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Privacy Protection Principles of Omnichannel Approach

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***Abstract*—**The advent of the Internet, mobile devices and social media is revolutionizing the experience of retail customers by linking multiple sources through various channels. Omnichannel retailing is a retailing that combines multiple channels to allow customers to seamlessly leverage all the distribution information online and offline while shopping. Therefore, today data are an asset more critical than ever for all organizations. Nonetheless, because of its heterogeneity through platforms, developers are currently facing difficulties in dealing with personal data. Considering the possibilities of omnichannel communication, this paper presents channel categorization that could enhance the customer experience of omnichannel center called hyper center. The purpose of this paper is fundamentally to describe the connection between the omnichannel hyper center and the customer, with particular attention to privacy protection. The first phase was finding the most appropriate channels of communication for hyper center. Consequently, a selection of widely used communication channels has been identified and analyzed with regard to the effect requirements for optimizing user experience. The evaluation criteria are divided into 3 groups: general, user profile and channel options. For each criterion the weight of importance for omnichannel communication was defined. The most important thing was to consider how the hyper center can make user identification while respecting the privacy protection requirements. The study carried out also shows what customer experience across digital networks would look like, based on an omnichannel approach owing to privacy protection principles.

***Keywords*—**Personal data, privacy protection, omnichannel communication, retail.

I. Introduction

TODAY, it is unthinkable to provide a service without a contact center through which provider can increase the customer's satisfaction with the service. The communication between the agent and the customers in the contact center has become two-way, and with the development of information and communication technology, the era of using and involving multiple channels of communication (chat, e-mail, SMS, etc.) begins. Personal data provide the opportunity for many different types of applications that could improve the lives of people by deep personalization, personal well-being management tools, and identity building services [1].

M-commerce will expand in the years ahead as e-commerce expands into a greater portion of total U.S. retail sales. M-commerce accounted for more than a fifth of all e-commerce in 2019-more than doubling since 2015. Business Insider Intelligence [2] estimates that m-commerce value will increase to $488.0 billion by 2024, or 44% of e-commerce. There are two primary tools behind the change of m-commerce: smartphones and tablets.

Some 47% of EU enterprises used at least one type of social media in 2017. Furthermore, between 2013 and 2017, EU enterprises using social media for marketing purposes increased from 22% to 40%, for communicating with customers increased from 15% to 27% and for recruiting employees increased from 9% to 23%. [3]. Social media enable innovative and effective ways of socializing with others, working together, and transacting services and products online. With the advent of social media, Internet sociability gradually moved away from private networks and anonymous platforms, and opened up to multiple, broad results of personality and profile-based experiences [4]. In other hand, abuse of information entrusted can result in a variety of privacy violations and trust concerns for social media users. There are several trends happening with social media that could surface in 2020. One of them is standing up for privacy and reducing the sharing of information with third parties (paywall) that resell data [5]. Recent announcements by major organizations of data and privacy breaches may have increased privacy concerns for costumers and impaired costumer confidence in these organizations.

A deeper theoretical understanding of costumers - including their goal orientations and underlying processes involved in decision-making - would greatly facilitate researchers and practitioners in understanding costumers and their privacy decisions [6]. The rapid development of new technologies creates new opportunities and challenges for communication as the line between online and physical channels is blurred, a new approach to channel integration is emerging - the omnichannel [7]. Of course, not all channels have the same potential, so it is necessary to define channel evaluation criteria according to privacy protection. This paper introduced identification and categorization on the most popular communication channels' characteristics that could enhance the customer experience of omnichannel contact center. Depending on the importance of each criterion for the communication through omnichannel contact center, the specified categorization of communication channel is performed. The research performed also proposes what customer engagement will look like through digital networks focused on an omnichannel center called hyper center.

