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Speak Up! Legal Challenges in the Light of the Determination of Emotion in conducting Targeted Advertising through a Voice Recognition Device

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CHAPTER I
INTRODUCTION

1. Background

The development of artificial intelligence (AI) was sown long before the trend of modern computer. Dating back to 1956 when Claude Shannon started the possibility of a computer playing chess and the type of strategies needed in order to decide which move to make next.¹ Throughout time, AI started to emerge and being deployed in a wide variety of devices and machines to help the humankind. AI could best be defined as a set of techniques aimed at approximating some aspect of human or animal cognition using machines.²

AI can be embedded in many forms, and one of them is voice recognition technology. This technology has the ability to recognize a voice of an already known person by encode a voice and store some representation of it in its memory.³ The blooming of voice recognition feature has started to expand in personal digital assistant technology such as iPhone Siri and Amazon Alexa.⁴ This technology offers a human-like interactive feature as a part of its functions. Amazon Alexa, for instance, can deliver information on the current traffic situation, plays music, control smart appliances, suggests recommendations on products, and the user can order Alexa to purchase some goods from Amazon websites.⁵ The features seem to attract consumers and it is reported that approximately more than 100 million Alexa built-in devices have been sold in the market.⁶

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¹ Kevin Warwick, Artificial Intelligence: The Basics (Taylor and Francis 2013), page 3.
In 2018, Amazon has been granted a new patent on its virtual assistant, Alexa. The patent on ‘voice-based determination of physical and emotional characteristics of users’ could enhance the performance of Alexa, which enables the device to monitor and detect real-time emotional states of the user. At first, the device will store some representation of the voice data and combine it with the user’s traits. Traits might involve physical characteristics of the user (such as age and gender) and their wide ranges of emotional states. Afterwards, when the device receives voice input from the user, it will automatically determine the emotional states of the user based on their pitch and the volume of the voice. Moreover, Alexa will be able to present targeted advertising based on the detected emotional state of the user. An example was given: Alexa detected that there is a sadness contained in the voice whilst the user interacting with the device, Alexa will respond with certain suggestions that could ease the sadness such as ordering food or buying an album from a paid musician.

Targeted advertising refers to generated advertising based on different parameters. In the past time, targeted advertising usually being done through cookies, which is an electronic code contained in the user’s hard drive. The practice includes tracking the user across web sites in order to infer the information regarding the user’s interests and preferences. Cookies will collect user’s information such as items purchased online, web sites visited, IP address, and so forth. Through this information, a profile will be created in order to present the user with a personalized advertisement. It increases efficiency while at the same time delivering more relevant advertising to the customers.

Amazon Alexa voice recognition uses a machine learning technique in which the more one uses the device, the more personal data it collects, the more opportunities the digital assistant

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10 Richard A. Spinello, Cyber Ethics: Morality and Law in Cyberspace (2nd Edition, Jones and Bartlett, 2003), 178
can improve their service to anticipate one’s particular needs. However, the patent posed a risk of harming the user’s autonomy since the user is unable to leave their emotions to go undetected by the device. Technology is never neutral after all. It can enhance autonomy when it improves the ability to make informed choices, whereas it can diminish autonomy when it interferes with or pre-empts choices and imposes preferences of the user.

Consumer laws are trying to overcome this power imbalance by protecting the consumer from unfair commercial practices that can threaten their autonomy. Consumers can be considered as weak due to the mental or physical constraints, or because there is a little access to the product information. The former group of consumers is protected under the notion of vulnerable consumer.

Due to the nature of collecting, storing, and sharing the data to provide the user with a tailored advertisement, the obligation on the data protection regulatory framework shall be imposed on Amazon. The General Data Protection Regulation (GDPR) gives a wide range of what constitutes personal data. However, emotion is not accounted for in the GDPR since in most cases of emotion detection, personal data is not generated to separate one person from the next. The mainstream literature mostly focusing their criticism towards one element of the concept of personal data, which is the identifiability of a person. It is crucial to determine the identifiability since the scope of GDPR may not covers emotion as personal data if there is no element of identifiability.

The use of voice in Amazon Alexa emotion recognition may lead to the classification of emotion under the notion of biometric data regulated by Article 9 GDPR. The biometric recognition establishes the person identity based on his inherent physical and/or behavioral traits.

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12 Maurice E. Stucke and Ariel Ezrachi, ‘How Digital Assistants can Harm Our Economy, Privacy, and Democracy’, 32 Berkeley Tech. L.J. 1239 (2018), 125.1
15 Andrew McStay, Privacy and The Media (SAGE Publications 2017), page 142.
either in fully automated or semi-automated manner.\textsuperscript{17} Accordingly, biometric data should be subjected to stricter regime of data processing since essentially, the processing of sensitive data should be prohibited.

The GDPR provides an exhaustive list of exemptions in which processing of sensitive data can still be conducted. Therefore, the processing of data should be analysed in each layer of exemption stated in Article 9 (2) GDPR. Most companies will rely on the explicit consent given by the data subject to ensure the lawfulness of data processing. However, since the technology may pose some risks from the perspective of human autonomy, one could question the lawfulness of the data processing when it is based on consent. Therefore, if consent as the basis of processing is not valid, there are other processing grounds that need to be considered.

2. Literature Gap

The utilization of emotion embedded in various devices is a rising phenomenon in the development of AI.\textsuperscript{18} It involves machine-readable emotion that can assess words and images by sensing facial expression, gestures, or voice. Combined with machine learning, this sensing facilitates emotional intelligence to detect the emotions, learning the human behaviour, and to respond to it accordingly.\textsuperscript{19} Due to the robust popularity of voice recognition, there is a plan to equip the voice recognition device with the ability to detect the user’s emotion. One of the embodiments is the patent publication on Amazon Alexa emotion recognition.

There are previous literatures that mainly discuss the development of emotion AI. However, there is no specific literature that address the issue of emotion AI in the form of voice recognition as a marketing tool. Voice is one of the most important factors in the affective analysis since it is among the most natural, non-intrusive and convenient of all such characteristics.\textsuperscript{20} It may reveal emotional states of the user, physical condition of the user, or

\textsuperscript{17} Anil K Jain, \textit{et.al.}, \textit{Introduction to Biometrics} (Springer-Verlag New York 2011), page 2.
\textsuperscript{19} \textit{ibid.}, page 2.
other personal traits such as age and gender. Service providers may build a profile based on these states to target the user with a suitable advertisement.

The commodification of emotion could challenge the adequacy of current legal regimes. Data protection and consumer law both have the primary concern to protect the autonomy and dignity against the negative use of nudge theory, framing and behavioural economics. Therefore, it is crucial to determine whether the current legislations in both regimes are adequate to overcome the issue.

3. Research Question and Structure

Thus, with what we have elaborated above, the following research question can be raised:

“How is targeted advertising inferred from the emotional states of the user which is detected through voice recognition device currently regulated under the European Union (EU) law regime, and are the regulatory frameworks adequate to mitigate the risks?”

The sub-questions employed to support the analysis carried out to answer the central research question are as follows:

1. How is the overview of targeted advertising in the patent publication of Amazon Alexa emotion recognition?

In order to answer the main research question, the thesis will first describe the development of emotion AI in digital advertising industry. Afterwards, the thesis will outline the process of inferring the user’s emotion to conduct targeted advertising through voice recognition technology.

2. What are the risks and challenges posed by Amazon Alexa emotion recognition under the notion of consumer protection and data protection regime?

Accordingly, there will be an assessment to point out the problematic steps in the technology. The risks and challenges posed in Amazon Alexa emotion recognition will be described and

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EFC1F54431B7A29D2A4866142385C55E47A079CA6775FCF35F7BF4CF4FCDB52> accessed 16 December 2019, page 442.
22 ibid., page 6.
analysed according to the data protection and consumer law perspective. This chapter will highlight the monetization of emotion in the light of consumer vulnerability and autonomy. The risks in the practice will also be described based on the data protection principles.

3. How are the current regulatory frameworks on consumer law and data protection addressing the risks posed by Amazon Alexa emotion recognition?

This chapter will outline how the regulatory frameworks on consumer law and data protection overcoming the risks in Amazon Alexa emotion recognition. There will be an analysis on the implementation of consumer law in the context of targeted advertising. This section will delve into how consumer law mitigates the risks in the human autonomy and consumer vulnerability. The next section will describe the risks according to the GDPR as the main data protection framework in the EU. The categorization of the data and data processing under the GDPR will be further explained. This section will mostly describe the notion of biometric data as a special category of personal data due to the use of voice as the data being collected. However, the analysis will also take into account the implementation of Directive 2002/58/EC (ePrivacy Directive). This is to investigate the legal grounds on the processing of emotion data to infer it as a targeted advertisement.

