

ARTIFICIAL INTELLIGENCE AND THE ETHICAL USE OF KNOWLEDGE

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Abstract

While artificial intelligence is becoming part of daily life, bringing with it a large number of benefits to companies and society as a whole, it's fast-paced introduction presents unique ethical challenges. Having the ethical and legal framework in mind, the present study aims to map which are the critical ethical aspects related to artificial intelligence by focusing on three main lines: knowledge handling, managerial processes, and the relationship with consumers as viewed through a marketing/branding framework. Knowledge and algorithmic bias and decision autonomy are discussed in the context of these three main lines.

Keywords: *artificial intelligence, business ethics, knowledge management*

Introduction

Though artificial intelligence has been historically more prevalent in science fiction than in board meetings the recent technological advances in both computing power and algorithms seem to be moving Mr. Data from the bridge of the Federation Starship Enterprise in meetings with managers at all levels. The science-fiction dream of having an unbiased, unlimited knowledge collaborator seems to be closer to us now more than ever. However, dreams have a chance of turning into nightmares as the same technology that can be used for good, experience teaches us, can be misused, whether intentionally or not. To put it another way and keeping with the same metaphor, we can get Data or we can get Lore in our meetings. And Lore may have an interest in influencing and controlling our decisions.

Even if the significant value of AI and its complex use are generally recognized, there are also many critics and ethical concerns. For instance, Elon Musk, Bill Gates, and Stephen Hawking believe that AI is “potentially more dangerous than nukes” – as the first one expressed his concerns, arguing in the same vein as science-fiction scenarios (Metz, 2018). AI also poses a series of political and military concerns (Larson, 2018).

Regular companies exist for profit (Friedman, 1970), even if some equally assume additional socially responsible missions. Therefore, there is a high temptation to adopt unethical behavior if an increase in profits is expected. Limits of the legal and ethical norms are constantly tested aiming for higher revenues for shareholders. Therefore, there is a risk for companies to use artificial intelligence in an unethical way for profit growth, especially. The lack of experience and insufficient regulation in this field are factors increasing this risk.

Having this framework in mind, the present study aims to map which are the most critical ethical aspects related to artificial intelligence. To reach this goal, a descriptive literature review is developed, focused on three main lines. First, the concept of artificial intelligence and its relationship with knowledge handling is discussed. The following section discusses ethical aspects related to the use of artificial intelligence in connection to managerial processes. The next section discusses the ethical challenges of using artificial intelligence in relationships with consumers – having in mind a marketing/branding framework. Conclusions and implications are discussed in the final section of the paper.

Artificial intelligence (AI) and knowledge

There is an increased interest in AI both in an academic framework and a business one. Since it has a high potential to lead to profit growth, most top managers consider it as important for the future success of their companies (E&Y, 2019). Nevertheless, the level of adoption of AI strategies is much lower (MIT Technology Review Insights & E&Y, 2019). This situation shows that the domain is only emerging and many facets of AI still have to be explored. A starting point would be to understand its significance.

At the present, there is no universally accepted definition (Allen, 1998; Simon et al., 2000; Nilsson, 2009; Wang, 2019). Legg and Hutter (2006) have collected and classified 70 separate definitions of intelligence. They grouped the collected definitions under three large categories: collective definitions (proposed by groups or organizations), psychologists' definitions, and AI researchers' definitions. Russell and Norvig (2010) present another approach to the definition of artificial intelligence by dividing the available definitions into four categories based on one hand on their rationality and similarity to the “human” way and the other based on thinking and acting. Basically, they propose classifying AI definitions by matching them to one of the following general categories: acting humanly; thinking humanly; thinking rationally; acting rationally. Different approaches are to be observed between technical papers and conceptual ones, or between academic papers and those connected to the business environment (Zbucnea, Vidu, & Pinzaru, 2019). Some focus on practical aspects, others are philosophical, some are metaphorical while others are as concrete as possible.