II. State of the Art

A. Review Stage

As stated in the recent research made [8], which was dealing with the idea of the omnichannel approach, the term

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omnichannel (omni is a latin word meaning “all”, “universal”) represents the vision of an ideal strategy in which communication with customers takes place through a set of interconnected channels based on the application of modern information communication technology, which would also coincide with today's behavior and habits of the customers. Namely, all the channels in omnichannel are linked, so the customers can simultaneously use them and have a seamless experience. Customers are generally not channel centric - they are goal centric, which means they think about the value and not about channels [8]. They tend to choose their preferred communication channel for the interaction, but also like to have the ability to switch to another channel without interruptions or loss of some part of the conversation [8]. A huge amount of customer data obtained from diverse communication channels is being stored in the joint database, and it should be handled with special attention, especially when dealing with the creation of the customer profiles.

Omnichannel supply chain management is challenged by uncertainty, sales volume oscillations and the incompatibility of supply-demand. Meeting these challenges requires the adoption of strategies focused on complex systems that use new information and communication techniques appropriately [9].

B. Privacy Concern

Data-driven products and services are often marketed owing to their ability to save customers time and money or even boost health and wellbeing. But, very big number of customers remains unconvinced that they profit from this extensive data collection system. Many people currently say they feel very little or no influence over the data collected about them by the government (84%), while about two-thirds (64%) claim they are at least very worried about how the government uses the data it collects about them [10]. Americans feel as if they have no more influence over who has access to their information from their physical location and their social media posts, there are situations in which some people sense a lack of control in particular. Approximately half of Americans (48%) say they feel as though they have no influence over who can use the search terms they use, and 41% tell the same about the pages they visit [11].

Reference [12] advances understanding of how the trust of customers in the exchange of personal information increases hope helping them to achieve their goals and repeat their transactions. The findings show that customer experience with online shopping and the level of comfort with the online provision of personal information were important predictors of the amount spent online [13]. When costumers gradually exchange more of their personal information with advertisers in return for services and benefits, the problem about who "owns" and regulates customer data on the Internet is growing as a significant issue [14]. Default settings when using particular social network significantly affect customers' privacy preferences, such that users choose the defaults or alternatives (e.g. Facebook privacy settings). Customers with a strong promotion focus (a person who has a promotion focus is oriented towards maximizing positive outcomes such as goal attainment, aspirations, and hope) selects options favoring a higher social networking utility, perceiving lesser cognitive efforts and more confidence in decisions [6]. The consumer with a prevention orientation has a greater tendency to participate in the opt-out situation (i.e. 'do not disclose') than in the non-default circumstances and the opt-in conditions (i.e. 'disclose') [15].

When customers reveal their information, they derive benefits such as personalizing enjoyment and strengthening social ties, and this can push them to reveal even more. On the other hand, as some of the information that Social Network Site (SNS) may disclose may be sensitive, customers may be worried about disclosing such information. Privacy risk, privacy awareness, privacy concerns, and privacy invasion experience are significant predictors of self-disclosure [16]. With the rapid growth of SNSs globally, there has been ongoing concern about how others perceive or use private information regarding customers. Concerns regarding privacy have been shown to be statistically significant. They did not directly impact the adoption of social networking websites by customers. However, concerns over anonymity moderated the impact of assumed usefulness and perceived ease of use, on customers’ intention to continue to use SNSs [17].

Reference [18] reports that trust, privacy, emotions and experience increase intention to purchase. Trust and happiness are important to personalized online shopping. Their absence inhibits purchase intentions. Also, high experience helps overcome low trust or negative emotions, whereas low experience requires the combination of high trust and happiness.

Without hesitation, customers like to use the new communication channels at their disposal to gain the experience offered by implementing these new channels. This, in turn, leads to the emergence of numerous channels as well as the fact that the boundaries between individual channels have become largely blurred [19]. In the age of digitalization of society, it goes a step further and talks about the so-called an omnichannel approach that integrates all channels of communication, including social networks, video chat and other forms. Managing omnichannel communications is the evolutionary step of multiple channels through channel communication. In fact, the free movement and switching of users between all touch points is not only predicted but also preferred [20].