4. Are the current regulatory frameworks adequate to mitigate the risks posed by the commodification of emotion to conduct targeted advertising in the voice recognition technology?

In the last chapter, there will be a thorough assessment of whether the current regulation is adequate to overcome the issues. The analysis will refer to the previous chapters on how the current regulations mitigate the risks which occurred through Amazon Alexa emotion recognition. The challenges in data protection and consumer law will be outlined if current regulations are deemed as insufficient.

4. Research Method

In order to answer the research question and the sub-questions above, the thesis will use doctrinal legal research. Doctrinal methodology comprises of in-depth analysis of the legal
doctrine with its development process and legal reasoning.\textsuperscript{23} It aims to identify the law, as well as the development and the implementation in the issue chosen. This is purely theoretical research that consists of either simple research aimed at finding a specific statement of the law, or legal analysis with more complex logic and depth.\textsuperscript{24} The research will be conducted through collecting wide ranges of primary sources surrounding the topic in order to create legal basis for the issue. There will be an analysis on the primary sources of law which include relevant laws, regulations, case laws, and patent publication. However, the analysis will also use secondary sources such as doctrines, literatures, and legal reviews that could support the analysis of the overall thesis.


CHAPTER II

THE OVERVIEW OF TARGETED ADVERTISING IN AMAZON ALEXA EMOTION RECOGNITION

This chapter is divided into three sections. First, the development of emotion AI in the field of advertising industry is described. Then, the process of targeted advertising in Amazon Alexa emotion recognition will be outlined. The description of the data flow is depicted using the patent publication. The third section will identify the types of data that has been further processed in each stage of the servers.

1. The rise of emotion AI

In order to capture the heart of the audience, marketers will always find their way to advertise their goods and services. Emotion itself can best be defined as the physiological response to external stimuli. Furthermore, advertising researchers are learning to measure and evaluate how emotion can influence the overall impact of advertising. The process of decision-making in the process of buying a product has a heavy emotion-based dimension to it. In determining advertising effectiveness, attention and cognitive measures which involve interest, boredom, skepticism, and other cognitive measures from consumer is frequently assessed.

The increased study on emotion has leveraged into the field of AI. There is a current trend to develop AI that can comprehend the emotion of a human being, which mostly defined as affective computing. In the past, ‘affect’ or emotion was rarely linked to a machine. Picard, introduced the idea of ‘affective computing’, or computing that relates to, arises from, or influences human emotions. The idea behind affective computing is a belief that even though the machine does not feel the emotion, computer science can be designed to process, recognize,

interpret, and simulate the human affect to improve the quality of the communication and the intelligence of the computer.\textsuperscript{29}

The recognition of emotion can be inferred from speech intonation of a human being. The first step to getting the machine to learn the emotion is by gathering either primary input data or the secondary input data. The primary input can be the recordings of actors which express different emotions by reading the same text, while the secondary input could be using already existing databases, which were developed by other researchers.\textsuperscript{30} However, primary input can be considered as the best input since secondary input might exist in hybrid form. Furthermore, from the acquired data, a machine can extract the features from a voice to find statistical relationships between particular features and emotional states.\textsuperscript{31} Features can be in an acoustic form such as intonation in the voice, and linguistic form such as phonemes, words, laughter, or sighs.\textsuperscript{32}

Thus, the computer can sense and recognize the emotional expressions using the stored patterns of input data. There is also a categorization of emotion, in which the computer will determine the most possible emotional state from the input data. The classification of emotions falls into two categories: discrete form and continuous form. The discrete form only provides emotion types which consists of anger, disgust, fear, joy, sadness, and surprise. Whereas, the continuous form describes the emotional state in a continuous space with different dimensions.\textsuperscript{33}

Emotion AI also started to be implemented in the digital advertising industry to gain an insight into consumer behavior. Large-scale consumer data analysis and prediction will be easily done through emotion AI.\textsuperscript{34} Affectiva is one of the businesses that offer emotion AI which combined both face and speech detection in order to gain insights into human expression of

\textsuperscript{31} ibid.
\textsuperscript{32} ibid., n(19).
emotion for market research and advertising. Facebook also planned to implement emotion recognition in its feature by patenting techniques for emotion detection and content delivery. This patent sought to scan and capture the user image while the user skims through the content. Therefore, Facebook will be able to tie the emotional states of the user when viewing different types of contents in the news feed. These examples emphasize the role and potential of emotion in the future of digital advertising industry.

2. The process of targeted advertising generated by emotion in Amazon Alexa patent publication

In 2018, Amazon was granted a patent on the ‘voice-based determination of physical and emotional characteristics of users’ by the United States Patent Office. The patent sought to enhance the skills of Amazon Alexa devices, which will enable Alexa to monitor and detect real-time emotion abnormality from the user. Alexa is Amazon’s cloud-based service, which is implanted into various Alexa devices such as Amazon Echo. Alexa can only be turned on when it recognized the voice when the user says the wake-up word. After the user is finished speaking, it will automatically send the recording to the server in which it will convert the recording into commands that it interprets. The whole system of Alexa relies on data and machine learning which improve the overall service of Alexa and reduce the error in understanding the context of the user’s request. These endless possibilities with Alexa are making Amazon as one of the main leaders in the market of virtual assistant.

According to the patent, Alexa will be able to give suggestions and recommendations tailored to the current emotional status of the user. The analysis of vocal patterns will determine the discrete form of emotion, discerning among “joy, anger, sorrow, sadness, fear, disgust,

37 ibid., n(7).
boredom, stress, or other emotional states”. These suggestions and recommendations are targeted advertising from third-party advertisers. The patent creates a scenario in which a singer could target the ‘tired’ or ‘bored’ users by paying adverts on Alexa to recommend their new album. Unknowingly to the user, this singer has already become the ‘preferred partner’ of Amazon through a selection process.

To explain in a more detailed manner, the whole process in the patent publication should be outlined. The process consists of five stages which starts when Alexa receives audio input from the user. The recording of the user’s request will be sent to the cloud which interprets the recording into commands it understands. Alexa has the ability to detect the trigger words as an indication of the user’s request. The trigger words may involve inquiries, requests for information, or requests for suggestions. It will then automatically determine the physical or emotional abnormality inferred from the voice. Alexa will rank the most appropriate audio content to give feedback to the user based on the emotion abnormality detected. The first rank of audio content will be presented to the user. To sum up, the process can be illustrated in the scheme below. The description on the scheme will be further explained afterwards.

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44 ibid., n(7).
45 ibid., n(7).
Figure 1. The process in generating targeted advertisement determined by the real-time emotional status of the user in Amazon Alexa voice interaction device

The figure illustrates the processing of audio input from the user in order to provide the user with the most suitable feedback. Alexa has three servers to process the audio input from the user, which consists of voice processing server, exchange server, and audio content server. The patent publication gives Amazon Echo device as an example of the processing of the user’s voice to provide targeted advertising tailored to the user’s emotion. Alexa is the cloud-based service which interprets the spoken commands and provide user with responses, whereas Amazon Echo is the cylindrical home audio speaker that integrates Alexa into the system.\textsuperscript{46} The process can be referred back to the figure outlined in the patent publication below:

Figure 2. The communication between voice processing server, exchange server, and the audio content server to generate targeted advertising determined by the emotional status of the user.  

The process in each stage of the servers can be mentioned as follows:

1) Amazon Echo receives the request from the user

2) The voice processing server will further analyse the voice data to determine different aspects of the voice. The analysis has the objective to determine the meaning of the user’s request, the physical conditions of the user, the emotional status of the user, the language accent in the voice, and the background noise behind the voice. Then, it will send the audio content which has been analysed to the exchange server.

3) The exchange server receives the request and proceeds to the audio content server.

47 *ibid.*, n(7).
4) The audio content server will automatically categorize the candidate audio content based on the inferred data. It will rank the contents and send the first choice back to previous servers.

5) In the end, the voice processing server will provide audio content back to the user. The audio content provided to the user may take form as an advertisement which already tailored to the user’s emotion. For example, if the voice processing server concludes that the user is feeling sad, the audio content server will rank the advertisements based on the compatibility with the emotion inferred from the voice data. Therefore, targeted advertising can be placed in various forms such as music, suggestions, offers to buy certain products, or other responses suitable to the user request and emotional states of the current emotional state of the user.

3. Inferring voice into emotion in Amazon Alexa emotion recognition patent publication

The whole process of processing audio input to generate targeted advertising will start with Alexa sending the audio input to the cloud. The services that process the audio input is Alexa Voice Services, which can convert the audio input into commands that it interprets. The audio input is converted into texts by analysing the speech pattern such as the pitch and frequency contained in the voice. In this stage as well the emotional states of the user can be inferred to determine the most suitable advertisement as the suggestion and recommendation from Alexa.

