them, and finally compares the results to seven expert interviews by both business practitioners and academic researchers. Resulting from the literature review and the interviews, a set of eight ethical issues and 21 combined guidelines are identified and a conclusive graphical representation of the combined findings, grouping the guidelines into five different levels, is constructed. The research also showed that, while many of the identified ethical problems can be addressed with respective guidelines, the question of ethics of AI will be a continuous topic for organizations and research alike and will thus need pertaining focus.

Graduation Committee members:
1st Examiner: Dr. Efthymios Constantinides
2nd Examiner: Dr. Agata Leszkiewicz

Keywords

Ethics of AI, artificial intelligence marketing, marketing & AI, data-driven marketing, data ethics

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1. INTRODUCTION

Artificial intelligence has gained considerable amounts of research attention over the last decade (cf. **Appendix A.1**; Zeng (2015)) and is deemed one of the top eight emerging technologies companies have to consider (PwC, 2017). With the potential of artificial intelligence to deliver additional *"*global economic activity of around $13 trillion by 2030, or about 16 percent higher cumulative GDP compared with today*"* (Bughin, Seong, Manyika, Chui, & Joshi, 2018), it is clearly apparent why the focus on artificial intelligence has risen and is continuing to grow.

Artificial intelligence is enabling an ever-growing amount of traditional products and applications to transform into now-smart and improved products; prominent examples are cars, that now become smart- and partially driverless, or *Nest*, a thermostat that learns to anticipate what temperature is wanted in the user's home or office, based upon the heating and cooling habits (R. L. Adams, 2017). In addition to these, artificial intelligence is also the basis for new forms of applications, goods, and tools, such as the smart reply suggestions in Google's Gmail. The general consensus is that artificial intelligence will facilitate and enhance close to all business activities, but marketing capabilities will be improved among the most significantly (Chui et al., 2018; Kose & Sert, 2017; Sams, 2018). Yet, recent scandals such as the Cambridge Analytica-Facebook involvement in the latest US-elections have highlighted the growing importance of ethics in using artificial intelligence ("Cambridge Analytica controversy must spur researchers to update data ethics," 2018; Isaak & Hanna, 2018; Tarran, 2018). Furthermore, with artificial intelligence having anticipated high business-, economic- and social impact (Chui et al., 2018; Purdy & Daugherty, 2016), if implemented successfully, ethical considerations will continue to be increasingly important. This highlights the importance of helping especially marketers to understand the ethical issues of AI in more depth and how to deal with them.

Literature, so far, has lacked to provide scientific papers that cater specifically to marketers when identifying the ethical issues of artificial intelligence and building practical guidelines for marketers. This paper's **research objective** is therefore to *identify the ethical issues of artificial intelligence in marketing and build specific guidelines regarding those issues to help marketers*. Deducting from that, this paper's main **research question** is: **What are ethical issues of artificial intelligence in marketing and what are guidelines that can help marketers to deal with them?**

In order to help answer the primary research question, several sub-questions can be defined. These help to structure the process of coming to a conclusion into several sub-steps and provide guidance throughout the paper. The sub-questions (1) and (2) are based on the literature review, whereas sub-questions (3) and (4) are based upon the expert interviews. The sub-questions are as follows:

(1) *What ethical issues of artificial intelligence in marketing can be found in the existing literature?*
(2) *What are the common characteristics of the approaches and methods found in the literature that help to deal with ethical issues of artificial intelligence?*

By first reviewing scientific literature written during the more recent years (approx. the last five years), an initial overall impression is gained on what ethical issues of AI, as well as what potential approaches to handling them, have been identified previously - which provides a stable basis for both expert interviews and conclusions.

(3) *What ethical issues of artificial intelligence in marketing do research experts and business practitioners from different disciplines, that are all involved with artificial intelligence, identify?*
(4) *What approaches, methods and/or practices to dealing with ethical issues of artificial intelligence in marketing do the research experts and business practitioners suggest for marketers?*

The interviews will give highly relevant input into what ethical concerns scientific research experts and business practitioners from e.g. marketing, technology-philosophy and -ethics, behavioural sciences & technology, or science & technology, as well as IT- and marketing business professionals identify. They are interviewed because they research, know and/or work with the current developments of artificial intelligence. Furthermore, the interviews are of utmost value to the study because they may include novel insights that literature may not have considered before (because of e.g. delay of publications), put different emphasis on certain ethical issues, confirm and strengthen the suggestions found in the literature, or have a completely different view. Their insights are also of special importance in answering how marketers can potentially approach dealing with ethical issues.

After presenting the findings of the literature review and explaining the methodology of both the literature review and the expert interviews, the results of the expert interviews are pointed out. Then, a conclusive and coherent graphic is constructed in section 5 to address the primary research question. Following that, the conclusion and discussion of the research are handled, managerial implications are given, and the practical and academic relevance are shown. Limitations, further research topics, and acknowledgments are part of the last section of the thesis.

2. LITERATURE REVIEW

In this section, the main terms "artificial intelligence" (2.1) and "ethics" (2.2) will be defined in order to have a common understanding what these terms mean and encompass in the context of this paper. These then feed into the sub-sections 2.3 and 2.4: Sub-section 2.3 describes the ethical issues of AI in marketing based on the literature and thereby gives the answer to the first sub-research question, whereas sub-section 2.4 reports the findings of the literature with regard to the approaches and ways of dealing with the issues of AI (second sub-research question). Sub-section 2.5 then summarizes and visualizes the findings of the literature review into a coherent preliminary graphic.

2.1 Artificial Intelligence

Artificial intelligence (hereinafter abbreviated as *AI*) is an emerging technology (PwC, 2017) that is commonly defined as the "capability of a computer program to perform tasks or reasoning processes that we usually associate to intelligence in a human being" (Rossi, 2016). It, therefore, acts also as an umbrella term for various technologies such as machine learning or deep learning (Chui et al., 2018; Jordan & Mitchell, 2015).

First established as a term in 1956 by Professor J. McCarthy, among others (Pan, 2016), artificial intelligence has seen a large spike in research interest - especially since the start of the 21st century (cf. **Appendix A.1**). With the increased research on the

topic, many scientists claim that AI has seemingly unlimited potential if it is appropriately designed and programmed (Hauer, 2018).

The basis for all AI is fundamentally vast amounts of data and algorithms that are built by programmers. The algorithms are trained with digital data in order to obtain a variety of results such as predictions and insights (Balthazar, Harri, Prater, & Safdar, 2018; Jordan & Mitchell, 2015). In the future, as Pan (2016) elaborates, AI is going to advance and become more sophisticated by e.g. becoming autonomous-intelligent machines, becoming "human-machine hybrid-augmented intelligence" (p. 411) and moving towards *"*cross-media cognition*"* (p. 412).

2.1.1 Artificial Intelligence in Marketing

In marketing specifically, AI serves the purpose of leveraging *"*customer data and AI concepts like machine learning to anticipate your customer's next move and improve the customer journey*"* (Tjepkema, n.d.). To do this, AI provides the base for a variety of applications which enhance capabilities on multiple different levels: For example, AI helps to improve online content by analysing *"*existing online content for gaps and opportunities [and choosing] keywords and topic clusters for content optimization*"* (Roetzer, 2019).

Moreover, more accurate targeting, personalization, and the creation of buyer personas are significantly enhanced by AI (Bentahar, 2018). Examples of tools/applications that can help with these are virtual assistants (such as chatbots) and physical AI-powered assistants like *Amazon's Alexa, Google Echo or Apple's Siri,* which use speech recognition to understand the words said and then answer the human queries in a meaningful way (Breuer, Hagemeier, & Hürtgen, 2018). Simultaneously, while their algorithms recognize the voice and answer the user queries, they improve themselves by doing so (Marr, 2018). Additionally, they also retrieve and store data about the user, like his/her search queries and where he is located, and retrieves possible patterns to deliver more tailored answers and suggestions. Also, they can help marketers to identify customer trends and needs (Evans & Ghafourifar, 2019) via e.g. frequency of specific customer's search queries when talking to virtual/embodied assistants. Other, more established examples are intelligent *"*next-product-to-buy*"* (Breuer et al., 2018; Chui et al., 2018) recommendation systems, best exemplified by Amazon's recommendation system.