Reference [21] demonstrates that the enhancement of demanding experience in omnichannel shopping can better shape customers’ perceptions toward omnichannel shopping by increasing perceived compatibility and decreasing perceived risk. The findings suggest that connectivity, integration, and consistency of omnichannel experience are positively related to customers’ perceived compatibility. Further, consistency and personalization of omnichannel experience are negatively related to customers’ perceived risk. Of course, not all channels have the same potential, so it is necessary to define criteria for evaluating channels so they will meet privacy protection principles.

III. Research Method

This chapter will focus on identification of criteria to categorize the most popular communication channels whose characteristics could enhance the customer experience of omnichannel contact center. Namely, communication channels know their users well and can create societies linked by common interests and attitudes towards certain products, services, and organizations. As such, they provide valuable information on customer habits. Therefore, the system strives to integrate them into a unique user interface, which combines artificial intelligence, bots, machine learning, micro applications, and more, with the goal of providing users with personalized and proactive experience.

IV. Results of Preliminary Research

A. Communication Channels

By exploring the relevant scientific and professional literature, a list of most commonly used communication channels was derived. In the context of this paper, a communication channel is any medium that allows two-way communication between two or more users. The user may be a natural person, a legal person, or a computer program.

Communication channels covered by the research were part of one of three categories:

1) Instant Messaging/Chat,
2) Social Networks,
3) Other (mobile devices, e-mail, blog etc.).

The list of communication channels was further shortened by setting the criteria of presence on both Croatian and global market. The final list consisted of 24 communication channels: Facebook, Twitter, Messenger, Instagram, Skype, vk.com, Snapchat, Google hangouts, Google allo-duo, Viber, WhatsApp, Mobile device (Android), Mobile device (iOS), Weibo, Team viewer, LinkedIn, e-mail, Google Plus, Habbo, Blog, iMessage, QQ (WeChat), YouTube, and Kik.

B. Channel Descriptor

For each communication channel, a set of information was defined in the form of the channel descriptor.

TABLE I
Channel Descriptor Form

Channel descriptor
Name
Short Description
Date of Release
URL
Categories

Elements of the channel descriptor listed in Table I can be described as follows:

1) Name: a mandatory attribute that defines the common channel name with the associated shortcut (in parentheses) for easier recognition.
2) Short description: a mandatory attribute that contains basic information on communication channel, including a brief history.
3) Date of release: the date (or the year) when the channel became publicly available.
4) URL: an optional attribute that leads the user to the website of the communication channel
5) Categories: an attribute that contains a list of categories of the communication channel, separated by comma.

In the following subchapter, the analysis of the criteria for the classification of communication channels is presented.

C. Criteria for the Classification of Communication Channels

The criteria for classification of communication channels were divided into three groups:

1) General criteria (number of users, presence on the platforms, application programming interfaces (APIs)),
2) Criteria related to the user profile (name, surname, phone number, e-mail, etc.),
3) Criteria related to the channel options (audio communication, video communication, etc.).

A total of 35 criteria were defined, of which the first 10 criteria were general, the following 15 criteria were related to the user profile, and the remaining 10 criteria were related to the channel options. Those criteria are listed in Table II.

Each communication channel covered by the research has been thoroughly analyzed to determine whether the defined criteria are met. The data were obtained using the following sources:

1) online databases,
2) communication channel websites,
3) APIs,
4) Privacy Policy,
5) Terms of Service,
6) Communication channel application.

Criteria that are met in almost all communication channels (90% to 100%) are: verification of user accounts, presence on various platforms, APIs, textual communication support, and connectivity with other channels. 80% to 90% of communication channels contain a user profile with a picture, an e-mail, a visible list of contacts, a phone number, a name and surname, and support exchange of emoticons, data sharing, and media simultaneity. 70% to 80% of communication channels contain information about user's devices and usernames, and they support textual conference and bot implementation. 60% of channels contain information about date of birth and number of contacts. 40% to 50% of communication channels collect the address and support audio and video communication. Less than 30% of communication channels contain a language list, qualitative relationships with contacts and interests, and support share screen, audio conference and video conference.