There are cases in science when formal definitions appear only after the field matures (Wang, 2019) and it is not considered a problem since, as the research field matures, the spread between the available definitions reduces. Also, as pointed out by Thórisson (2020), definitions affect the way phenomena are studied, and the lack of a definition in the initial stages of research has probably had the consequence of allowing the AI field to “grow, blossom and advance at an ever-accelerating pace” (Stone et al., 2016). However, as Wang (2019) also points out, the definition guides the research path. The significant difficulty here is not with the “artificial” part of the term (which, as per Cambridge Dictionary, simply means “made by people”), but rather with the “intelligence” part of it.

One of the definitions that benefits from significant coverage sees AI as being that “combination of cognitive automation, machine learning, reasoning, hypothesis generation, and analysis, natural language processing, and intentional algorithm mutation producing insights and analytics at or above human capability” (IEEE, 2017). Having this definition in mind one observes that the raw material of AI is data which in turn can be used to support knowledge transfer and produce new knowledge. Even more, AI could effectively operate in a knowledge-scarce framework. Therefore, there are various perspectives in the academic literature investigating the relationships between AI and knowledge management (Liebowitz, 2001; Metaxiotis, Ergazakis, & Psarras, 2005). Most of them are concerned with practical aspects (Zbucnea, Vidu, & Pinzaru, 2019).

Alternatively, Fjelland (2020) brings forth a different hypothesis by discussing the causal knowledge building employed by humans (by using available data and their ability to intervene and force well-designed changes to the experiential environment to test hypotheses, infer a cause, and build a causal model) and the correlative knowledge building brought forth by AI, machine learning, neural networks and the Big Data revolution where it is enough to use huge amounts of data to find statistically relevant correlations to detect patterns.

This Big Data approach to knowledge carries an inherent risk as there is significant danger around issues such as bias and inclusion in the underlying data sets employed for training the models by disregarding niche users and nuances (Lauterbach 2019). This becomes more important in the context of AI transparency and explainable models.

AI is also connected to knowledge-based systems, contributing to their design, development, and reengineering (O’Leary, & Selfridge, 1999). It contributes to successful data mining, generating competitive advantage, and more effective management (Folorunso, & Ogunde, 2005). AI could support knowledge management in many aspects, including creating an effective knowledge management system (Liebowitz, 2001).

AI and ethical management

AI has become a global concern because of its contribution to economic development. McKinsey Global Institute notes that “the impact of AI may not be linear, but may build up at an accelerating pace over time” (Bughin et al., 2018). Due to its high practical relevance, AI is also increasingly wider adopted by businesses. AI can support business

development in many ways, from its administration to decision-making and business processes reengineering (Hamscher, 1994; O'Leary, & Selfridge, 1999).

The multiple impacts of AI on business are too wide to be covered in the present paper. Therefore, we will briefly focus only on the main influence on management. In sustainable organizations, AI does not replace managers. Managers should work with AI, adding empathy, and observing ethical concerns (Kolbjørnsrud, Amico, & Thomas, 2016). Several practices should be considered by companies: administrative tasks to be controlled by AI, support for decision-making, embedding design thinking, support development networks.

The legal implications of AI carry important consequences to the adoption of AI in businesses. Nevertheless, there are few laws specifically dealing directly with particularities of AI decisions (Kingston, 2016; MIT Technology Review, 2018; Scherer, 2015). Strictly regulating the field is important since the increase of the AI capabilities provides it with more powers and increases the responsibility that the AI itself carries for the decisions.

Ethical concerns related to AI are rather an old phenomenon, having two main facets – which knowledge and aspects of the decision-making aspects to entrust to AI and responsibility associated with AI processes (Taddeo & Floridi, 2018). Besides delegation and responsibility, invisibility and influence are two other key concerns related to AI. These last two aspects are tightly related to the use of AI in marketing.

In dealing with AI, several aspects would be relevant when considering the moral consequences of the actions of AI. One of them is liability. Product liability is the most basic form of liability. Bequai (1988) discusses this in the context of the early expert-systems and argues that AI can be treated as products from the perspective of liability. This suggests that at the very least AI systems carry a risk in this area and that the risk should be evaluated and budgeted when designing, selling, and using AI products.