As a further matter and application example, artificial intelligence helps with keyword management and identification, analysing and managing digital campaigns, and generally more *"*data-driven marketing campaigns, where AI will allow data to be more properly used and integrated into each ad campaign*"* (Bentahar, 2018). This can be achieved via e.g. AI-powered A/B-testing and programmatic ad targeting which also helps with the purpose of enhancing the customer's journey and predict his/her next action.

By being able to increasingly understand and predict future customer behaviour better via improved personalization, more accurate buying personas, and better targeting - while simultaneously helping with the management and analysis of marketing campaigns - costs such as *cost per acquisition* (CPA) are reduced, while key performance indicators like *return on advertising spend* (ROAS) and sales are increased (Albert, 2019a). Thereby, AI-applications in marketing have the potential to also provide great efficiency and financial gain for the whole business.

2.2 Data Ethics

In order to assess what ethical issues and concerns artificial intelligence may pose, it first must be clarified what ethics in relation to artificial intelligence mean.

With regard to artificial intelligence, ethics are called **data ethics**, which is a sub-division of ethics that analyses and assesses moral issues in relation to **data**, **algorithms**, and r**elated practices** to come up with ethically and morally good results (Floridi & Taddeo, 2016). According to Floridi and Taddeo (2016), **data** issues encompass the ones with regard to e.g. how they are recorded, processed and use while **algorithms** (such as artificial intelligence and its associated applications like machine learning) and the related ethical issues are primarily due to them becoming more complex and autonomous. Lastly, ethical problems of **related practices** include "questions concerning the responsibilities and liabilities of people and organization in charge of data processes, strategies and policies" (Floridi & Taddeo, 2016, p. 3) with the aim to "define an ethical framework to shape professional codes about responsible innovation, development and usage" (Floridi & Taddeo, 2016, p. 3).

While listed as distinct components, AI is only enabled by the combination of data, programming, and algorithms. Floridi & Taddeo (2016) confirm this by stating that the three sub-components are *"*obviously intertwined*"* (p. 4). Thereby, an ethical issue identified will have implications for guidelines in multiple ways.

2.3 Ethical Issues of AI in Marketing

Before examining what ethical issues literature on AI has identified, it is important to state that this paper will only focus on the ethical issues of AI that is currently used in and for ***marketing*** and the purpose(s) associated (cf. 2.1.1 for some examples of applications). The ethical issues of AI regarding e.g. autonomous robots for surgery or military use (such as autonomous drones) will not be examined and considered. While they may be, in some cases, potentially useful for marketing (because of data gathered), they are not designed with the *intent* of being useful for marketing activities. On the contrary, the AI-applications used in and for marketing are intended to help *"*build out a marketing profile of you*"* (Hildebrand, 2018) and to *"*create more educated, personalized campaigns to reach consumers*"* (Bentahar, 2018). Moreover, it would be beyond the scope of this paper to examine all possible ethical risks of AI in all fields since it is a rapidly developing technology with ever-growing applications in all business- and product fields.

After reviewing the literature with n=29 on ethical issues of AI (cf. **Table 1**), several problem dimensions can be identified. These problem dimensions are the ones mentioned in the literature; additionally, they also represent umbrella terms for various issues named in the literature that have not been categorized under a term and have therefore been deductively coded. This makes it easier to understand the consensus of the literature compared to listing each problem individually just because it did not explicitly state the problem dimension in the actual article.

Table 1: Overview over literature the ethical issues relevant for AI-applications in marketing are identified per piece of literature (n=29)

Literature source	*Ethical issues identified*
"Cambridge Analytica controversy must spur researchers to update data ethics" (2018)	Data use (relates to transparency)
Accenture (2016)	Privacy; Security; Transparency
Accenture (2016a)	Bias; Flawed interpretation
Balthazar et al.(2018)	Privacy; Consent; Accuracy
Bonime-Blanc (2018)	Privacy; Loss of jobs; Transparency
Bostrom & Yudkowsky (2014)	Transparency Robustness (relates to security)
Cath (2018)	Transparency; Privacy; Loss of jobs; Bias
Cath et al. (2017)	Transparency; Fairness (relates to bias); Accountability; Privacy; Data ownership
Char, Shah, & Magnus (2018)	Bias
Danaher (2018)	Security; Privacy; Bias
European Commission (2018)	Accountability; Privacy; Robustness (relates to security); Transparency; Bias
Floridi et al. (2018)	Privacy; Security; Transparency; Accountability
Floridi & Taddeo (2016)	Privacy; Discrimination (relates to bias); Trust; Transparency; Accountability and Liability/Responsibility; Consent; Data use (relates to transparency)
Gibney (2018)	Privacy; Data use (relates to transparency)
Hao (2018)	Bias
Howard (2018)	Privacy; Misuse (relates to security and accountability); Loss of jobs
Institute of Business Ethics (2018)	Privacy; Bias; Accuracy; Transparency; Accountability; Fairness (relates to bias)
Isaak & Hanna (2018)	Privacy; Data protection (relates to security); Transparency
Jessen (2018)	Accuracy; Discrimination (relates to bias); Transparency; Reliability; Accountability
Jordan & Mitchell (2015)	Data ownership; Privacy
Lee & Park (2018)	Accountability, Misuse (relates to security), Privacy
Reddy (2017)	Privacy; Data ownership; Abuse (relates to accountability and security); Transparency
Rossi (2016)	Privacy; Data Ownership; Transparency; Accountability; Bias
Sams (2018)	Privacy; Security
Stahl & Wright (2018)	Privacy; Bias; Trust; Consent; Security; Accountability; Transparency; Loss of jobs; Dual use
Winfield & Jirotka (2018)	Privacy; Accountability/Responsibility; Transparency; Loss of jobs
Wright (2011)	Privacy; Data protection (relates to security); Bias; Consent; Accountability
Yuste et al. (2017)	Privacy; Consent; Bias
Zeng (2015)	Loss of jobs; Privacy; Accountability

It is apparent that five ethical problem-dimensions dominate the literature findings (see **Figure 1**).

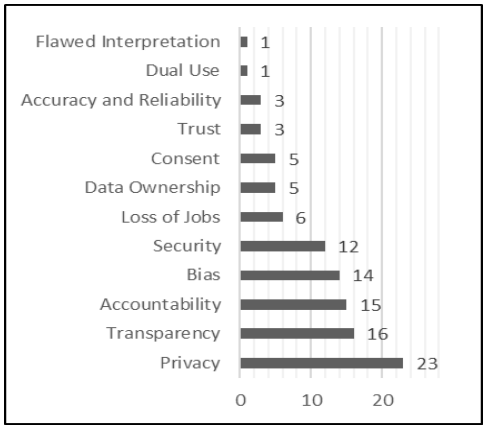

Figure 1: Frequency of ethical issues discussed in the literature on the ethics of AI and emerging technologies (n=29)

These are namely: **Privacy**, **transparency, accountability, bias**, and **security**. From here on forward, these issues will be referred to as the **PABST**-dimensions. In order to be clear on what every single PABST-dimension means in the context of this paper, they must be defined and characterized accordingly:

(1) **Privacy**, which can primarily be summarized as *data/information privacy*, is concerned with the *"right to control access to personal information about oneself"* (Brey, 2012, p. 11). Moreover, data privacy is closely interlinked with the concept of *confidentiality*, according to Balthazar et al. (2018). Confidentiality itself can be defined as "the responsibility of those entrusted with those data to maintain privacy" (Balthazar et al., 2018, p. 582).
(2) **Transparency** refers to three main points of interest: (a) how the data is gathered and for what purpose it is used (Accenture, 2016b), (b) how the AI-algorithm/application works (Albert, 2019b), and (c) the ability to trace and explain the behaviour and decision of an algorithm (Albert, 2019b; Rossi, 2016).
(3) **Accountability** is concerned with liability in the case of unwanted results (Floridi & Taddeo, 2016).
(4) **Security** looks at the *"robustness against manipulation"* (Bostrom & Yudkowsky, 2014, p. 2) of AI-algorithms, which primarily encompasses hackers and similarly unauthorized third-parties, as well as data security/data protection (Accenture, 2016b).
(5) **Bias** mainly assesses unwanted bias and skewing of both data and algorithms and the associated outcomes (Accenture, 2016a).