The point in the channel classification quantitatively describes a desirable characteristic. The channels were then ranked from the highest score to the lowest number of points based on the weighted multi-criteria classification method. For each of the criteria, the minimum and maximum points and weights were defined.

TABLE II
CRITERIA FOR THE CLASSIFICATION OF COMMUNICATION CHANNELS

	Group	Criteria	Description of Criteria
1	General	Number of users CRO	Number of users registered in Croatia
2		Number of users EU	Number of users registered in the European Union
3		Number of users Total	Number of users globally
4		Platform presence - Web	Is the channel available on the web platform?
5		Platform presence - Android	Is the channel available on the Android platform?
6		Platform presence - iOS	Is the channel available on the iOS platform?
7		Platform presence - Windows (desktop)	Is the channel available on the Windows (desktop) platform?
8		Platform presence - macOS	Is the channel available on the macOS platform?
9		API	Does the channel contain API?
10		Bot implementation	Does the channel contain API for the bot implementation?
11	User profile	Picture	Does a user profile of a channel contain a picture?
12		Username	Does a user profile of a channel contain a username?
13		Phone number	Does a user profile of a channel contain a phone number?
14		Language list	Does a user profile of a channel contain a list of languages spoken by user?
15		Name and surname	Does a user profile of a channel contain a name and surname?
16		Address	Does a user profile of a channel contain an address?
17		Date of birth	Does a user profile of a channel contain a date of birth?
18		E-mail(s)	Does a user profile of a channel contain verified e-mail(s)?
19		Interests	Does a user profile of a channel contain a list of interests?
20		Number of contacts	Does a user profile of a channel contain a data about the number of contacts?
21		Visibility of the contacts list	Does a user profile of a channel contain information about contacts (name, surname, etc.)?
22		Qualitative relationship with contacts	Does a user profile of a channel contain information about relationship with contacts (mom, dad, son, etc.)?
23		User's Devices	Does a user profile of a channel contain information about user's devices (type, model, etc.)?
24		Verification	Does the channel verify user accounts?
25		Connectivity with other channels (0-n)	Does a user profile of a channel contain information about connection with other channels?
26	Channel Options	Share screen	Does the channel have share screen option?
27		Audio communication	Does the channel support audio communication?
28		Video communication	Does the channel support video communication?
29		Textual communication	Does the channel support textual communication?
30		Emoticons	Does the channel support exchange of emoticons?
31		Audio conference	Does the channel support audio conferencing?
32		Video conference	Does the channel support video conferencing?
33		Textual conference	Does the channel support textual conferencing?
34		Data sharing	Does the channel support data sharing?
35		Media simultaneity	Does the channel support simultaneous use of different media?