Another position is taken by Scherer (2015) who considers the topic of public risk. He argues that regulation should be considered for the field of artificial intelligence due to the very clear risks that it poses. The increasing degree to which the current forms of artificial intelligence are permeating our lives makes it important to analyze the public risks and consider the possible paths of action. Considering various associated risks and AI's complexity, the academic community is not the only one arguing for regulation of the field, the industry itself is voicing concerns regarding the lack of oversight and the high risks involved. Elon Musk, Bill Gates, and Steve Wozniak are quoted by Scherer (2015) voicing concerns about the development of AI without international oversight.

Nevertheless, regulation is not enough to protect businesses and markets from the risks associated with AI. The legal framework provides an acceptable level of protection. Still, sensitive ethical concerns might emerge in connection to AI use. An exhaustive identification is not possible considering the limitations of the present research. Nevertheless, we specify some of the most frequent concerns in academic literature. Harming humans is, as already mentioned, one of the widest-spread concerns (see also Bostrom & Yudkowsky, 2014). Another frequent concern is the AI algorithms, their transparency, and biases that paradoxically might appear in the context of machine learning (Bostrom & Yudkowsky, 2014; Larson, 2019). Ensuring a moral decision-

making framework for AI becomes critical for management, included from the perspective of risk management. This challenge is not easy to face (Conitzer et al., 2018).

Generally, ethical concerns towards AI go in several directions: transparency, justice, and fairness, non-maleficence, responsibility, and privacy (Jobin, Ienca, & Vayena, 2019). Additionally, explicability is a dimension specifically linked to AI (Piano, 2020). Still, the ethical aspects covered by AI ethical guidelines are more complex (Hagendorff, 2020, p.102), and additional ones will emerge as the domain develops. Being a relatively new field, AI development is agile but also lacks stability and professional norms/accountability (Mittelstadt, 2019). This is another aspect that could generate ethical concerns in AI practice.

Some ethical questions raised by AI commercial use have led to the establishment of guidelines to support fair business practices (Piano, 2020). Taking into consideration the perspective and values of stakeholders, monitoring the impact of AI-based decision making and improving the use of AI during the full life-cycle are among these dimensions. Greene, Hoffmann, and Stark (2019) identified the following themes which ensure the moral background of AI: Universal concerns, objectively measured; Expert oversight; Values-driven determinism; Design as a locus of ethical scrutiny; Better building; Stakeholder-driven legitimacy; and Machine Translation.

AI and marketing. Ethical dilemmas

AI has many applications in digital marketing and brand management. It can greatly reshape service delivery, for instance, supporting mass customization (Grandinetti, 2020). Another aspect to consider is that big data has become critical for marketing/branding, and AI facilitates its exploration and valuation. Even more, marketing-related AI applications have been developed to augment capabilities (Davenport et al., 2020).

Marketing activities of brands under the environment of electronic commerce have shown a series of new characteristics due to the reframing of marketing operation models which differ from traditional modes. Nowadays for successful marketing and brand management, tightening relationships with consumers is a necessary path. AI is changing these encounters because of the increasing data sets which allow analysis and contextualization of information that has inherent benefits... but also vulnerabilities to individuals and society, real and yet to be revealed. (Chi, Denton, & Gursoy, 2020; Kumar, Rajan, Venkatesan, & Lecinski, 2019; Robinson, 2020).

Nevertheless, AI also comes with risks for companies and consumers. AI presents challenges in the field of data protection and privacy, transparency, accountability, or other ethical aspects (Larson, 2019; Lu et al., 2020). These aspects determine some segments of the audience to be reticent towards the (extensive) use of AI – for instance in cases when clients were informed that there was a chatbot service answering, the purchase rates dropped significantly (Davenport et al., 2020). Several ethical concerns have been manifested concerning the use of robots (Bershidsky, 2017; Lu et al., 2020).

One of the subfields of AI having the greatest impact in digital marketing is machine learning, software systems, and applications that learn from data and user actions. The approach of the latest AI learning applications outlines the main benefits of composing

predictions about consumers' actions, their value, as well as classifying data into useful categories. Emerging technologies that schedule meetings, respond or deliver tailor-made content or messages, writing emails on the company's behalf can turn out a range of possible outputs rather than just an action with a clear right or wrong answer (e.g. multiple persons are interested in the same product and which is the threshold for purchase decision) or a strictly binary decision (Will this customer have a steady engagement or will churn?). (Satapathy & Rath, 2016)

Present-day consumers expect brands to customize messages to their specific context, demographics, interests, or behavior. Many will not engage with brands or may ignore non-tailored marketing content. Artificial and machine learning systems enable marketers to customize their communications and brand experience on an individual clustered level rather than generic target groups that marketers relied on in the past (Taddeo, 2017), therefore, contributing to brand engagement and driving sales.