Out of PABST-dimensions, *privacy* is the most frequently mentioned ethical issue, appearing in 79.31% of the literature (23 out of 29). These findings coincide with the findings of Stahl & Wright (2018). They found that privacy, and data protection, the latter of which is part of security in **Figure 1**, are the most mentioned ethical issues in the literature on information and communication technology (ICT) ethics. While ICT involves much more than AI, Stahl and Wright (2018) claim that a lot of ethical issues of ICT are applicable to smart information systems (SIS), which are "technologies that involve artificial intelligence, machine learning, and big data" (p. 27).

2.4 Dealing with Ethical Issues of AI: Common Characteristics of Approaches and Methods

In order to build a practical set of guidelines for marketers to help them deal with the ethical problems of AI, common characteristics of already existing approaches and methods have to be identified.

Several practices and methods to dealing with ethical issues of emerging technologies and AI have been discussed in the literature, such as technological mediation (Kudina & Verbeek, 2019), ethical impact assessment (Wright, 2011), and anticipatory technology ethics (Brey, 2012). A common theme in many of the methods is that they tend to often be based on an early assessment, anticipatory approach (cf. Brey, 2012, 2017; Buckley, Thompson, & Whyte, 2017; Kiran, Oudshoorn, & Verbeek, 2015; Stilgoe, Owen, & Macnaghten, 2013; Winfield & Jirotka, 2018; Wright, 2011).

An anticipatory approach, in the context of this paper, is a combination of an *"*ethical analysis with various kinds of foresight, forecasting or future studies, such as scenarios, Delphi panels, [and] horizontal scanning*"* (Brey, 2017, p. 178). These are then used to *"*project likely, plausible or possible future […] impacts*"* (Brey, 2017, p. 178). An anticipatory approach offers distinct benefits such as being the only approach that has the capability to provide *"*detailed and comprehensive forward-looking ethical analyses of emerging technology*"* (Brey, 2017, p. 179). Furthermore, according to Brey (2017), these foresight methods must be empirically based and logically valid to be useful. This means that some research must be done in order to determine what likely developments/impacts/consequences there are or might be. However, there does not seem to be an outspoken preference towards one specific foresight method over another when looking at the literature overall.

In the context of ethics of AI in marketing, this means that the foresight methods could be used to assess a specific AI-application with regard to how severe it would impact the PABST-dimensions. For example, a worst-case, best-case, and "most-realistic" scenario could be built in order to assess how the application would likely impact privacy, accountability, bias, security and, transparency.

The use of an anticipatory approach is strongly supported by the *Collingridge* dilemma and its ethical variation. The basic Collingridge dilemma describes a two-fold problem: In early development phases, the impact of a technology is hard to assess but the development direction can rather easily be influence – yet, when the technology is fully embraced in society, effects are known but it may be costly or hard to influence further development (Brey, 2017; Buckley et al., 2017; Kudina & Verbeek, 2019; Worthington, 1982). The Collingridge dilemma can then also be applied to the ethical issues of technology (Kudina & Verbeek, 2019) and therefore also applied to ethical issues of AI in marketing: In early stages, it is hard to anticipate which ethical issues AI will pose, and increasingly so the more sophisticated its applications become. Yet, when AI is embedded and heavily used in marketing, it will be very hard to influence the technology in order to sort out the ethical problems – and therefore a pre-emptive, anticipatory, early assessment approach - is needed (Buckley et al., 2017; Kudina & Verbeek, 2019).

In addition, Bonime-Blanc (2018), Brey (2017), Buckley et al. (2017), Cath (2018), the Institute of Business Ethics (2018), Stilgoe et al. (2013), Winfield & Jirotka (2018), and Wright (2011) advocate to add a participatory element by including various stakeholder groups such as experts and civilians for e.g. finding out what ethical issues they find important or evaluating scenarios proposed by experts. The incorporation of a wide variety of key stakeholders is important for a minimum of three reasons, according to Buckley et al. (2017): (1) They bring novel information into the discussion, (2) they bring up values that expert may not have considered yet, and (3) participation is important for legitimation. However, as Buckley et al. (2017) also point out, the Collingridge dilemma also poses a hurdle for the execution of the participatory element: With regard to non-expert stakeholders, it is important to "provide enough background on the innovation […] so that stakeholders can actually participate in an evaluation process in a meaningful way*"* (p. 56). This means that when including and working with non-experts, one would have to make sure that they also have enough information on e.g. what the AI-application actually is about, what it does, how it works. Otherwise, their contribution might not be as valuable as it could be.

Lastly, developing and implementing a set of ethical principles and standards is commonly advised (Accenture, 2016b; Balthazar et al., 2018; Institute of Business Ethics, 2018; Purdy & Daugherty, 2016; Reddy, 2017). This can then be applied to AI by developing a code of ethics addressing the issues AI poses. Such a "code of ethics" (Accenture, 2016b, p. 5) is important for multiple reasons: It supplements ethical discussion by providing *"*more tangible standards*"* (Purdy & Daugherty, 2016, p. 22), thereby facilitating common understanding and goal-setting. Furthermore, a code of ethics is a *"*necessary precursor to defining policies and procedures that ensure digital trust is established*"* (Accenture, 2016b, p. 5) which will help to facilitate the adoption of AI-solutions (Accenture, 2016b, 2016a). Adding to this, another advantage of a code of ethics is that it improves especially transparency and accountability (Accenture, 2016b), which are two of the five most commonly mentioned ethical issues (see **Figure 1**).

2.5 Pre-interview: Preliminary Findings based on the Literature Review

Looking at the main findings from the literature, both in terms of the ethical issues (cf. 2.3) and the approaches/guidelines to deal with them (2.4), a preliminary graphical representation of the results (cf. **Figure 2**) can be constructed.