Alexa store some representations of the real-time emotional state of the user in its memory. These representations are defined as data tags. The data tags are metadata with one or more labels, text, or other data that can be associated with the voice data in order to indicate the real-time user’s status. Combining the voice data with the real-time traits of the user represented in the data tags, the voice processing server in the second stage will be able to determine the current emotional states of the user. Traits may involve physical characteristics of

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48 ibid., n(5)
50 ibid., n(7).
the user (such as age, gender, ethnic origin, etc.) and the emotional condition of a user (such as happy, sad, tired, sleepy, excited, etc.). The signal processing algorithm will also be applied to the voice data in order to determine the real-time emotional state of the user.

According to the patent publication, the categorization of emotion which can be detected are default or normal, happiness, joy, anger, sorrow, sadness, fear, disgust, boredom, stress, and other emotional states. The determination of the user’s default state is made possible due to the machine learning technique in which Alexa will improve their service after a certain period of usage. Therefore, the abnormality can be concluded as the emotional state which is different than the user’s normal or default emotional state. Emotional states may be determined based at least in part of an analysis of pitch, pulse, voicing, jittering, and the harmony of a user’s voice, as determined from processing of the voice data.

In the fourth stage, it has been said that the audio content presented to the user is selected based on the winner in the auction process of the advertising slot. The auction involves sending a bid request to the advertisers in order to determine the winning bid. This method is similar to the process in the Google AdWords auction, which determines whether the advertisement is relevant to be shown to the user as well as the position of the advertisement on the page.

The auction in Google AdWords is highly related to the keywords of the search and the quality of the advertisement. Google has set the minimum threshold to maintain the quality of the presented advertisement. The rank in the shown advertisements is adjusted based on various factors, including advertisement position, the topic and nature of the search, the user signals and attributes such as location and device type. The aim of the threshold is to maintain the quality of the advertising and the bid offered by the advertiser. Combining the quality of the advertisement and the maximum bid that the advertisers are willing to pay, it will determine the score of the advertisement and the position of it.

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51 ibid., n(7).
52 ibid., n(7).
53 ibid., n(7).
54 ibid., n(7).
56 ibid.,
Alexa will also implement the auction method to determine the rank of the presented audio content. The audio content server will give scores to each relevant advertisement based on the audio creative quality or bandwidth, relevancy to the user, and the bid price.\textsuperscript{57} In Alexa, the threshold will be set to retain the relevance of the advertisement which delivered to the user. The relevance threshold may be in the form of alphanumeric or category-based.\textsuperscript{58} Moreover, targeting criteria will be applied to enhance the relevancy of the advertisement. According to the patent publication, the examples of targeting criteria might include age, demographic, or browsing history. The data tags as indicative of the real-time emotional status will be compared with the most suitable advertisements which targeted the audience with the detected emotional status. The candidate audio content will be ranked and if there is a match or partially match with the data tags, it will be selected as the audio content. Therefore, the most relevant advertisement will be delivered as per the request of the user.

4. Interim conclusion

Emotion is one of the key points behind the success of advertisement, hence, advertisers are willing to put an effort in the utilization of emotion to create a more effective advertisement. It can be seen from the data scheme that Alexa will firstly convert the audio input into text to interpret the request of the user. In this stage, the server will generate signal processing algorithm to determine the emotional states of the user. It is made possible due to the data tags as the representative of real-time traits of user’s physical and emotional traits. In the end of the process, there will be an auction to determine the winning bid and the most relevant audio content to be presented to the user. However, this practice will pose some risks in the perspectives of consumer law and data protection regulation which will be further explained in the next chapter.

\textsuperscript{57} ibid., n(7).
\textsuperscript{58} ibid., n(7).
CHAPTER III

THE RISKS AND CHALLENGES POSED BY AMAZON ALEXA EMOTION RECOGNITION

This chapter will evaluate the data flow which has been outlined in the previous chapter. The first section will analyse the risks according to the vulnerability concept of consumer which mainly highlight the risks on the autonomy. The second section will describe the issue under the perspective of data protection which mostly related to the suggestions and recommendations produced by Alexa that has been inferred from the emotional states of the user.

1. Emotion monetization and the concept of consumer vulnerability

Technological change may have the corresponding advantages and disadvantages since technology could codify the world and influence people to use their minds and their bodies, and how it could disregard our emotional and intellectual tendencies. In general, emotions are crucial in the decision-making process since it is related to the rationality behind the judgment, thus the development of emotion detection technologies may challenge this concept.

The whole scheme in the patent for Amazon Alexa emotion recognition will revolutionize the way advertisers assess the behavior of the user to measure and evaluate the compatibility of their product in the targeted market. Targeted advertising will soon respond to not only our demographic which reflected from our age, gender, or preferences, but also our current emotional state. However, this knowledge can be used to boost sales and target people at the moment when they are most emotionally vulnerable. Targeted marketing has received criticism due to the perceived harmfulness of the product and the perceived vulnerability of the target. Most explorations of consumer vulnerability address lack of personal control as a

60 Damian Clifford, 'The Legal Limits to the Monetisation of Online Emotions' (PhD, KU Leuven 2019) page 14.
primary part of the experience of consumer vulnerability.\textsuperscript{63} Therefore, when consumers are unable to control their attention, behavior, or emotions, then their responses are beyond their control, aversive, and part of their experience of vulnerability.\textsuperscript{64}

Baker also defined consumer vulnerability as follows:

“a state of powerlessness that arises from an imbalance in marketplace interactions or from the consumption of marketing messages and products, in which it occurs when control is not in an individual’s hands, and it leads to a dependence on external factors (e.g., marketers) to create fairness in the marketplace”.\textsuperscript{65}

The spectrum of vulnerability may vary for each consumer depending on their demographic or individual states and highly related to their perceptions towards certain stimuli in the marketing context. Therefore, consumer can be more vulnerable due to the complex marketing and the inability to select the best deals.\textsuperscript{66} However, it should be noted that vulnerability demonstrates the irrationality and losses in a consumption situation.\textsuperscript{67} Vulnerable consumer will more likely to be influenced by the advertisers which can lead to impulsive buying, excessive consumption, and conspicuous consumption.\textsuperscript{68}

European Commission set an indicator of what can be categorized as vulnerable consumer based on the socio-demographic characteristics, behavioral characteristics, personal situation, and market environment. Vulnerable consumer can be defined as certain consumer that is being put on a high risk of negative outcomes in the market, has difficulty to obtain or assimilate information, and is more susceptible to certain marketing practices”.\textsuperscript{69} However, the European Commission also noted that there is a broad concept of consumer vulnerability which mostly refers to an ex-ante assessment to prevent the risk and negative aftermath in the context

\textsuperscript{64} ibid., page 131.
\textsuperscript{65} ibid., n(63) page 134.
\textsuperscript{68} ibid.,
\textsuperscript{69} ibid., n (68) page 2.
of consumer well-being.\textsuperscript{70} Therefore, there are two categories of consumer vulnerabilities: vulnerability which relates to personal attributes of the consumer, and a wider context that involve the consumers and the traders in particular transactional situations.\textsuperscript{71}

The EU consumer laws have the objective to protect the weaker party as well as ensure autonomy and freedom of decision-making of the consumer.\textsuperscript{72} The concept of autonomy can be traced back to the work of Immanuel Kant that introduced autonomy as freedom of choice, in which an individual is capable to act rationally and freely exercise his moral reasoning will.\textsuperscript{73} Autonomy according to Kant is self-governance through self-legislation, in which it views an individual as rational and capable of legislating moral action for oneself.\textsuperscript{74} However, the ability to act autonomously also depends on the internal factors of the individual, such as the emotional and physical states, as well as the intellectual state and abilities.\textsuperscript{75}

The automation of inferring emotion to conduct targeted advertising aims to assign a customized set of options that has been adjusted to the consumers’ preferences to prevent painful tradeoffs or difficult deliberation from the perspectives of consumers.\textsuperscript{76} This process can threaten the consumers’ autonomy since the consumers are deprived from the chances to introspect their preferences.\textsuperscript{77} In the end, the process could result in undetectable personalization that signals a lack of control on the part of consumers.\textsuperscript{78} The user is unaware that the choice is limited due to the utilization of emotion to conduct the advertisements auction. The risks voiced in this regard may involve the mismatch between the actual and inferred preferences, the possibility of lower

\textsuperscript{71} ibid., page 39
\textsuperscript{74} ibid., page 583
\textsuperscript{75} ibid., n (73) page 562
\textsuperscript{77} ibid., page 34
quality of products/services, and monopolization of distribution channels in a way that the consumers might prefer the products offered by the affiliates or the paying partners.\textsuperscript{79} Most of the time, the consumers will be powerless to change and rectify these information asymmetries.\textsuperscript{80}

The risks will be more prominent when it comes to a vulnerable group of consumers. European consumer policy is based on the standard of rational-acting consumers, hence information asymmetries can become a barrier to enhance the consumers’ decision-making processes.\textsuperscript{81} Rational-acting consumers are consumers who are competent and willing to deal with the given information, thus they capable to make informed and rational decisions.\textsuperscript{82} However, vulnerable consumers are unable to create this kind of decision due to physical or behavioral constraints. Potentially vulnerable consumers such as the elderly, individuals with low educational background, or people who are inexperienced with online shopping, may have lower awareness of personalisation and the risks behind it.\textsuperscript{83} Alexa can respond to the user’s request with suggestions and recommendations, and most of the time offer to buy. Therefore, if the purchase is completed, it might also due to the inability to choose other substitute product.