This technology empowers the prediction of customer behavior based on knowledge about consumers learned from previous brand interactions. This means that marketing specialists can develop content and marketing actions that are most likely to convert the lead into a sale, at the best possible times increasing the conversions rate and brand consideration (Borenstein & Arkin, 2019).

Artificial intelligence ethics becomes more important when is given the ability to recompose consumer brand experience without consumer awareness or choice (Rao, Srivatsala & Suneetha, 2016). Invisibility and influence become moral concerns (Taddeo & Floridi, 2018).

Digital marketing could effectively benefit from AI in several ways:

- AI can allow for hyper-personalized customer experience by analyzing their profiles.
- AI speeds up the design of multiple content types and formats, based on unique customer profiles.
- By making accurate predictions based on patterns that emerge from processing vast quantities of data AI can predict customer actions and behavior identifying and nurture the most valuable leads.
- AI-powered software can decide based on big data, user profile, and digital footprint what content to create and when to distribute it.

As it shows, today artificial intelligence systems have increased advantages with high efficiency and low costs compared to traditional human customer service in the field of business and digital marketing. But at the same time, it is also said that the current AI customer service systems still have general weaknesses. For example, the response is inflexible, the tone is rigid, the form is single, and the lack of care. Ultimately, there is a high degree of automation on the company and brand side, but no significant increase in success rates, and a significant downgrade of user experiences on the customer side (Arnold & Scheutz, 2018).

AI and consumers. Responsible approaches

The advancement of ML (machine learning) and AI-related developments are facilitating the automation of many digital marketing activities (e.g., in social media and content points) allowing the emergence of big-data-driven and micro-targeting marketing practices, forecasting all day, analyzes patterns, oversees custom feeds to produce content (e.g., personalized content recommendation algorithms). (Wierenga, 2010)

AI can rapidly and precisely project a 360-degree view on clients in real-time, enabling knowledge in many ways, by creating a comprehensive profile of current or potential customers improving customer experience, and prospecting of future customer actions. Besides, AI can enable marketing efficiencies and action effectiveness at each stage of the customer journey and sales touchpoints.

Current and past web browsing behavior, psychographic and demographic characteristics, type of purchases, brand interactions, content preference along with any form of structured and unstructured data inputs of various types, such as recency, size, frequency are dimensions mapped by AI which can contribute to prospect scoring, i.e. evaluating prospects based on their propensity to buy and identifying high-quality leads (Kanagarajan & Arumugam, 2016). The amount of data pulled by companies these days is staggering and it became obvious that how you handle that data is key to being able to utilize it. Moreover, the ethical challenges regarding data computing facing us today we will be presented with new and elaborate one's tomorrow (Rao, Srivatsala & Suneetha, 2016). AI could also eliminate data paralysis, which is a risk connected with human-based marketing decision-making processes.

The paramount importance of AI for marketing has been also revealed by the Covid-19 pandemic. This unprecedented health crisis has determined business groups to drastically reduce the number of staff working, while a large portion of the population who are quarantined at home has exponentially increased the number of online requests for services, products, and acquisitions (Seth, 2017). Still, in the peak of the crisis, understaffed companies are scrambling to build comprehensive artificial intelligent customer service systems to handle the new influx of specialized items and requests. From February to April 2020 online shopping has doubled for many business segments, retailers are reporting some of the biggest online sales gains in their history. At the same time, more people reported problems with online shopping about sellers failing to deliver on promises. Scammers have sharpened their ability to put up remarkably polished looking websites, deceptively operate social media and online advertising to their advantage, making this an imperative issue since the web furnishes scammers cheap access to consumers and consumer data worldwide (Taddeo, 2017).