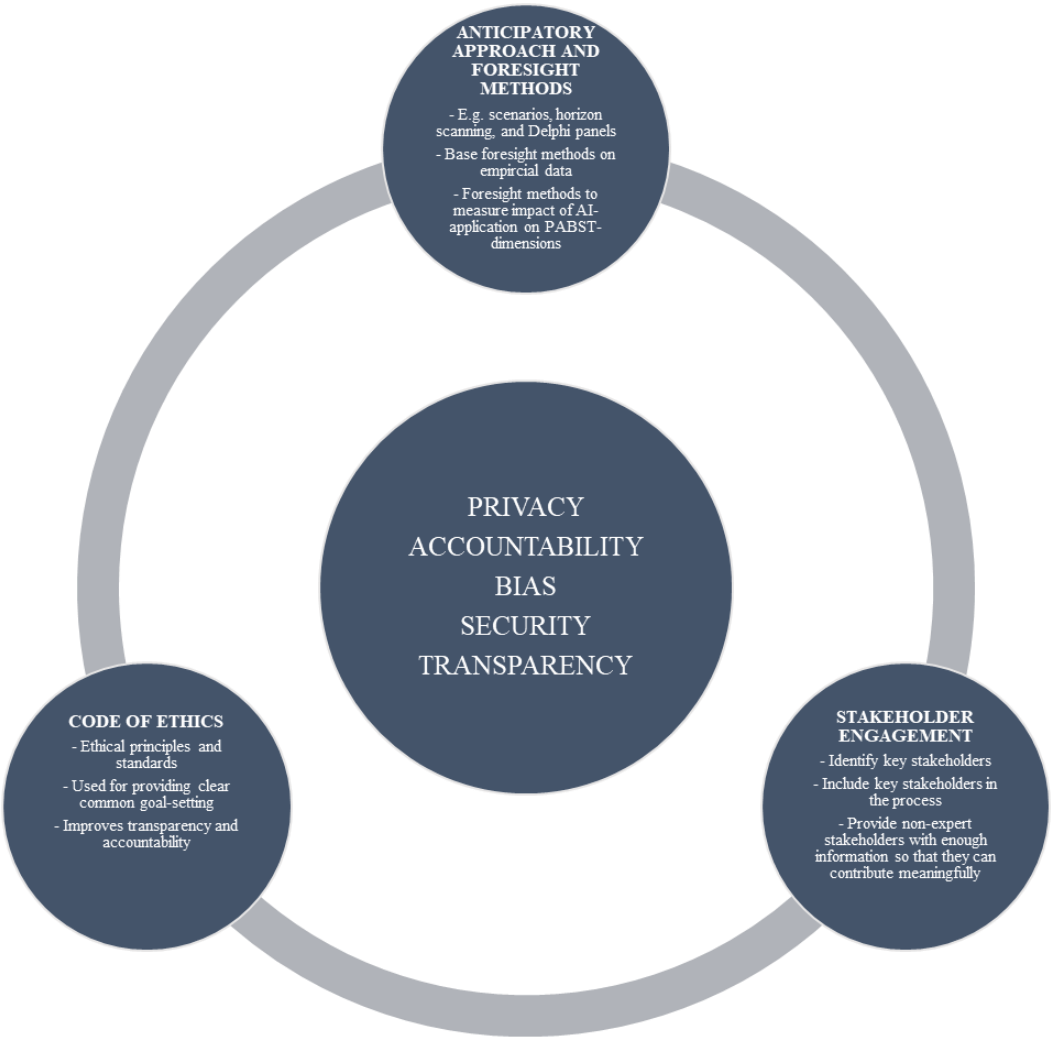

Figure 2: Pre-expert interviews: Preliminary findings based on the literature review

The PABST-dimensions are in its centre due to the fact that they are the basis to which the guidelines (outer circles) have to be catered to. This graphic only serves as a graphical representation and summary of the literature findings.

3. METHODOLOGY AND RESEARCH DESIGN

In this section, the methodology and research design of the study (3.1), the interviewee selection and interview set-up (3.1.1), as well as the queries and sources used in the process of finding adequate literature (3.2) are explained and reasoned.

3.1 Methodology and Study Design

This research was designed as a **qualitative explorative study that combines a critical literature review with seven qualitative, semi-structured face-to-face expert-interviews**. Three primary guiding questions were used in the interviews to help answer sub-research questions 3 and 4 (**Appendix B.1**).

It was set-up primarily as a qualitative study because of the explorative nature of the research question. Semi-structured interviews were chosen because they are well-suited "if you need to ask probing, open-ended questions and want to know the independent thoughts of each individual in a group" (W. C. Adams, 2015, p. 494). Also, the interviews were scheduled to last a maximum of one hour, which is the upper limit of the optimal interview length for semi-structured interviews (W. C. Adams, 2015).

While the literature does not give a definitive, conclusive answer as to how many interviews are sufficient for qualitative research (Bonde, 2013), Baker & Edwards (2012) and Guest, Bunce, & Johnson (2006) argue that six interviews are the minimum amount required. This is exceeded by the seven interviews of this study and even gave more data input which created a broader view and increased the potential to identify and solidify more meta-themes across the interviews. The data from the interviews was inductively coded rather than deductively since inductive coding is "used when you know little about the research subject and conducting heuristic or exploratory research" (Yi, 2018), which is the case in this study.

3.1.1 Interviewee selection and interview set-up

The interviews included a short introduction for the interviewee about the scope of the interview, i.e. that not every AI-application - such as driverless cars – was taken into account. The guiding questions in **Appendix B.1** just depict the overall main questions/topics that should be covered. Aside from these, more interview-specific, probing questions with respect to the answers of each individual interviewee were asked. Since these were

based on the individual responses of the interviewee, they are not depicted in the diagram.

The experts were selected based upon their current profession: The academic experts' research interest, expertise, and/or publications needed to involve (emerging) technologies/AI in some way. It is important to not only consider insights from marketing-based researchers and professionals but also from e.g. behavioural scientists in technology because of the overall high impact AI will have in businesses, economy, and society (Chui et al., 2018; Purdy & Daugherty, 2016). Also, by including a variety of different backgrounds and not only limiting the choices to e.g. only behavioural technology researcher or marketing researchers, anchoring bias is mitigated. The business experts needed to either work in the fields of marketing/IT, very closely related fields and positions, or have vast previous experience in marketing. This was required because they are the ones primarily concerned and affected with AI in their business and therefore likely have very valuable input. All interviewees are anonymized and received an identifier to differentiate between them within this paper. Each interviewee got a number based upon when they were interviewed (e.g. the first one interviewed received Nr.1, the second one Nr.2, etc.) and will be further identified by their gender and a short summary of what position/occupation they currently had in order to show how they related to the topic of the thesis.

3.2 Literature Sources and Queries used to find the Literature

The majority of the literature used in the literature review was (journal) articles or books retrieved from academic sources such as Scopus.com, the Web of Science, and the digital library of the University of Twente (FindUT). Moreover, the focus was on choosing papers from the last five to six years to ensure that papers consider recent AI-developments and events. The queries used are shown in **Appendix B.2**. The four query variations from (A) and four query variations from (B) were deployed to find literature for the review on ethical issues and approaches to dealing with them. The queries from (C) were used to find e.g. use cases of AI or current adoption of AI. Aside from these, reputable non-academic sources such as McKinsey, Accenture, Forbes, the Marketing Artificial Intelligence Institute - but also technology-focused outlets like Androidcentral.com - were used. These sources helped to retrieve information about the current status quo of AI and its uses as well as current (ethical) practices/policy recommendations with a focus on industries, businesses, and use cases.

4. EXPERT INTERVIEWS: RESULTS AND COMPARISON TO THE LITERATURE

In this section, the results of the seven expert interviews are going to be presented and compared to the literature review. They are sub-divided into two main sections: First, 4.1 reports the results from the expert interviews with regard to the ethical issues and compares these to the respective findings from the literature. In 4.2, the suggestions experts gave with regard to approaches, tips, and guidelines to deal with ethical issues will be covered and contrasted to the literature.

4.1 Ethical Issues of AI in Marketing

Regarding the ethical issues of AI in marketing, the PABST-dimensions were the most frequently mentioned and discussed ethical issues during the interviews (cf. **Appendix C.1**). Six out of the seven interviewees mentioned privacy/privacy-related issues and security/security-related issues as ethical issues of AI in marketing, with Interviewee Nr.3 arguing that privacy is *"*the most known*"* ethical issue of AI in marketing. Five experts stated that transparency was also a major ethical problem. This slightly differs from the literature reviewed since security was the least mentioned of the five dimensions.

Accountability, bias, or respective related issues were mentioned and discussed by four interviewees (Interviewee Nr.2, Nr.3, Nr.4, Nr.6). Yet, Interviewee Nr. 6 stated that it is "nearly impossible" to have completely unbiased data sets and that some form of "positive" bias is "actually needed*"* to accurately address target groups. While these findings generally coincide with the literature, Interviewees Nr.2 and Nr. 5 independently stressed the importance of transparency out of all of the issues, with Interviewee Nr. 5 stating that a lack of transparency is *"*why ethical problems occur in the first place*"* for the reason that customers do not *"*understand and see how and why results occurred*"*. Additionally, Interviewee Nr.1 explained that transparency was one of the two underlying ethical issues, with the inability to predict the future impacts of AI on ethical values being the other one; the latter will be addressed later in this section.

Aside from the PABST-dimensions from the literature, three *new* ethical issues, that were not covered in the literature, were named in the interviews: **(i)** The impact of AI on societal values, **(ii)** the inability to predict the future impacts of AI on ethical values, and **(iii)** unwanted influencing of the individual customer/user.