There is also a degree of manipulation that results in the dependency of the consumer towards the device. Market manipulation theory believes that humans are predictably irrational, hence people do not always behave rationally in their best interest as traditional economic model.\textsuperscript{84} Therefore, market manipulation essentially is nudging for profit, in which companies will exploit their knowledge on human psychology in order to maximize the profit.\textsuperscript{85} In its purest form, digital market manipulation recognizes that vulnerability is contextual and a matter of degree and specifically aims to render all consumers as vulnerable as possible at the time of

\textsuperscript{79} ibid n(73), page 52-53.
\textsuperscript{80} ibid., n(75)
\textsuperscript{82} ibid., page 271
\textsuperscript{85} ibid., page 1001
Consumers might not be vulnerable most of the time and will act rationally in their own interests. However, under certain circumstances such as a long day at work upon making hundredth decision of a day, the willpower will deplete and lead to vulnerabilities. Therefore, companies with the capacity and incentive to exploit a consumer could target the consumer most intensely when the consumers are the most depleted. In this case, Alexa could exploit the knowledge on the emotional status of the user and target them with suitable advertisements at the right time.

2. The utilization of ‘emotion’ as inferred data in the light of data protection

There is an overlap in data protection law and consumer protection law since the objective of both regimes is to protect the autonomy of the consumers and data subjects. The scope of the GDPR is to protect natural person in regard to the processing of personal data. Over the years, the right to personal data protection has evolved from market-building device into a core fundamental right, and arguably a de facto citizenship right. Initial EU legislation ensuring protection to personal data in the context of market integration has been extended to other areas of activities and further reinforced by constitutional recognition, which attributes to this right a particularly strong position in the EU legal order.

The concept of targeted advertising encompasses the compilation of detailed information on consumers and their preferences in using the internet or consuming other media to provide them with the individualized advertisement. This type of aggregation of metadata can reveal personal information that can be no less sensitive than the actual content of communications and can give an insight into an individual’s behavior, social relationships, private preferences and

86 ibid., n(81) page 1033
87 ibid., n(81) page 1033
89 ibid., n(81) page 1033
92 ibid., page 281.
identity. The aggregation of data could lead to the creation of profiles. Profiling can become the basis for decision-making process since it relies on wide ranges of data sources such as location data and behavioral data to infer preferences and form a profile. Profiling may pose certain risks due to the utilization of personal data, and companies also have the upper hand since they acquire the abundant amount of individual data in the decision-making process. The process in Amazon Alexa emotion recognition involves the inferring voice data to determine the emotional states of the user to generate targeted advertising. Therefore, we can conclude that Amazon Alexa emotion recognition could trigger the applicability of data protection regulation.

The GDPR protects personal data with no regard to the kind of technology used for the processing of data since the regulation is technology-neutral and can be applied to both automated and manual processing. Personal data according to the GDPR is:

“any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person”.

There are a lot of elements in this definition. However, the main criteria for data to be considered as personal data are the identifiability.

There are debates on whether emotion can be classified as personal data since the current legal context is that if technologies do not create images of people, identify, individualize, single-out or generate code to treat an individual differently somehow, then the process is not

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98 Article 4 (1) GDPR
regulated by data protection legislation in Europe.\textsuperscript{99} However, there can be a way to identify individual through combining other types of data or as the only data generated that day is from one person, it is reasonable to argue that a person has been ‘singled out’.\textsuperscript{100}

AI can draw non-intuitive and unverifiable inferences and predictions about the behaviors, preferences, and private lives of individuals\textsuperscript{101}. Inferential analytics methods are used to infer user preferences, sensitive attributes (e.g., race, gender, sexual orientation), opinions (e.g., political stances), or to predict behaviors (e.g., to serve advertisements).\textsuperscript{102} Facebook has been using inferential analytics methods to infer sexual orientation of the user. There was a case in which one user received an advertisement from a real-estate company that targets the gay community. He found out that “homosexuality” was one of his Facebook ‘ad preferences’ even though he never explicitly stated his sexual orientation or granted explicit consent for Facebook to send targeted advertisement based on his sexual orientation.\textsuperscript{103}

The potential value and insightfulness of data generated while using digital technologies if often opaque from the perspective of the user.\textsuperscript{104} Individuals are often granted little control and oversight over how their personal data is used to draw inferences about them.\textsuperscript{105} This is also shown from Amazon Alexa emotion recognition since there is further automated processing after the device receives the voice input from the user. The algorithm will automatically combine the voice data and the traits of the user to infer the emotion as can be seen in stage 3 of the data flow. Even though the technology will follow the commands of the user, the decisions are made autonomously based on the self-learning algorithm.\textsuperscript{106} Personalisation algorithms, and the

\begin{itemize}
\item ibid., page 7
\item ibid., page 1.
\item ibid., n(104) page 17.
\item ibid., n(104) page 6.
\item Silvia De Conca, 'From the Glass House to The Hive: The Private Sphere in The Era of Intelligent Home Assistant Robots' (2018) 12th IFIP Privacy and Identity Management the Smart Revolution, page 285.
\end{itemize}
underlying practice of analytics, can thus both enhance and undermine the agency of data subjects that also lead to harming the autonomy of the user.\textsuperscript{107}

3. **Interim conclusion**

This chapter has described the risks in Amazon Alexa emotion recognition based on the data flow which has been outlined in the previous chapter. The first section explained that the practice of sending targeted advertisement based on the emotional states of the user could harm the autonomy of the user. The risks on the autonomy are caused by the inability of the user to prevent their emotion to go undetected, the inability to filter the audio content which has been selected through the auction process, and a degree of manipulation in which Alexa could maximize the profit using the knowledge on the user’s emotional status. Those risks can become more prominent when it comes to vulnerable consumers. In the next section, there is a description on whether emotion can be classified as personal data under the GDPR. The core issue in the processing of voice data to infer emotion is whether emotion can be protected under the notion of personal data. The next chapter will describe how the regulatory frameworks mitigate the risks and challenges brought up in this chapter.

CHAPTER IV
THE EU CONSUMER LAW AND DATA PROTECTION ON AMAZON ALEXA
EMOTION RECOGNITION

The previous chapter focused on highlighting the risks posed by Amazon Alexa emotion recognition based on the data flows outlined in the patent publication. Therefore, this chapter is aiming at describing how the regulatory frameworks in consumer law and data protection mitigating those risks.

1. EU consumer laws

1.1 Autonomy and vulnerable consumer from the perspective of EU consumer laws

The Unfair Commercial Practices Directive (UCP Directive) aims to regulate all kinds of commercial practices which may impact on the economic interests of the consumer. The main objective of this Directive is to advance the operation of the internal market towards consumers, by removing the disparate national rules and regulations that harm their access to the intra-Community trade of goods and services.108 The scope of this Directive is the protection of the economic interest of the consumer from unfair business-to-consumer commercial practices, as well as indirectly protects the other businesses from unfair competition.109

Commercial practices will be deemed as unfair if, contrary to professional negligence, they materially distort the economic behaviour of the average consumers and it may result in consumer taking a transactional decision they would not otherwise have taken.110 In Gut Springenheide GmbH, The Court of Justice of the European Union (CJEU) has established that the average consumer is “a consumer who is reasonably well-informed, and reasonably observant and circumspect”.111 The ‘average consumer’ is assumed to be neither credulous, nor

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easily impressed or quickly deceived.\textsuperscript{112} The judgment has been adopted as the standard test for misleading and aggressive advertising and other forms of unfair commercial practices.\textsuperscript{113}

The average consumer is eventually incorporated in UCP Directive and is in and of itself abstract and normative, setting a standard for protection that refers by its very nature as desired behaviour.\textsuperscript{114} Therefore, since the average consumer is the benchmark, the core of the UCP Directive lies in the information paradigm, which is assuring a flow of correct and meaningful information, transactional decisions of consumers are undistorted and can therefore be assumed to be taken in accordance with consumer preferences.\textsuperscript{115}