Online fraudsters have adapted well-known fraud schemes to capitalize on the anxieties and fears of victims throughout the crisis like counterfeit healthcare and sanitary products, fake brands, and cheap products. Taking into consideration actual standards, clever marketing communication doesn't have to align with ethical corporate behavior to please customers. However, in a time of crisis, when hedonistic consumerism takes a backseat to responsible conduct, the standards change suddenly and drastically. People who haven't been as comfortable with e-commerce and other digital technology have been pushed to overcome their hesitancy (Eshak, Ahmad & Sarlan, 2017).

As businesses adapt, their watchwords must be trust, relevance, and convenience. Many brands and marketers still find it difficult knowing when and how to talk and to reconfigure consumer experience and this pandemic crisis brought a spin in how brands managed to keep consumers interested and engaged, in many cases having undesired effects on business overall. In some ways, it is not appropriate to post anything that isn't related to the virus, as if the brand is shouting to a consumer that doesn't live in a real context. How many customers nowadays want to hear about luxury skincare products, handmade earrings, or special branding services when half of the world is collapsing under the strain of an unstoppable virus? This is where the debate begins, with one side of marketers arguing for the continuation of pseudo-normality and holding on to the traditional marketing approach were providing for needs is more coveted than strategic adaption to consumer context and others struggling to process and reposition anything that is consumer data-driven and virus-related (Rao, Srivatsala & Suneetha, 2016).

In the new context, brands and marketers tackle this health-issue and associated ethical concerns, at the same time coping with the ever-present demand for reassurance and repositioning a new-normal of the consumer experience. Some important ethical implications of responsible AI actions that have emerged are (McCaig, 2020):

- Customers and digital audiences are virtually intolerant to fake or selectively blind statements from brands;
- The no-action implication for the customer of any changes or adjustments made to services or products (increasing of delivery processes and prices);
- Customers information about the procedures and measurements you've put in place to keep them safe and protected;
- Making use of the customer feedback – the real coefficient of user responses negative vs. positive to the brand typical promotional post;
- Expand the brand definition of responsibility related to consumption and data processing.

The world, at least for now, no longer operates like it normally would, and brands have had to make rapid changes to their marketing strategies. Some of the most obvious shifts concern media communication and digital ads (Yuniarthe, 2017). But probably the most important one is a long-term concern with integrating AI in marketing and branding processes.

Conclusions

The advantages of AI and machine learning offer a huge potential to businesses and society. The ability to process big data at scale and use machine learning to get insights from that data has shifted the balance between enterprises and consumers. Band and product proposal used to be unidirectional and one size fits all but, thanks to machine learning, relationships between consumers and businesses are becoming bidirectional: the actions consumers take and demand provide a window into who they are, what they want, and what they value. As in interpersonal relationships, companies can listen to this feedback and use it to render more relevant products, services, and experiences.

AI machine learning and innovation are deeply implemented in marketing and communication, becoming more and more omnipresent and unobtrusive. In consequence, we become decreasingly aware of the extent to which our choices are

planned and how little freedom of choice we have left. It is obvious that AI has the potential to transform the way we live, interact with companies, and work, therefore it is important to develop appropriate limitations and elaborate controls.

Our modern societies are built on an idea of freedom of choice which is referred to as the “autonomy” of the individual, considered to be the foundation of the sovereignty of the people. However, our contemporary societies seem to be handling much of the individual’s control over to AI, to the point where the autonomy given to individuals is eventually shifting.

Associated risks notwithstanding, it is obvious that artificial intelligence is here to stay and it is sure to continue to shape marketing and customer experience in the future. As has been stated, there are many benefits associated with AI when it comes to marketing; improved product and content recommendations, better social engagement, better customer service, better contextual experience, and improved search. However, marketers should be careful, and utilize AI wisely to avoid eroding consumer trust by over dehumanizing the brand relationship. This involves transparency and responsible marketing tactics.

AI and machine learning are not regular technology, therefore, it needs to be approached differently than regular technology maneuvering. The power of AI to fuel the extremes of business performance on both perspectives, positive and negative, requires a purposeful approach built on three pillars: robust and reliable technology infrastructure and data processing power; a specific focus on utility functions, new business models, and social context; a thoughtful approach to ethics and human rights. An AI strategy needs to be built on a solid foundation to survive the strong winds of change and at the same time has to be developed by balancing the following for money to the following of society's best interests.

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