The **impact of AI on societal values** was introduced by Interviewee Nr. 4 and he described it as the value dynamics with regard to "the key values with which we evaluate technology […] are also affected by the technology" such as what is ethical with regard to "*how companies deal with clients*". This ethical issue shifts the focus from the individual level to the societal level, addressing the issues AI poses on existing societal standards and norms, and the need to potentially re-define them with the use of AI in marketing applications such as AI-powered voice assistants.

On the other hand, **the inability to predict the future impacts of AI on ethical values**, coined by Interviewee Nr.1, Nr.4, and Nr.5, is concerned with the impacts in the future on ethical values such as the privacy, and security. Interviewees Nr. 1 and Nr.4 further elaborated this by saying that e.g. privacy's and security's definition are susceptible to change over time because of the unpredictable future impacts on AI. Interviewee Nr.1 added that dimensions such as privacy and security are not necessarily ethical issues of AI but rather *"*just factors*"* and that currently, *"*we do things in which we have no idea in how it will affect what we might call privacy in 2025*"*. In addition to that, Interviewee Nr.4 stated that the individual in the ethical discussion is overemphasized, which would, in turn, distract from addressing the underlying ethical problems.

Lastly, the **unwanted influencing of the individual customer/user** was mentioned by Interviewee Nr.5 as one of the ethical issues of AI in marketing. It is characterized by, according to him, not giving the customer multiple options when e.g. the AI is recommending them or advising them on certain products. This could be exemplified by Amazon's Alexa choosing the type of (political) media/information the user gets every morning without the user knowing that he/she is restricted in the information he receives, according to Interviewee Nr.5. This would then potentially majorly influence how the customer acts and behaves, stated the Interviewee.

4.2 Suggestions for Dealing with the Ethical Issues of AI in Marketing

With regard to potential guidelines (cf. **Appendix C.1**), four experts agreed with the literature findings on *creating a code of ethics* and *including stakeholders (stakeholder engagement)* (Nr.1, Nr.2, Nr.4, Nr.5). The use of an *anticipatory approach*, as commonly featured in many existing approaches (cf. 2.3), was only explicitly mentioned by two interviewees, Nr.1 and Nr.4. With regard to the foresight methods of anticipatory approaches, there was no preference for a particular foresight method, similar to the literature findings.

Aside from these guidelines from the literature, four experts (Nr.3, Nr.5, Nr.6, Nr.7) added that *following the law regulations*, such as the GDPR in Europe, should be of utmost importance to marketers. Especially the business practitioners regarded this as one of the most important guidelines to follow. Besides, the most commonly advised guideline was to *provide ethical training* (Interviewee Nr.2, Nr.3, Nr.5, Nr.7) in order to *"*raise ethical awareness*"* (Interviewee Nr.3) for marketers and programmers, since ethics are a "business culture issue*",* according to Interviewee Nr.5, and ethical training would provide the needed basis needed. Interviewees Nr.1, Nr.3, and Nr.5 recommended marketers to not think from a profit-/business-perspective but rather *think from a human/customer-perspective* because ethics is about humans and *"*not about profit*"*, according to them. Accordingly, this would imply that marketers should think about if they would like what they did if they were their own customer. Moreover, three interviewees (Nr.1, Nr.5, and Nr.7) advocated to *involve top management and get their support***,** but also, as Interviewee Nr.5 mentioned, involve them in creating ethical standards.

On the topic of transparency, *being more transparent about how the data is used, stored and processed and what the AI-application does and how it works in layman's terms* (Interviewees Nr.1, Nr.4, Nr. 6)**,** *communicating transparency* (Interviewees Nr.5 & Nr.6) *and providing evidence* (Interviewees Nr. 5 & Nr. 6) were advised by two interviewees each. Interviewee Nr.5 illustrated the latter by recommending to set up a separate part of a webpage where frequently asked questions with regard to the AI-application(s) are answered and processes are explained. Interviewee Nr.4 suggested providing evidence with regard to data regulations in order to be more transparent by showing stakeholders that they are working in accordance to the GDPR because the system could be easily checked against these law regulations to see *"*if a system can do that*"*, according to him.

Interviewees Nr.2 and Nr.3 also suggested giving people the options to either *opt in or opt out* of data collection for a given AI-application. Adding to this, Interviewee Nr.3 further explaining that people should be incentivized to opt in by receiving benefits like vouchers or coupons when agreeing to the data collection. *Constant re-evaluation and re-adjustment* of not only the algorithms and data sets (Interviewee Nr.6) to limit bias to a minimum, but also regarding ethical codes, ethical problems, and procedures, as suggested by Interviewees Nr.1 and Nr.5, were among the newly introduced guidelines; Interviewee Nr.5 added to that by stating that *feedback-gathering of stakeholders* is key for the re-adjustment processes. Interviewees Nr.5 and Nr.6 also argued that it would be best to a*nonymize collected data as soon as possible* in order to make sure that no conclusion with regard to sensitive data of the actual person behind the data can be drawn.

Other guidelines that were mentioned only be one interviewee each were: **(1)** Creating multi-disciplinary teams, including *"*behavioural researcher, ethics researcher, business people, consumer, [and] psychologists*"* focusing on ethics (Interviewee Nr.1), **(2)** Having multiple active interaction moments between AI and customer (Interviewee Nr.3), **(3)** focusing on trustworthiness of AI (Interviewee Nr.4), **(4)** identifying how ethical values that are important and how they are affected by the AI-application (Interviewee Nr. 4), **(5)** asking the "why?" and "what is the aim?" of using a specific AI-application in marketing (Interviewee Nr.5), **(6)** thinking about the long-term impact and about the long-term acceptability of the AI-application and associated processes (Interviewee Nr.5) **(7)**, using voluntarily submitted data to further enhance data sets (Interviewee Nr.5), **(8)** separating anonymized from personal data and creating pseudonym profiles and -classes (Interviewee Nr. 6), **(9)** hiring external audits with regard to data privacy and security auditing (Interviewee Nr.7), and **(10)** cross-departmental cooperation between IT-department, marketing-department, and finance-department for hiring the right personal (Interviewee Nr.7); **(11)** have open R&D rather than competition, "just like researchers do on behalf of money which is coming from the government", because it is funded by consumers (Interviewee Nr.1).

Besides the identified guidelines to multiple ethical problems of AI in marketing, there was no consensus about guidelines with regard to the question of accountability; Interviewee Nr.2 made it clear that the humans that program and implement the AI-applications/solutions should be accountable for its defaults and actions. On the contrary, Interviewee Nr.3 pleaded for shared accountability for both programmers and marketers but also customers. Interviewee Nr.6 even argued that accountability is not too much of a problem in the first place since the AI-marketing activities were not life-threatening. Also, it is important to mention that Interviewees Nr.3, Nr.5, and Nr.7 noted that a strategy formed for this purpose has to be very case-specific. This specificity and difference in approaches and strategy are based on the application used, whether a company is acting in the B2C-business or B2B-business, and based on the resources available, according to Interviewee Nr. 7.

5. COMBINING THE LITERATURE AND INTERVIEW RESULTS: A COMPREHENSIVE OVERVIEW

After summarizing the results of the interviews and comparing them to the relevant literature results, **Figure 4** combines the results into a thorough, logical overview while simultaneously answering the primary research question. This graphical representation depicts the ethical problems of AI in marketing that have been identified via the literature review and the expert interviews at the top, and the associated guidelines discussed in the literature review and the expert interviews in the bottom rows. I have grouped the guidelines into five different levels: *organizational activities, support activities, data collection activities, interaction activities*, and *care activities*.

On the *Organizational Activities*-level, guidelines are not necessarily direct marketing activities, but rather activities that affect the overall organisational structure and basis. They include marketers talking to the top-management and getting their support, organizing ethical training for marketers and IT-specialists, building multi-disciplinary ethics-focused teams as well as creating a code of ethics. The guidelines on the *Support Activities*-level are focused on supporting specifically marketers **before** deploying AI for marketing applications: This includes preliminarily identifying the purpose of using AI, finding out who the key stakeholders are, and how the AI-application could possibly impact ethical values specified in the code of ethics.