This Directive emphasizes the autonomy of the consumer, which is the idea that the consumers should be able to make informed choices.\textsuperscript{116} However, this Directive also acknowledges that there are certain group of consumers that might have difficulty to make informed choices. This group of consumers is protected under the Article 5(3) UCP Directive that defines vulnerable consumers as “a clearly identifiable group of consumers who are particularly vulnerable to the practice or the underlying product because of their mental or physical infirmity or age or credulity”.\textsuperscript{117} According to the European Commission standard, there are certain dimensions in which consumer can face the vulnerabilities. The dimension can range from when the consumers faced with complex marketing material to when the consumer has less access to choose or buy.\textsuperscript{118} Therefore, a commercial practice can be considered unfair observed from the perspective of the consumers who are particularly vulnerable to it.\textsuperscript{119}

\textsuperscript{115} ibid., n(114), page 5.
\textsuperscript{117} Article 5(3) Directive 2005/29/EC on Unfair Commercial Practices
The practice of inferring the user’s emotional status to conduct targeted advertising can be classified as unfair commercial practice under Article 5 (2) UCP Directive. This provision prohibits commercial practice that can materially distorts or is likely to materially distort the economic behaviour of an average consumer.\footnote{Article 5 (2) (b) Directive 2005/29/EC on Unfair Commercial Practices} Moreover, the practice can be considered as misleading omission under Article 7 (1) UCP Directive that prohibits “commercial practice that omits material information that the average consumer needs to take an informed transactional decision and thereby causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise”.\footnote{Article 7 (1) Directive 2005/29/EC on Unfair Commercial Practices} This is due to the automation of the overall process, in which the user is unable to filter the audio content which has been selected through the auction process. There is also a degree of manipulation in which Alexa could maximize the profit using the knowledge on the user’s emotional status. Vulnerable consumer is prone to these risks, thus, Article 5 (3) UCP Directive can also be applied.

A further reference on vulnerable consumers can be found in Directive 2011/83/EU on Consumer Rights (Consumer Rights Directive). The scope of this Directive is to provide a harmonisation of certain aspects of consumer distance and off-premises contracts, which is necessary for the promotion of a real consumer internal market to ensure the balance between consumer protection and the competitiveness in the market.\footnote{Recital 4 Directive 2011/83/EU on Consumer Rights} The information paradigm is crucial for consumers to be able to make an informed decision. Therefore, this Directive establishes some provisions on pre-contractual information and the right to withdraw from a contract.\footnote{Recital 34 Directive 2011/83/EU on Consumer Rights} This Directive obliges the traders to give the consumers a clear and comprehensible information before the consumers are bound by the contract, while also taking into account the vulnerable group of consumers.\footnote{Recital 34 Directive 2011/83/EU on Consumer Rights} However, it should not lead to different levels of consumer protection.\footnote{Recital 34 Directive 2011/83/EU on Consumer Rights}

In this context, privacy policy of Amazon Alexa can be the medium to inform the consumers. In the current privacy policy, Amazon has explained how the device works, handelspraktijken <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3204676> accessed 24 December 2019, page 260.
including the process of sending the audio input of the user to the cloud, as well as the list of personal data that will be collected from the user.\textsuperscript{126} On the other hand, contracts can take into form as Amazon Alexa’s terms of use which reflected the agreement between Amazon and the user. The terms of use can be mentioned as follows:

“This is an agreement between you and Amazon Digital Services LLC (with its affiliates, "Amazon" or "we") (....) By using Alexa, you agree to be bound by the terms of this Agreement. If you do not accept the terms of this Agreement, then you may not use Alexa”.\textsuperscript{127}

To assess these terms of use, the Directive 93/13/EEC on Unfair Contract Terms in Consumer Contracts (UCT Directive) can be used to shed the light. The scope of this Directive is to regulate unfair contractual terms which defined as “a contractual term which has not been individually negotiated and in contrary to the requirement of good faith, that could cause a significant imbalance in the parties’ rights and obligations arising under the contract, to the detriment of the consumer”.\textsuperscript{128} The UCT Directive also covers contracts in online services, in which the monetary payment for the service is made with the personal data collected through registration forms.\textsuperscript{129} Therefore, analysing emotional states of the user for targeting advertising in exchange for Alexa services seem like a bad deal due to a significant imbalance between the user and Amazon. The user will not be offered the services if they do not agree in the contracts.

1.2 Amazon Alexa emotion recognition as ‘goods with digital elements’

The EU recently adopted a new directive governing contracts for the supply of digital content and services, which is the Directive 2019/770 (Digital Content Directive).\textsuperscript{130} This Directive aims to ensure a high level of protection for consumers paying for a service but also those providing data in exchange for such service, for example, products with a digital element

\textsuperscript{127} ibid., n(80)
\textsuperscript{128} Article 3 (1) Directive 93/13/EEC on Unfair Terms in Consumer Contracts
such as smart fridges.\textsuperscript{131} Digital Content Directive also attempted to harmonize contract law as part of consumer protection framework.

Digital content in this directive is data which are produced and supplied in digital form.\textsuperscript{132} Meanwhile, digital service is a service that allows the consumer to create, process, store or access data in digital form or a service that allows the sharing of or any other interaction with data in digital form uploaded or created by the consumer or other users of that service.\textsuperscript{133} The scope of this Directive should cover any contracts in which the trader supply the digital contents or services, and the consumer correspond to pay the price.\textsuperscript{134} However, digital content or digital services are often supplied also where the consumer does not pay a price but provides personal data to the trader.\textsuperscript{135} Article 3 (1) stipulates that “counter-performance can be provided not only in the monetary form, but also in the form of personal data”.\textsuperscript{136} Moreover, pursuant to the aforementioned provision, the Directive can only be applied when there is ‘active’ supply of data (including personal data) from the consumer.\textsuperscript{137}

Amazon Alexa emotion recognition then can be classified as goods with digital elements under Article 2 (3) Digital Content Directive. The notion of goods with digital elements should refer to goods that incorporate or are inter-connected with digital content or a digital service in such a way that the absence of that digital content or digital service would prevent the goods from performing their functions.\textsuperscript{138} The absence of digital content in the form of audio input from the user will prevent the voice recognition to function. However, there is a blurred line in ‘active’ and ‘passive’ supply of data from the consumer, especially when the data are produced through the active use of the digital product and transferred automatically without the need for

\textsuperscript{132} Article 2 (1) Digital Content Directive.
\textsuperscript{133} Article 2 (2) Digital Content Directive.
\textsuperscript{134} Article 3 (1) Digital Content Directive.
\textsuperscript{135} Recital 24 Digital Content Directive.
\textsuperscript{138} Recital 21 Digital Content Directive.
further action from the consumer. Furthermore, in this case, there is a blurred line whether emotion can be considered as personal data, and there is an automation in the determination of their emotional status to conduct the targeted advertising.

2. **EU data protection framework**

2.1 **Emotion under the notion of personal data**

The scope of the GDPR is to protect natural person in regard to the processing of personal data. There are a lot of elements in the definition of personal data contained in Article 4 (1) GDPR. Article 29 Working Party thereby gives a clarification on the concept of personal data which includes information touching the individual’s private and family life, but also information regarding whatever types of activity is undertaken by the individual, like that concerning working relations or the economic or social behaviour of the individual.

In the previous chapter, it is mentioned that it remains uncertain whether emotional data could be considered as a specific category of data worth protection. However, it should be noted that the overall process in Amazon Alexa emotion recognition is dependent on the voice input of the user. Article 29 Working Party classified voice as a biometric data which can be defined as “biological properties, physiological characteristics, living traits or repeatable actions where those features and/or actions are both unique to that individual and measurable, even if the patterns used in practice to technically measure them involve a certain degree of probability”. Therefore, due to the use of voice in the processing of data, the provision on biometric data can be applied for emotion.

Article 4 (14) GDPR defines biometric data as “personal data resulting from specific technical processing relating to the physical, physiological or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person”.

Biometric data can be regarded as the content of the information about an individual as well as

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142 *ibid.*, n(140) page 8.
143 Article 4 (14) GDPR.
an element to link those information with the individual which functions as unique identifiers.\textsuperscript{144} The processing on biometric data requires an added layer of protection due to the sensitivity nature of the data. There are three criteria that need to be satisfied for the data to be considered as biometric data:\textsuperscript{145}

a. Nature of data: data relating to physical, physiological, or behavioral attributes of an individual.

b. Means and way of processing: data resulting from a specific technical processing.

c. Purpose of processing: data must be used for the purpose to uniquely identify a natural person.

The EDPB gives an example of facial recognition system installed in the shop to deliver tailored advertisement towards the consumer. This type of processing can constitute as biometric processing since it is aimed at recognition through specific technical processing.\textsuperscript{146} This example can be applied in the context of Amazon Alexa emotion recognition. Special processing of the voice data will result in targeted advertising that already tailored to the user’s emotion.