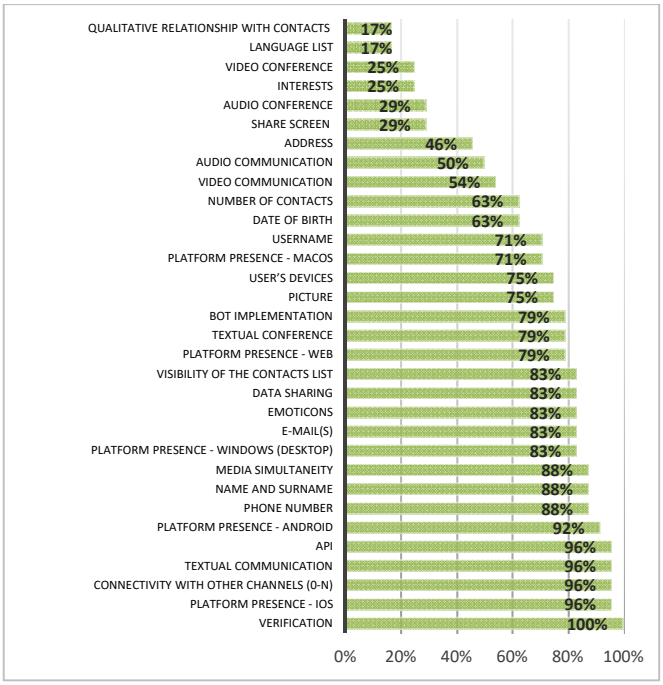

Fig. 1 The representation of defined criteria in the observed channels

TABLE III
POINTS AND WEIGHTS FOR THE CLASSIFICATION OF COMMUNICATION CHANNELS

Criteria	Weight	Max points
Number of users CRO	0	100
Number of users EU	0	100
Number of users Total	100	200
Platform presence - Web	50	200
Platform presence - Android	50	200
Platform presence - iOS	50	200
Platform presence - Windows (desktop)	50	200
Platform presence - macOS	50	200
API	100	200
Bot implementation	90	100
Picture	50	100
Username	60	100
Phone number	100	200
Language list	0	100
Name and surname	90	200
Address	80	100
Date of birth	70	100
E-mail(s)	100	200
Interests	0	100
Number of contacts	0	100
Visibility of the contacts list	0	100
Qualitative relationship with contacts	0	100
User's Devices	70	100
Verification	90	200
Connectivity with other channels (0-n)	80	100
Share screen	30	100
Audio communication	70	100
Video communication	70	100
Textual communication	60	100
Emoticons	40	100
Audio conference	50	100
Video conference	50	100
Textual conference	50	100
Data sharing	40	100
Media simultaneity	40	100

Depending on the importance of each criterion for the communication through omnichannel contact center, the maximum points and weights were specified. They are listed in Table III.

The points were awarded to each criterion within the amount of 100 or 200 points. 200 points were awarded to the following criteria: number of users globally, presence on various platforms, phone number, name and surname, e-mail(s), verification and API. The maximum score value for the remaining 25 criteria was 100.

The weight value was defined as a number between 0 and 100. According to the assessment of experts, the criteria that were less relevant for the communication with the users were given a value closer to 0, while the criteria that were extremely important for communication with the users were given a value closer to 100. 9 extremely important criteria with a weight value of 80 or more (number of users globally, phone number, e-mail(s), public API, name and surname, verification, bot implementation, address, and connectivity with other channels) were defined, 8 criteria (number of users in Croatia, number of users in the EU, language list, interests, private API, number of contacts, visibility of the contacts list, and a qualitative relationship with contacts) that were not relevant for communication with the users were given a value of 0, and the rest 19 criteria that were somewhat relevant for the communication with the users were given the weight value between 30 and 70.

D. The Rank of Communication Channels

After the value of the criterion (0 or 1) has been entered for each communication channel, a formula that calculates the total number of points in relation to the defined weights was set, and the channels were ranked from 1 to 24 with respect to the number of points scored. The formula works in such a way that the minimum number of points is subtracted from the entered value of criteria. The number obtained is then divided by the difference between the minimum and the maximum points. Finally, the new value is multiplied with the defined maximum number of points and the weight.

The range of communication channels resulting from the described methodology is shown in Table IV.

TABLE IV
RANKING LIST OF THE CLASSIFIED COMMUNICATION CHANNELS

Name	Rank	Name	Rank
Facebook	1	Google Plus	13
Skype	2	Viber	14
Team viewer	3	LinkedIn	15
e- mail	4	Mobile device (Android)	16
Messenger	5	Kik	17
YouTube	6	Mobile device (iOS)	18
Snapchat	7	WhatsApp	19
Google hangouts	8	Google Allo-Duo	20
vk.com	9	Weibo	21
Twitter	10	iMessage	22
Instagram	11	Habbo	23
QQ (WeChat)	12	Blog	23

V. CONCLUSION WITH FUTURE RESEARCH

With this research, we have identified the top 5 channels whose capabilities are analyzed in more detail. These are Facebook, Skype, Team Viewer, Email and Messenger.