Data Collection Activities-guidelines are aimed towards the processes of actually collecting the data when having deployed AI, such as following the respective law regulation with regard to data. *Interaction Activities*- guidelines are describing what to do and what to implement at direct interaction points between the customer and the AI application (i.e. when the customer actively uses voice assistants), which includes giving an option to opt in or opt out of data collection. Lastly, the *Care Activities* are dealing with guidelines that can be adapted once an AI-application is in place. These encompass e.g. gathering the feedback of identified stakeholder groups and providing transparency via a FAQ.

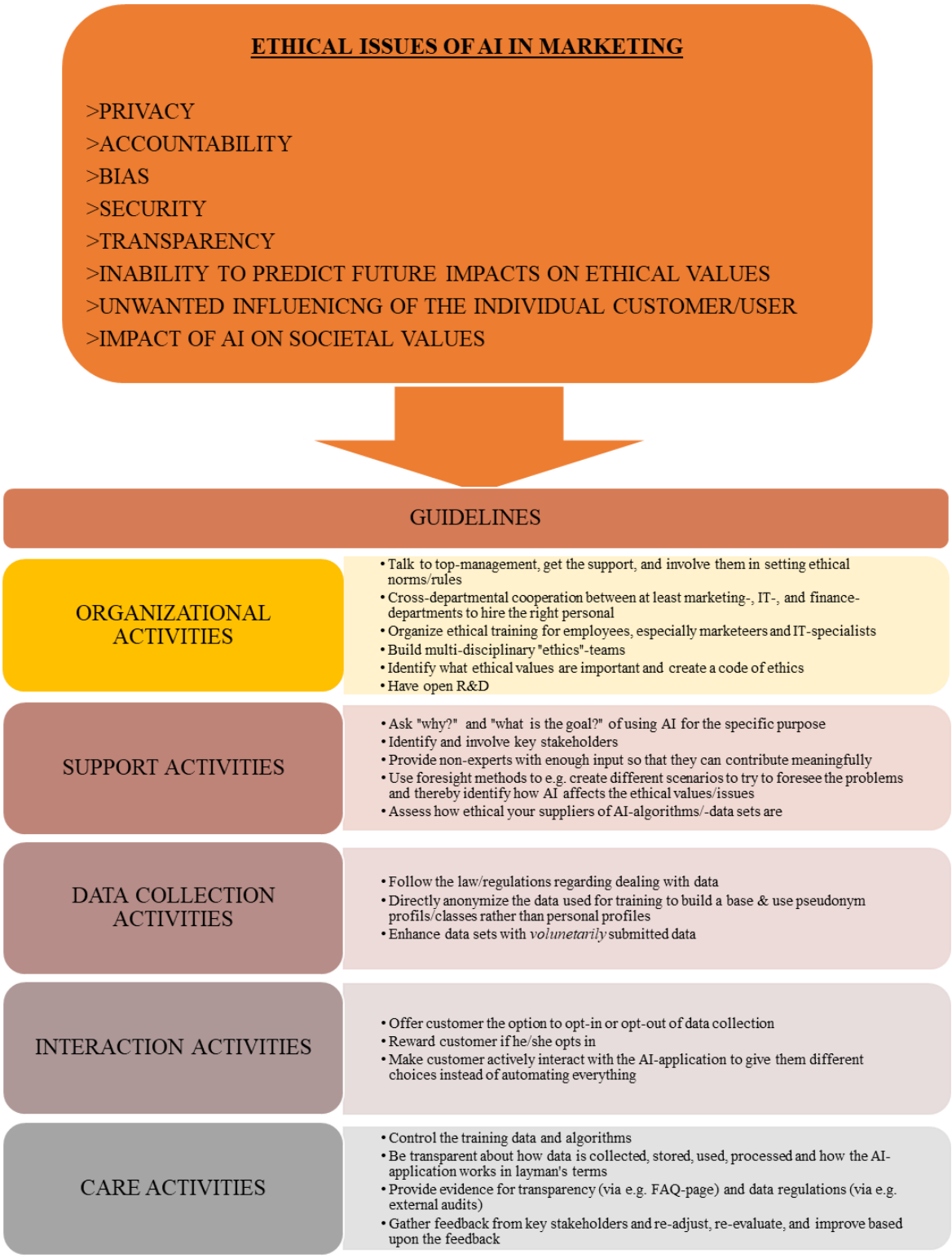

Figure 4: Comprehensive overview of the combined findings: Ethical issues and suggested guidelines

6. CONCLUSION & DISCUSSION

In this section, the results are concluded and discussed (6.1) and managerial implications are pointed out (6.2). Additionally, the contribution and relevance of this study for the academic and practical world are explained (6.3) while also describing the limitations of the study (6.4) and suggesting further research topics (6.5).

6.1 Conclusion

This explorative study aimed at answering the primary research question "**What are ethical issues of artificial intelligence in marketing and what are guidelines that can help marketers to deal with them?**". Based on a critical literature review and seven expert interviews, it can be concluded that there are currently eight dominant ethical issues of AI in marketing: Privacy, accountability, bias, security, transparency, the inability to predict future impacts on ethical values, unwanted influencing of the customer, and the impact of AI on societal values – most of which can be dealt with in multiple ways, on multiple levels. The guidelines not only address and affect the internal structures and actions of the marketing department and marketing activities, but also have implications for cross-departmental involvement, AI-implementation, and activities taking place after data is gathered and processed. While the research showed that guidelines could be found to tackle most of the ethical issues identified, some ethical problems of AI still remain to be solved entirely: The problem of accountability, and the inability to predict the future impacts of AI. Accountability may be a question of applicable law, too, due to e.g. the GDPR and is thereby closely bound to country and union regulations, whereas the latter issue is a problem building entirely on the future: Since the future is only precisely predictable to a marginal extent due to an abundance of factors influencing it (such as mental human capacity, external factors, and sudden events that had not been considered at all), it is very hard to foresee it accurately. Still, to combat this problem, the suggestion of working with foresight methods (such as scenarios or Delphi panels), working with multiple stakeholder groups, and thus trying to anticipate the future, is the best approximation currently available according to the study outcomes.

Furthermore, although privacy was mentioned most frequently in the literature and also appeared to be one of the most common issues in the expert interviews, it is not to say that privacy is necessarily more important than the others. There does not seem to be a common, absolute ranking across the literature or in the interviews that ranks the ethical issues based upon importance or deems privacy to be far more important than the rest. More so, in accordance to what Interviewee Nr.3 said, privacy may be seen as the most obvious, blatant and known ethical issue of AI in the current day and age. Similarly, out of the five PABST-dimensions, security was mentioned the least in the literature review, yet was named just as often as privacy during the interviews. This may be due to the fact that, as mentioned before, privacy appears to be the most recognizable one; on the other hand, it may also indicate that the literature has so far not placed sufficient focus on security compared to the other issues. The results signpost that this may be necessary, though.

On another note, there is evidence that some discrepancies between business practitioners and academic researchers exist, specifically with regard to prioritization of ethical issues. While the business practitioners all emphasized privacy, security, and transparency, some of the academic researchers introduced issues that highlight the societal and behavioural ethical issues of AI in marketing. Supplementing that, some of the expert interviews indicated that the literature's focus may be placed too much on the individual level when discussing ethical problems of AI, which is evident by one of the newly added ethical problems from the interviews is "the impact of AI on societal values", with Interviewee Nr.4 actually stating that there is an overemphasis of the individual in comparison to the society. This may be interpreted in various ways: For one, it may be possible that business practitioners currently think too much of the individual impact rather than the societal implications. Conversely, it may also be thinkable that business practitioners tend to concentrate on security, privacy, and transparency rather than the societal impact because the aforementioned issues may have – currently – a more immediate impact on their business sustainability and the profits an organization makes.