The GDPR protects personal data with no regard to the kind of technology used for processing the data since the regulation is technology-neutral and can be applied to both automated and manual processing.\textsuperscript{147} The GDPR leaves emotion tracking unregulated so long as the emotion analytics do not allow or confirm the unique identification of an individual since the main criteria for data to be considered as personal data is the identifiability.\textsuperscript{148} Therefore, if the data cannot be traced back to an individual, the data will fall out of the scope of personal data under the GDPR. In Amazon Alexa emotion recognition, there is an identifiability element since the device is uses voice profiles to recognize the voice of the user.\textsuperscript{149}

\textsuperscript{144} ibid., n(140) page 8.
\textsuperscript{146} ibid., page 16.
The use of voice may be governed by the provision of biometric data, however, there is further processing on the voice input of the user that leads to the inferred data of emotion. The term ‘inferred data’ is inexistent in the GDPR since the focus is mostly on the input data.\(^{150}\) The key characteristics of inferred data is that the data is inferred from other data and not directly provided by the data subjects.\(^{151}\) The determination of emotion is inferred from the voice and does not have purpose to uniquely identify the users, but to provide them with targeted advertisement.

However, the legal obligations imposed by the GDPR should be applied even in the case of technology that does not aim to seek out the individual, since the processing might still involve personal data.\(^{152}\) As mentioned in the previous chapter data subject can always be singled out through combining other types of data or as the only data generated that day is from one person. In \textit{Breyer}, the Court stated that “\textit{the requirement of an identifiable person in the provision of personal data is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his or her physical, physiological, mental, economic, cultural or social identity}”.\(^{153}\) In \textit{Planet 49}, the Court ruled that Article 5 (3) ePrivacy Directive should be understood as any information stored in the terminal equipment of users of electronic communications networks regardless of whether or not it is personal data, to protect users from the risk that hidden identifiers and other similar devices enter those users’ terminal equipment without their knowledge.\(^{154}\) Therefore, emotion can be categorised as personal data based on these precedents.

2.2 Legal grounds of the processing of emotion as personal data

The processing of voice data is fall under the scope of Article 9 concerning special categories of data. The processing of such data is essentially prohibited due to the sensitive nature that could create significant risks to the fundamental rights and freedoms of data

\(^{150}\) Ibrahim Emre Bayamhoğlu, \textit{Being Profiled: Cogitas Ergo Sum} (Amsterdam University Press 2018), page 113.
\(^{151}\) \textit{ibid.}, page 112.
\(^{153}\) Judgment of 19\textsuperscript{th} of October 2016, Case C-582/14, \textit{Patrick Breyer v. Bundesrepublik Deutschland}, ECLI:EU:C:2016:779, para 32.
\(^{154}\) Judgment of 1\textsuperscript{st} of October 2019, Case C-673/17, Planet49 GmbH, ECLI:EU:C:2019:801, para 70.
However, there are some exceptions that entails as the lawful grounds of the processing of special categories of data. To process special categories of data, controllers must meet one of the conditions set out in Article 9 (2) GDPR, as well as the lawful grounds from Article 6 GDPR. This includes special category data derived or inferred from profiling activity.

We can reflect from the terms of use mentioned in the first section that the current processing of personal data in Amazon Alexa is based on the consent of the user. In regards to the profiling inferred from special categories of data, there should be an applicable exemption under Article 22 (2) GDPR and conditions listed in either Article 9 (2) point (a) or (g) GDPR. Therefore, the analysis will strictly focus on the notion of consent since other grounds such as legitimate interest are not applicable in this context.

Article 4 (11) GDPR stipulates that “consent should be given by a clear affirmative act establishing a freely given, specific, informed and unambiguous indication of the data subject’s agreement to the processing of personal data relating to him or her”. However, the obligation for the controller to obtain consent should cover all stages of the processing for the same purposes, and when the processing has multiple purposes, consent should be given for all of them.

In regards to the processing of biometric data and data concerning health, GDPR imposed a stricter requirement of lawfulness, which is that the controller should obtain an explicit and specific consent. Traditionally, explicit consent is given in writing by a hand-written signature to demonstrate the express statement of consent. It encompasses all situations in which the individuals can choose and respond actively whether to agree or disagree with certain use or disclosure of their personal data. In the digital or online context, a data subject may be able to

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155 Recital 51 GDPR.
157 ibid., page 15.
158 ibid., n(157) page 24.
159 ibid., n(103) page 70.
160 Article 4 (11) GDPR.
161 Recital 32 GDPR.
issue the required statement by filling in an electronic form, by sending an email, by uploading a scanned document carrying the signature of the data subject, or by using an electronic signature.¹⁶³

The notion of autonomy appears as the cornerstone of the conceptual foundation of consent.¹⁶⁴ Autonomous action can be defined as an act in which individual may act intentionally, with understanding, and without controlling influences.¹⁶⁵ However, in the aforementioned chapter, it is said that the technology will pose a risk in human autonomy, especially in terms of vulnerable consumer. Therefore, if the data processing is based on the explicit consent listed under Article 9 (1) GDPR, the lawfulness of the processing can be questioned since the obtained consent may not satisfy the elements of consent stipulates in Article 4 (11) GDPR.

The first element of consent is freely given. It implies the notion of imbalance between data subject and the controller. Therefore, there is an emphasis on the ability of data subjects to freely choose, since there is no risk or negative outcomes when they do not consent to the processing of their personal data.¹⁶⁶ Moreover, consent should not be considered as freely given when it undermines the freedom of choice of an individual.¹⁶⁷ Consent is presumed not to have been freely given if it is bundled up as a non-negotiable part of terms and conditions.¹⁶⁸ The current terms of use of Alexa force the user to consent in order to experience the service. These terms of use are not reflecting the lawfulness of processing in the context of Amazon Alexa emotion recognition.

Article 7 (4) GDPR indicates that bundling the consent with acceptance of terms and conditions to process personal data that are not indispensable for the performance of the contract is considered highly undesirable.¹⁶⁹ This provision seeks to ensure that an individual has control over their personal data is essential and the processing of personal data that is unnecessary, cannot be seen as a mandatory consideration in exchange for the performance of a contract or the

¹⁶⁴ Eleni Kosta, Consent in European Data Protection Law (Nijhoff 2013), page 130.
¹⁶⁶ ibid., n(157), page 12
¹⁶⁷ ibid., n(157), page 12
¹⁶⁸ ibid., n(114) page 5.
¹⁶⁹ ibid., n(163) page 9.
provision of a service. On the other hand, the lawful ground of contract contained in Article 6 (1) (b) GDPR can be applied in case the data controller seeks to process personal data that is necessary for the performance of a contract. However, the necessity for performance of contract is not a legal basis for processing special categories of data, as applied in the context of Amazon Alexa emotion recognition.

3. Interim conclusion

This chapter has described the regulatory framework in the field of consumer law and data protection. The regulations have been chosen accordingly to address the risks posed by the technology which have been outlined in the third chapter. In the first section, there are descriptions on how the EU consumer laws govern the issues on autonomy and vulnerable consumer. How the newly adopted Digital Content Directive in governing Amazon Alexa emotion recognition also described. The next section described the current EU data protection framework approach the risks in the notion of emotion as personal data and the lawfulness of the processing of emotion as personal data. In the next chapter, there will be an analysis of legal challenges in both regimes in the light of Amazon Alexa emotion recognition.

\(^{170}\) Ibid., n(163) page 9.
\(^{171}\) Ibid., n(163) page 9.
\(^{172}\) Ibid., n(163) page 9.
CHAPTER V
LEGAL CHALLENGES IN THE LIGHT OF AMAZON ALEXA EMOTION RECOGNITION

The previous chapter has outlined how the current regulatory frameworks on consumer law and data protection in mitigating the risks posed by Amazon Alexa emotion recognition. Therefore, this chapter aims to assess whether those regulatory frameworks are adequate to overcome the risks. The first section will describe the legal challenges for consumer laws, whereas the next section will describe the challenges from data protection perspective.

1. The legal challenges in the perspectives of consumer laws

1.1 Revisiting the standard of average consumer

The average consumer is the benchmark in the UCP Directive. In Severi, the average consumer is said to be “reasonably well informed, reasonably observant and circumspect, and should be able to determine whether the product has an origin, provenance or quality which are other than genuine”. However, the concept of the average consumer, who makes rational decisions in the marketplace, has been challenged from different perspectives due to technological innovations. The view might not be unrealistic since average consumers may be well-informed and circumspect, however, they nevertheless need protection due to the lack of their bargaining power. The UCP Directive initially intended to prohibit commercial practices that could undermine the decision making of the average consumers in order to make an informed decision by preying on their emotions. Therefore, it leaves room for the legislators to take a second look at the standard of average consumer and create a more realistic and unambiguous standard.