Scenario is that omnichannel center called hyper center will encompass this top five channels. After defining the top channels for communication of customer with the hyper center, it was important to detect all the customer data that hyper can collect in order to identify (authenticate) and synchronize the data, and then use to improve the customer experience. In this point all privacy protection principles should be included. “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” [22]. Main principle is to collect and use minimum identification data as possible, or to define set of minimum characteristics based on which hyper can identify a customer. For this purpose, an analysis of the API documentation and the privacy policies of Facebook, Skype, Team Viewer, Email and Messenger were made. The identifiers that were collected across the top 5 channels are First and Last Name, Email and IP Address, which can be used to link them to a single customer experience.

To protect the privacy of users, hyper should respect the following principles:

1) it must not collect more information than is necessary;
2) it must not use the user's data for purposes other than those specified;
3) it must not store user data unless it is no longer needed;
4) it must not disseminate user data to third parties; unless the user allows it with his consent.

Following, the privacy protection oriented communication between hyper center and customer is presented. There are two basic cases to consider when communicating with hyper center (the type of user depends on how hyper obtain the privacy consent and management of user information):

1) Communication with a registered user, that is, a user who has entered into an agreement with a company using hyper,
2) Communication with an unregistered user, that is, a user who communicates directly with hyper through one of his publicly available (open) communication channels.

Below are some simplified privacy policies that are based on General Data Protection Regulation [22] and can be implemented in omnichannel approach:

1) By visiting the hyper website or any hyper communication channel, the user does not give hyper his or her personal information. Personal information is collected solely with the permission of the user. The user can draw their consent at any time.
2) When a user contacts hyper, only the data necessary to communicate with the user will be collected, processed and stored.
3) Hyper keeps users' stored information secured from

unauthorized access. The user will always be notified when his personal information is disclosed to other recipients.

4) The user may at any time request access to information that hyper has about him and hyper shall be obliged to allow him access to that information. The customer may also request the correction or updating of information that hyper has about them, or obtain a restriction on processing.
5) Hyper will regularly delete information about the user that they no longer need, and the user can initiate the process at any time
6) Hyper will use the information collected for the purpose of creating a profile to allow the customer to provide the customer with a higher quality of service if permitted by the user.
7) Hyper will use its data for marketing purposes if the user allows it.

Further research covers the definitions of leverage (activity description) when user is first communicating with any hyper channel using blueprint method, wireframe or scenarios. Based on that, next step will be designing the hyper center. The result should be an omnichannel center that respects the principles of privacy protection.