Generally, as assumed in the reasoning for sub-question **(3)** and **(4)** (cf. 1.0 Introduction), the experts really did have new input with regard to both the ethical issues and the practical guidelines, compared to the literature

6.2 Managerial Implications

Deducting from the outcomes of the study, several **managerial implications** can also be drawn. First of all, it is important to recognize that AI-use is only going to increase in the future, specifically and most affecting in marketing. It is therefore imperative to start thinking about and addressing the ethical issues of AI as soon as possible. Seeing as the interviewers all suggested guidelines that cover multiple "levels", it is recommended to not limit oneself to only one of the five levels, but rather try and implement at all of them in order to reap the most benefits. On the other hand, since most companies face resource constraints, the actual importance of each ethical issue and each approach must be tailored to the individual case; The first step before implementing the guidelines is to assess the setting and availability of resources such as which application is (going to be) used, if it is used in a B2C or B2B environment, or mixture, and which resources are available at hand/want to be acquired in order to tackle the ethical issues of AI.

In addition to this, managers must also realize that a substantial part of the guidelines presented in **Figure 4** are reliant on time investments and financial investments, while also possibly changing some basic ways of conduct. Organizing ethical training and potentially hiring new staff does cost money and time, and creating a code of ethics will give guidance to new ways of behaving and thinking. Yet, in order to mitigate the ethical issues of AI present in marketing, these steps are among the most recommended in the study; moreover, the costs are likely offset by both the economic benefit of more ethical AI in marketing (more trust and therefore a competitive advantage) and the avoidance of legal fees.

6.3 Academic and Practical Relevance

In terms of **academic relevance**, the Cambridge Analytica-Facebook data scandal, but also the increasing possibility of exact replication of a human's voice via artificial intelligence (Bendel, 2019) are just a few significant examples that have highlighted the public's and government's (need for) increased attention to researching and addressing ethical issues of artificial intelligence. While there are papers that discuss the ethical issues of AI and how one can approach to solve them, little has been written on guidelines and ethical issues specifically catered towards marketing. This research helps to fill this gap. Moreover, the outcomes of this paper can be continually updated when new

innovations bring new ethical issues or when the focus of issues changes. Therefore, there is no need to constantly research all problems; instead, only the new/revised problems/changes have to be added and approaches have to be found for those new issues.

The **practical relevance** of this paper is that it alleviates the hustle of identifying (major) ethical problems of AI in marketing and simultaneously proposes solutions to combat them. This way, marketers, but also other professional using artificial intelligence in similar ways to marketers, can use this paper for a dual purpose: (1) To analyse their current or future AI-driven applications and services and seek out ethical risks and (2) to mitigate them by adopting the final recommendations – and thereby reducing the risk of ethical failure of AI (with its respective costly consequences) (Floridi et al., 2018). Especially the mitigation of the issues by adopting the guidelines will possibly yield a competitive advantage over rival companies that do not consider ethical issues of AI and/or do not know how to deal with them before they cause harm to the profits of the business (Lynch et al., 2016). This becomes particularly important in light of the predicted increasing adoption of artificial intelligence among businesses in the coming years (Albert, 2019a; Chui & Malhotra, 2018; Columbus, 2018). Additionally, by being aware of ethical issues with artificial intelligence and having indications of how to deal with them, the trust in artificial intelligence applications will be increased. As Accenture (2016a,b) and Winfield & Jirotka (2018) point out, trust plays a major role in the success and adoption of artificial intelligence and its application. This, again, underlines the added economic/business-profit benefit and value of this paper's contribution.

6.4 Limitations

One of the **limitations** of the study lies within the fact that AI is, as previously mentioned, a very quickly developing and changing topic. Therefore, it is to be expected that even some of the newest (scientific) literature on AI in marketing is potentially slightly outdated in a rather short amount of time. This may be due to the delay between writing and publishing a research paper/management review article. Moreover, it proved to be rather difficult to find interviewees at all that wanted to provide input; many that were contacted via mail either did not respond to the inquiry or did not feel like they were knowledgeable enough on the topic, which, again, relates back to the fact that AI is constantly evolving and it is getting increasingly hard to keep up to date with the latest developments and events.

6.5 Further Research

Deriving from the study results, **further research** topics can be pinpointed: One of the aspects that may be interesting to get a more in-depth view into is the actual effect of implementing the proposed guidelines on marketing activities, as well as the effect on the businesses overall. Researchers may want to (a) investigate if and/or how improved ethics increase marketing KPI's and how that, in turn, affects e.g. overall profit, and (b) which of the five levels has the most significant impact on e.g. marketing KPI's.

With regard to the anticipatory approach and the various foresight methods available, neither the literature nor the interviews revealed a clear go-to foresight method. It may serve businesses very well if they could predict future outcomes more accurately; therefore, researchers could investigate the long-term effectiveness of the individual foresight methods to see which foresight method produces the most accurate results in predicting ethical impacts of AI. By conducting such research, businesses could more easily start using the right foresight method for their needs rather than spending valuable time deciding between all the possible methods, possibly using a less effective method.

Lastly, one of the most significant aspects brought up by the experts was the importance of case-specificity based on three factors: Resources, application of AI, and environment. Exploring the impact of different variables that contribute to the case specificity may be very interesting and may provide even more detailed, and potentially new insights and discoveries. By analysing the significance of e.g. B2B vs B2C environments, different industry sectors, and small companies versus global players, detailed research could be conducted with regard to which of the variables has the most significant impact on ethical issues and guidelines or if they even are significant at all.

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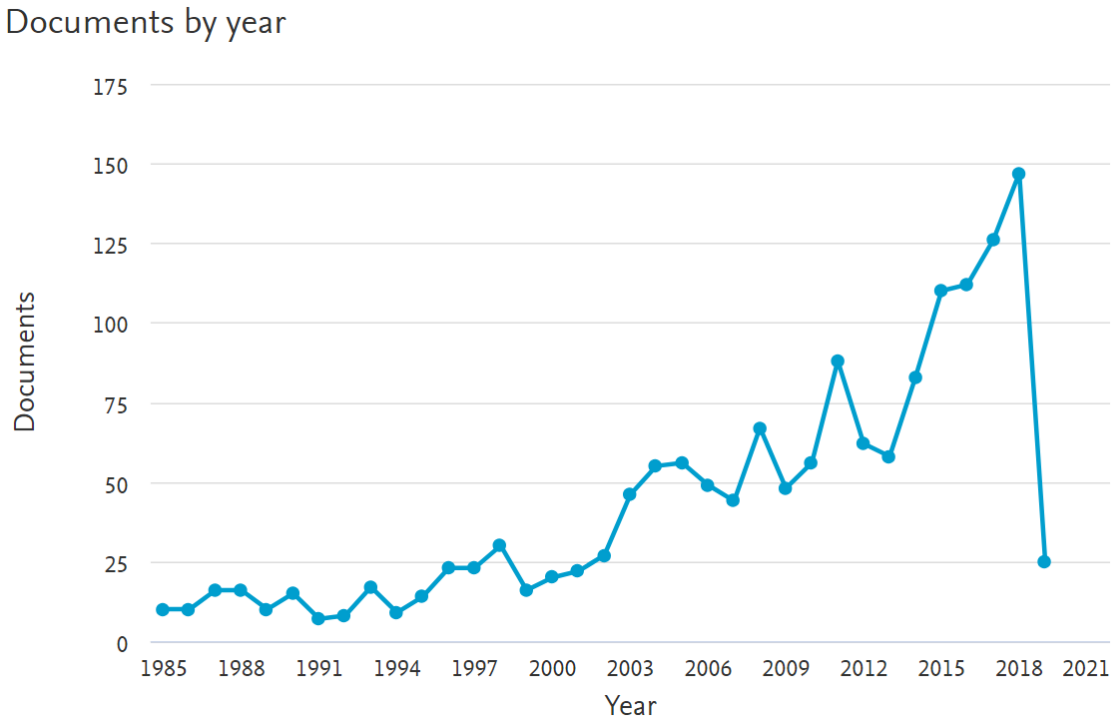
9. APPENDICES