174 ibid., n(118) page 23.
177 ibid., page 28.
Moreover, even though the UCP Directive also aims to protect vulnerable consumers, this concept is superfluous and paternalistic notion that highlight the unrealistic standard of an average consumer instead. There are possible consequences for the legitimacy and acceptance of a consumer policy since labelling and grouping the vulnerable consumers can create a stigmatisation that consumer protection is only intended for the people who are deficient and irresponsible in some way. However, the average consumer may be vulnerable in some respect. As for example, the consumers are able to read the information, but it is more rational to assume that they will not spend time in reading the information. Therefore, the legislators should not define certain consumers as a group that should be seen as the primary beneficiary of consumer policy.

The practice of inferring emotion to conduct targeted advertising also emphasize this issue. There is a blurred line between the average consumer and vulnerable consumer since in this case, Amazon can gain knowledge on the emotional status of the user to target them with a suitable advertisement at the right time. The user might not be vulnerable at all times, but there are certain times when they will become prone to the commercial practice. For example, Alexa can detect that the user is currently feeling lonely and sad, hence there is a high chance that the user will accept the suggestions and recommendations from Alexa due to the irrationality in their judgment. It should be noted that advertising can be considered as manipulative if the advertising efforts are focused on subversive manners that lack the truth to get the consumers to do what the advertiser wants.

1.2 Information paradigm and its challenges

Information was seen as the prime instrument for improving consumer autonomy and hence the position of the consumer in legal, mostly contractual relations. Information provision is a response to the asymmetries of information between the consumers and the traders.

178 ibid., n(177) page 29.
180 ibid., n(176).
181 ibid., n(180) page 212.
Consumers may have difficulty in making decisions that reflect their true preferences due to the lack of information.\textsuperscript{184} Therefore, the law should oblige the traders to provide the consumers with adequate information. Once this information is provided, harm will be reduced by ensuring goods and services are more likely to be in line with realistic consumer expectations based on reliable information.\textsuperscript{185}

Consumer Rights Directive also drafted with the idea of information paradigm. However, information paradigm receive criticism due to the effectiveness of informing the consumer. First of all, the solution of protecting consumers solely by providing (standardized) information is inadequate since it relies on the notion of average consumer.\textsuperscript{186} In the aforementioned section, it is said that the standard of the average consumer is unrealistic and needs to be revisited. The fact that a consumer meets the requirements of being reasonably circumspect does not mean that he fully understands the information or that he is able to make the right decision, especially when he needs to choose between the product and no product, or when the information relied upon is manipulated by the provider.\textsuperscript{187} Moreover, the more complex the products or services and/or the more complex the nature of information, the less likely that the consumer will be able to respond intelligently.\textsuperscript{188} In Amazon Alexa emotion recognition, there is a degree of complexity in the overall process hence the user might not be able to fully grasp the information provided. The user is facing the difficulty as well since they will not be able to access the device if they do not want their emotions to be analysed by Alexa.

Online services usually provide the information in their terms of use before the user can access the service. The terms of service can also be scrutinised under the UCT Directive to calculate the degree of fairness in the contract. As for example, the Berlin Kammergericht (Court of Appeal) has declared that several clauses in Facebook terms and conditions are illegal since it

\textsuperscript{185} ibid., page 355.
\textsuperscript{187} ibid., page 15
contravened the principle of transparency.\textsuperscript{189} The judgment addresses some clauses from Facebook’s general terms and conditions that are considered unclear and incomprehensible.\textsuperscript{190} One of the clauses grants Facebook the authority to use copyright protected works such as images and videos posted by Facebook members for free.\textsuperscript{191} It is also unclear to what extent Facebook could monetise the names and profile pictures of its Facebook members.\textsuperscript{192}

Article 3 (1) UCT Directive stipulates that “contract terms are regarded as unfair if it is contrary to the requirements of good faith and they cause a significant imbalance in the parties' rights and obligations arising under the contract that could result in the detriment of the consumer”.\textsuperscript{193} The concept of good faith is an objective concept linked to the question of whether, in light of its content, the contract term in question is compatible with fair and equitable market practices that take the consumers’ legitimate interests sufficiently into account.\textsuperscript{194} Therefore, contract terms should be drafted in plain and intelligible language as per Article 5 UCT Directive. In Kasler, the Court stipulates that “the requirements that the contract should be drafted in plain intelligible language is to be understood as requiring not only that the relevant term should be grammatically intelligible to the consumer, but also broader requirement to ensure the transparency of the contract, so that the consumer is in a position to evaluate, on the basis of clear, intelligible criteria, the economic consequences for him which derive from it”.\textsuperscript{195}

Therefore, Amazon should ensure that the user is aware of the risks in the use of the device by explaining it clearly in the terms of use. Moreover, the current terms of use that they used is reflecting a ‘significant imbalance’ between the provider and the user since consumers

\textsuperscript{192} ibid.,
\textsuperscript{193} Article 3 (1) UCT Directive
\textsuperscript{195} Judgment of 30th of April 2014, Case C-26/13, Árpád Kásler, Hajnalka Káslerné Rábai v OTP Jelzálogbank Zrt, ECLI:EU:C:2014:282, para 75.
have limited capacity to negotiate the terms and conditions.\textsuperscript{196} The existence of the genuine choice for the consumers can be questioned since the consumers are facing the ‘take-it-or-leave-it’ offer and unable to access a service if they do not agree to the said terms and conditions.\textsuperscript{197}

1.3 ‘Passive’ consumers and personal data as a counter-performance

Digital Content Directive only applies to contracts in which the user is actively provides the data. This is due to the common conception in the contract laws where there should be a form of consideration or value exchange between the parties to form a valid contract.\textsuperscript{198} Exempted from this Directive are contracts where the data is not actively provided by the consumer (for example data that mined through the use of cookies), data that the consumer needs to provide to access the content or that is legally required, and data that is needed to improve the service.\textsuperscript{199} This distinction leads to less protection for the consumers who passively provided data, as they will not fall under the DCD.

Referring back to Amazon Alexa emotion recognition, it is unclear whether this Directive could be applicable in this matter. The user may actively provide their personal data such as name, phone, or e-mail by register for an account at Alexa. However, Alexa may also automatically retain the data that are not actively provided by the user for instance such as IP address and voice inputs from the user.\textsuperscript{200} The automation in inferring emotion into targeted advertising also fuels the confusion in the scope of this Directive. The user is actively provided the voice data to access the Alexa’s services, however, emotion data is automatically inferred from the abnormalities in the voice.

There are some concerns that propose the expanding the Directive’s scope to include digital content supplied against data that consumers provide passively to strengthen the position.


\textsuperscript{197} ibid., n(138) page 35.


\textsuperscript{200} ibid., n(80)
of consumers. Excluding ‘passive’ consumers will be counterproductive in terms of consumer protection since passively collected data should not be considered as less valuable in its scope or importance compared to actively collected data. Limiting the scope to actively provided data could create an incentive in which the traders will not ask for the consumer’s consent since they would assume that data protection framework will be implemented instead.

Article 3 (1) Digital Content Directive that treated personal data as a counter-performance of the contract also receives criticism from data protection perspective. There are some debates on the extent of companies should be able to leverage and monetise personal data. The concept of concluding contracts in exchange for personal data was seen as contradicting the fundamental rights nature of data protection by treating personal data as a mere commodity. The monetisation of emotion in exchange for the service offered by Amazon also emphasizes this issue since it could put the fundamental rights of the user in jeopardy.

2. The legal challenges in the perspectives of data protection framework

2.1 Inferences from special categories of data

In the aforementioned chapter, it is said that emotion is not clearly defined in the GDPR although the provision on biometric data can be taken into account since emotion analysis is tied to the voice input from the user. Biometric data are extracted from physical attributes (such as face, voice, or fingerprints) and behavioral attributes which can be measured and compare to identify an individual. Biometric characteristics are thus used to identify individuals through the terms ´allowing´ and ´confirming´ in the definition of biometric data under the Article 4 (14) GDPR.

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201 Tatiana-Helenē Synodino, et.al., EU Internet Law: Regulation and Enforcement (Springer International 2017), page 122.
203 ibid., page 96.
However, there is a contradiction on the terms ‘unique identification’ stated in Article 4 (14) GDPR and Recital 51 GDPR. According to Recital 51 GDPR: “the processing of facial images can only be considered as biometric data when processed through a specific technical means which allows the unique identification or authentication of a natural person”.  

Logically, in that definition, ‘unique identification’ cannot refer to biometric identification as it refer instead to the highest threshold of identification, where individuals are identified (singled out) through their biometric attributes. Therefore, if Recital 51 GDPR defines authentication as identity verification, there will be an inconsistency with the legal definition of biometric data since ‘unique identification’ can be understood as biometric identification. The term ‘unique identification’ thereby should refer to the threshold of identification of biometric data and not to ‘biometric identification’ as a function.