REFERENCES

[1] J. Wiese, S. Das, J. I. Hong, and J. Zimmerman, "Evolving the Ecosystem of Personal Behavioral Data," *Human-computer interaction*, vol. 00, pp. 1–64, 2017.
[2] B. Insider, "Rise of M-Commerce: Mobile Shopping Stats & Trends in 2020." https://www.businessinsider.com/mobile-commerce-shopping-trends-stats (accessed Jan. 14, 2020).
[3] Eurostat, "Social media - statistics on the use by enterprises - Statistics Explained." https://ec.europa.eu/eurostat/statistics-explained/index.php/Social_media_-_statistics_on_the_use_by_enterprises (accessed Jan. 11, 2020).
[4] A. H. Triggs, K. Møller, and N. Christina, "Context collapse and anonymity among queer Reddit users," *new media & society*, pp. 1 –17, 2019, doi: ps://doi.org/10.1177/1461444819890353.
[5] Forbes, "Council Post: Four Bold Social Media Predictions For 2020." https://www.forbes.com/sites/theyec/2019/09/23/four-bold-social-media-predictions-for-2020/#74a836a21ec5 (accessed Jan. 11, 2020).
[6] B. P. Hichang Choa,Sungjong Rohb, "Of promoting networking and protecting privacy: Effects of defaults and regulatory focus on social media users' preference settings," *Computers in Human Behavior journal*, vol. 101, pp. 1–13 Contents lists available at ScienceDirect Com, 2019.
[7] W. Piotrowicz and R. Cuthbertson, "Introduction to the Special Issue Information Technology in Retail: Toward Omnichannel Retailing," *International Journal of Electronic Commerce*, vol. 18, no. 4, pp. 5–16, Jul. 2014, doi: 10.2753/JEC1086-4415180400.
[8] R. Picek, D. Peras, and R. Mekovec, "Opportunities and challenges of applying omnichannel approach to contact center," in *2018 4th International Conference on Information Management (ICIM)*, Oxford, May 2018, pp. 231–235, doi: 10.1109/INFOMAN.2018.8392841.
[9] M. M. Pereira, D. L. de Oliveira, P. P. P. Santos, and E. M. Frazzon, "Predictive and Adaptive Management Approach for Omnichannel Retailing Supply Chains," in *IFAC PapersOnLine 5-11*, 2018, pp. 1707–1713.
[10] P. R. Center, "10 tech trends that shaped the decade." https://www.pewresearch.org/fact-tank/2019/12/20/10-tech-related-trends-that-shaped-the-decade/ (accessed Jan. 15, 2020).
[11] Pew Research Center, "Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information." https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/ (accessed Jan. 15, 2020).
[12] S. H. Akhter, "Who spends more online? The influence of time, usage variety, and privacy concern on online spending," *Journal of Retailing and Consumer Services*, vol. 19, no. 1, pp. 109–115, Jan. 2012, doi: 10.1016/j.jretconser.2011.10.002.
[13] D. F. Spake, R. Z. Finney, and M. Joseph, "Experience, comfort, and privacy concerns: antecedents of online spending," *Journal of Research in Interactive Marketing*, vol. 5, no. 1, pp. 5–28, 2011, doi: 10.1108/17505931111121507.
[14] J. A. Gabisch and G. R. Milne, "The impact of compensation on information ownership and privacy control," *Journal of Consumer Marketing*, vol. 31, no. 1, pp. 13–26, 2014, doi: 10.1108/JCM-10-2013-0737.
[15] G. Craciun, "Choice Defaults and Social Consensus Effects on Sharing: The Moderating Role of Regulatory Fokus," *Computers in Human Behavior*, vol. 88, pp. 89–102, 2018, doi: 10.1016/j.chb.2018.06.019.
[16] G. O. A. Ampong, A. Mensah, A. S. Y. Adu, J. A. Addae, O. K. Omoregie, and K. S. Ofori, "Examining self-disclosure on social networking sites: A flow theory and privacy perspective," *Behavioral Sciences*, vol. 8, no. 6. 2018, doi: 10.3390/bs8060058.
[17] X. Tan, L. Qin, Y. Kim, and J. Hsu, "Impact of privacy concern in social networking web sites," *Internet Research*, vol. 22, no. 2, pp. 211–233, 2012, doi: 10.1108/10662241211214575.
[18] I. O. Pappas, "User experience in personalized online shopping: a fuzzy-set analysis," *European Journal of Marketing*, vol. 52, no. 7/8, pp. 1679–1703, 2018.
[19] E. Brynjolfsson *et al.*, "Association for Information Systems AIS Electronic Library (AISeL) Channel Integration towards Omnichannel Management: A Literature Review," *Journal of Retailing*, vol. 91, no. 2. pp. 5–16, 2015, doi: 10.1016/j.jretai.2015.02.005.
[20] P. C. Verhoe, P. K. Kannanb, and J. J. Inman, "From Multi-Channel Retailing to Omni-Channel Retailing," *Journal of Retailing*, vol. 91, no. 2, pp. 174–181, 2015.
[21] S. Shi, Y. Wang, X. Chen, and Q. Zhang, "Conceptualization of omnichannel customer experience and its impact on shopping," *International Journal of Information Management*, vol. 50, pp. 325–336, 2020.
[22] Official Journal of the European Union, "L 2016 119/1." https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=HR (accessed Jan. 14, 2020).