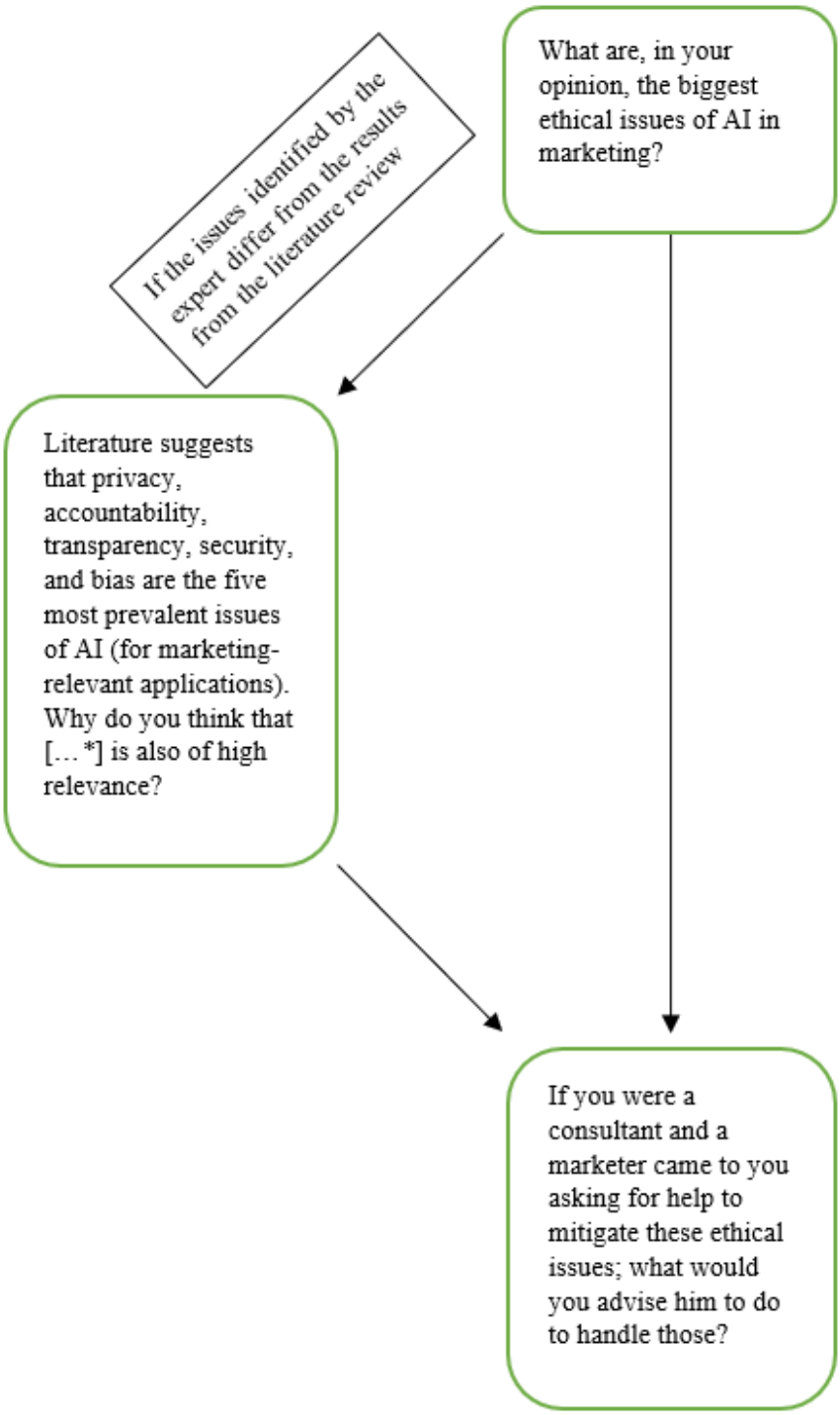
Appendix A – Introduction

A.1 Number of publications that contain both "artificial intelligence" and "marketing" in either their keywords, abstract, and/or article title. Data source: Scopus Analyzer (Retrieved from ("Scopus - Analyze search results," n.d.)



Appendix B – Methodology

B.1 Interview model – Main guiding question



**Placeholder for the differing ethical issues the expert mentioned*

B.2 Queries used to find adequate literature

(A)	(B)	(C)
• ***(a) "ethics" +***	• ***(b)"ethical issues" +***	• **"artificial intelligence"**
• (i) "artificial intelligence"	• (i) "artificial intelligence"	• **"AI"**
• (ii) "AI"	• (ii) "AI"	
• (iii) "emerging technologies"	• (iii) "emerging technologies"	
• (iv) "emerging technology"	• (iv) "emerging technology"	

Appendix C – Interview Results

C.1 Interview Results – Key outcomes per interviewee for ethical issues of AI and proposed guidelines for marketers

Interviewee	Ethical issues of AI in marketing	Tips/Guidelines/Approaches for marketers to deal with the ethical issues of AI in marketing
Interviewee Nr. 1 (male): ***Behavioural scientist in technology, 30 years of research interest in appropriate use of technologies***	• Inability to predict future impacts on ethical values • Transparency	• Get top-management support • Build teams with different people of multiple disciplines • Think from a customer/human perspective • Always re-evaluate and readjust (feedback) • Create a code of ethics • Try to foresee what issues may arise (anticipatory approach) • Have open R&D
Interviewee Nr. 2 (male): ***Assistant professor for Ethics of AI***	• Privacy • Accountability • Bias • Security • Transparency • Special importance: Transparency and bias	• Stakeholder engagement • Create a code of ethics • Create an "authentic dialogue": Offer people two options: (a) opting in (data is collected and used) (b) opting out (data is not collected/used) • Ethical training for employees • Strategy must be very case-specific
Interviewee Nr.3 (male): ***Researcher in Ethics & Technology***	• Privacy • Potential misuse of AI (an issue of security/transparency/accountability) • Creation of a "bubble" (bias)	• Think from customer/human perspective • Follow the law • Offer option to opt out of data collection/personalization/marketing activities (data is not collected/used) • Ethical training for programmers and marketers • Have customers actively interact with the AI/touchpoints • Shared accountability for both programmers/marketers and customer
Interviewee Nr. 4 (male): ***Researcher in Ethics & Technology and member of UNESCO-COMEST***	• Accountability • Unwanted influencing of people's behaviour (not giving them multiple options) • Impact of AI on societal values • Transparency • Bias • Privacy • Security • Inability to predict future impacts on values	• Start at early stages of design process • Identify what values are important and look at how AI affects these value • Stakeholder engagement • Anticipatory assessment • Create a code of ethics • Provide evidence of ethical behaviour to stakeholders (be transparent)
Interviewee Nr. 5 (male): ***Business Development & Communication Manager***	• Data collection and use (privacy and security) • Transparency • Inability to predict future impacts on values	• Basis: Ethical training for employees and code of ethics • Get top management support and involved with value/norms • Follow the law • Anonymized data to build basis, then further enhance by collecting voluntarily submitted data • Be transparent about how data is collected, used, stored, and handled • Always re-evaluate and re-adjust • Think from a customer/human perspective

		• Think about the impact of the decisions made and if it is acceptable in the long-term • Ask the "why" and what is the end-goal is, then see if the AI-application is in-line with the ethical code • If AI-algorithm is supplied by external provider, question if supplier is in-line with your ethical standards (case specificity) • Communicate transparency to stakeholders and provide evidence • Gather feedback from stakeholders
Interviewee Nr. 6 (male): ***Lead Developer Think Tank***	• Data collection, data use (privacy and security) • Transparency • (Bias)	• Follow the law • Separate data used for training of AI from personal data directly from the beginning and anonymize them (most important) → communicate that as a primary sale argument • Create customer classes and pseudonym profiles rather than easily trackable real profiles • Be transparent about data collection, use, storage to stakeholders • Always control training data and algorithms
Interviewee Nr.7 (male): ***Business Unit Manager (Sales and Marketing background)***	• Data privacy and security • Accountability	• Talk to top management • Follow the law • At least one specialized marketeer for ethical issues (ethical training) • Cross-departmental cooperation with finance-department and IT-department • Include external audit/consultancy • Strategy must be very case-specific