The GDPR also facing the challenges since inferred data are not defined as personal data in its provisions. Inferred data also clearly exempted from one of the rights of data subjects, which is the right to data portability. We can conclude from this notion that inferred data is not considered as personal data covered by the GDPR. This GDPR lacunae is slight but has led to commercial and even political abuse with visible consequences.

However, The CJEU has interpreted the definition of personal data in a broader sense. In Bodil Lindqvist, the Court establishes that “personal data is any information relating to an identified or identifiable natural person, in which it undoubtedly covers the name of a person in conjunction with his telephone coordinates or information about his working conditions or hobbies”. The Court also stipulates that reference to the fact that an individual has injured her foot and is on half-time on medical grounds constitutes as the processing of special categories of data.

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207 Recital 51 GDPR
209 ibid., n(206) page 16.
213 ibid., para 51
Referring back to Amazon Alexa emotion recognition, the overall process involve in combining physical attributes of the user (voice) and physiological reactions of the user (emotion) that could lead to the user being identified. The analysis on voice abnormalities to infer emotional states of the user may pose a risk in the fundamental rights of data subject. Therefore, the provision of biometric data should be implemented instead of the provision of common personal data.

2.1 Contractual ground in the processing of special categories of data

As the processing of data in Amazon Alexa emotion recognition involve in the use of biometric characteristics that could lead to an individual, this technology should be subjected to a stricter regime as a safeguard to maintain the rights and freedoms of data subjects. The lawful grounds of processing will be put in scrutiny to analyse the lawful basis under Article 6 (1) GDPR and the requirements listed in Article 9 (2).

Consent *inter alia*, become one of the most common lawful basis to process personal data as can also be seen in the current terms of use of Amazon Alexa. However, the obtained consent from those terms of use can be challenged from the notion of ‘freely given’ in Article 4 (11) GDPR as well as the principle of good faith stipulates in the UCT Directive. These elements are aiming to ensure the autonomy of the data subject to consent prior to the processing of their personal data. Autonomous choice and voluntariness are the central to the notion of consent. The autonomous person is portrayed in some general theories as an independent, in command, impervious to authoritarian control, and the source of his or her basic values and beliefs, thus he is competent to consent.\(^{214}\) Due to the fact that the current terms of use uses bundle consent and leaves no room for the user to refuse in such processing, the lawfulness of the processing can be questioned.

The conditions of processing listed in Article 9 (2) GDPR also raises an issue since it does not include the processing being necessary for the conclusion of a contract with the request of the data subject, or for the performance of a contract entered into with the data subject, which are some of the key grounds for the processing of common personal data as per Article 6 (1) (b)

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GDPR.\textsuperscript{215} Therefore, the controllers that deal with this situation should explore the specific exceptions in Article 9 (2) subparagraphs (b) to (j), and should none of the exceptions (b) to (j) apply, obtaining explicit consent in accordance with the conditions for valid consent in the GDPR remains the only possible lawful exception to process such data.\textsuperscript{216} For example, the controller uses biometric data when it is part of the performance of a contract, they still need to obtain explicit consent from the user.\textsuperscript{217}

The GDPR should have acknowledged the need of processing under the ground of ‘necessary for the performance of a contract’. As for example, Amazon may conduct the processing of data once there is a request from the data subject. This will emphasize the autonomy of the user since the user can make an informed choice whether they are aware of the consequences in the emotion analysis. Amazon as the controller can also benefit from this since the reliance on consent has the downside, which is the data subject can withdraw their consent anytime.

4. \textbf{Interim conclusion}

This chapter has analysed whether there are \textit{lacunae} in EU consumer laws and data protection in case the patent publication comes into force. It is worth mentioned that the technology has posed several challenges for the consumer laws, namely the average consumer as a benchmark, the effectiveness of information paradigm, the significant imbalance in the terms of use, contracts in which the user is ‘passively’ provides the data, and personal data as a counter-performance of the contract. In the data protection perspective, there is a challenge of regulating inferred data under the notion of personal data and the need for contractual basis as the lawful ground of special categories of data. These challenges emphasize the inadequacy of the current consumer laws and data protection laws in the light of Amazon Alexa emotion recognition.


\textsuperscript{216} \textit{ibid.}, n(164) page 19

\textsuperscript{217} \textit{ibid.}, n(216).
CHAPTER VI

CONCLUSION

1. Conclusion

Emotion plays the crucial role in advertising since the decision-making process is heavily relied on the dimension of emotion.\(^{218}\) Therefore, more companies acknowledge this possibility and implemented emotion AI in the digital advertising industry to gain an insight into consumer behavior. This pattern also shows from the granted patent on ‘voice-based determination of physical and emotional characteristics of users’ for Amazon Alexa voice recognition. The developers of Alexa aiming that this patent could enhance the performance of Alexa, in which it can make conversational-AI systems more engaging, and it can provide implicit customer feedback that could help Alexa learn from their mistakes.\(^ {219}\)

According to the patent publication, the device will be able to infer the emotional status of the user based on their voice input. The server then will start classifying relevant advertisements based on certain thresholds through a bidding process.\(^ {220}\) In the end of the process, the user will be presented with targeted advertisement based on their emotion, in the form of suggestion and/or recommendation provided by Alexa. Therefore, it brings us to the question, “how is targeted advertising inferred from the emotional states of the user currently regulated under the EU law regime, and are the regulatory frameworks adequate to mitigate the risks?”.

The development of this business model has been said to pose some risks in the context of consumer laws and data protection. The objective of consumer laws is to protect the autonomy of the consumer, in which it refers to self-determination where the consumer capable to make a free choice and rational decision.\(^ {221}\) Amazon Alexa emotion recognition could harm the


\(^{220}\) (See section 2.3)

\(^{221}\) ibid., n(118) page 15.
autonomy of the user since the device will automatically discern the emotional status when there is a voice input from the user. The decision making of the consumer also depends on a stable set of preferences. Alexa can create a dependency since the user is unable to filter the audio content that has been selected through the auction process. The knowledge on the emotional status of the user could lead to the irrational choice from the user since Alexa could target them with a suitable advertisement at the right time. On the other hand, Amazon Alexa emotion recognition could threaten the fundamental right in the perspective of data protection. This is due to the fact that inferred data is not clearly protected under the current regulatory framework on data protection.

In mitigating the risks posed by the technology, the notion of average consumer is the legal benchmark under the UCP Directive in which it assumes that the consumer is “reasonably well-informed and reasonably observant and circumspect”. However, this Directive also added a layer of protection for the certain group of consumers that is susceptible to certain commercial practices due to their mental or physical infirmity or age or credulity, under the umbrella of vulnerable consumer. The practice of Amazon Alexa emotion recognition can be counted as unfair commercial practice since the practice could impair the decision-making process and likely cause the consumer to take a transactional decision that he would not have taken otherwise. Data protection law on the other hand, can arguably regulates emotion under the notion of biometric data since emotion analysis is tied with voice input from the user. Therefore, the processing of emotion as an inferred data should be subjected to a stricter regime of processing ground.

However, there are some challenges faced by both consumer laws and data protection law in mitigating the risk in Amazon Alexa emotion recognition. Consumer laws are facing the challenges on the issue of the average consumer as a benchmark, the effectiveness of information paradigm, the significant imbalance in the terms of use, contracts in which the user is ‘passively’

provides the data, and personal data as a counter-performance of the contract. Whereas, in the
data protection perspective, there is a challenge of regulating inferred data under the notion of
personal data and the need for contractual basis as the lawful ground of special categories of data.
In conclusion, both regimes show some insufficiencies in overcoming the risks.

2. Concluding remarks

In overcoming the issue, consumer laws and data protection law can be used to
complement each other since the two regimes have the same objective, which is to protect the
autonomy of consumers and data subjects.\textsuperscript{226} With the proliferation of technology, the autonomy
of consumer is at stake since marketing practices can influence them in their private realm.\textsuperscript{227} Data protection law involves complex balancing of interests between the controller and data
subjects to ensure the competitiveness of the market and the freedom and rights of data subjects,
whereas consumer protection aims to address significant imbalance between the traders and the
consumers due to the information asymmetries in the market.\textsuperscript{228} Therefore, EU consumer
protection law can be applied in the context of data protection to improve fairness and
accountability of the controller, as well as enhance the power of the data subjects.\textsuperscript{229}

However, it should also be noted that there is a limitation in the overall research, in which
the patent publication may differs from the actual implementation, and there is a possibility that
the suggestions and recommendations from Alexa might not affect the decision-making process
of a consumer.

page 67.
\textsuperscript{227} Natali Helberger, \textit{et.al}, 'The Perfect Match? A Closer Look At The Relationship Between EU Consumer Law
\textsuperscript{228} Michiel Rhoen, 'Beyond Consent: Improving Data Protection through Consumer Protection Law' (2016) 5
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