Journal of Open Innovation: Technology, Market, and Complexity

MDPI

Article

Implementation of Chatbot in Online Commerce, and Open Innovation

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Abstract: This study describes the chatbot journey and focuses on its implementation within the digital marketing strategy in the first part of a company's sales funnel. The main goal was to apply a chatbot via Facebook Messenger supported by the ManyChat platform to increase the number of leads, comparing the chatbot with the previous strategy used by the company to obtain contact information. This research work takes a step further and shows that implementing a chatbot through the ManyChat platform by a company that markets online has a positive impact on the capturing of leads, as opposed to the results obtained by authors such as Luo et al. and Leung et al. A chatbot platform used with the intention of obtaining leads seems to be an agile and powerful tool; in fact; the main conclusion of this work is that including this method can be one of the main axes of obtaining information about consumers with the aim of performing marketing actions in a two-way communication that facilitates sales by companies.

Keywords: chatbot; consumer perception; ManyChat; lead; lead magnet; Facebook; digital marketing; funnel; flow; Messenger; digital communication

Citation: Illescas-Manzano, M.D.; Vicente López, N.; Afonso González, N.; Cristófol Rodríguez, C. Implementation of Chatbot in Online Commerce, and Open Innovation. *J. Open Innov. Technol. Mark. Complex.* **2021**, *7*, 125. https://doi.org/10.3390/joitmc7020125

Received: 12 April 2021
Accepted: 30 April 2021
Published: 5 May 2021

1. Introduction and Justification

Luo et al. [1] and Leung et al. [2] showed that the used of chatbot in companies had a negative impact.

Social networks are relevant modern tools that allow companies to improve their online commercial sales [3] and relationships between sellers and consumers [4], but nowadays, there is an urgent need to use advanced technological tools at the business level due to the continuous use of digitization in society [5].

One such technological tool, known as a chatbot, seems to be a gateway to the automation of different processes that were traditionally carried out by human employees or entrepreneurs, achieving cost savings and generating a high degree of satisfaction with users and clients [5].

Chatbots consist of software that can establish a sequential conversation looking for a certain result as a facilitating tool for humans with whom it interacts. Wallace [6], in his interpretation of the chatbot ALICE, defines chatbots as "expert systems that use case-based reasoning (CBR). The purpose of these systems is to simulate an intelligent dialogue with a human interlocutor, it can be by text message using a console or it can be a voice chat."

Therefore, the first question arises regarding the problem we want to address or solve, which would consist of demonstrating whether implementing a chatbot would improve the customers' relationship with the company [7].

In relation to the academic literature on chatbots in marketing, it can be organized into four blocks [8] according to, first, technical algorithms to solve specific marketing problems [9,10]; second, psychological reactions of customers to the chatbot [1]; third, knowing the effects of the chatbot on employment and society [8]; and finally, strategic vision and management plans linked to the chatbot [11].

Our work expands the scarce literature regarding the second point to be able to expand on and check the reactions that potential customers have when using a chatbot and check whether or not they would provide their contact information for future contact with the company.

Regarding who would benefit from the new findings of our research, the first beneficiaries would be companies that do not market their products online, as this research could encourage them to operate on the Internet. Second are companies that operate online but are not familiar with chatbots, as this research could open their eyes to the benefits of this new way of attracting and keeping customers, since, nowadays, chatbots can serve as a new way for customers to acquire purchases and resolve their doubts quickly.

This study contributes to the field of online sales commerce, as it is necessary to incorporate better digital solutions to enhance the results of companies [12].

First, few studies pay attention to the use of chatbots to increase the conversion rate, and this is one of many applications for robotic interaction technology with customers.

The results of this research can encourage companies that market products or services over the Internet to use the chatbot tool to improve the capture of leads through social networks.

Second, it could be the first time that chatbots are implemented in the online commerce sector. There are other chatbots that solve problems regarding the operation of certain products or services, or that are used for customer service (administrative), and there are educational chatbots and chatbots that help with care work (for patients with chronic diseases or the elderly).

Third, this study investigates the role of chatbots in online commerce and provides empirical evidence of how they contribute to obtaining more information from customers, especially by adopting the stimulus–organism–response (SOR) [13] model in the context of online commerce.

This work fills the research gap by comparing how the study company captures potential customers (leads) before and after implementing a chatbot and demonstrates that the application of the chatbot through Facebook Messenger on the ManyChat platform increased the number of leads compared to the traditionally employed strategy based on the use of forms.

This paper is divided into seven sections. First, we present the introduction and justification. The second section deals with the state of the art. The third section describes the design of the lead capture strategy with the chatbot. The fifth section show the results obtained. The sixth section presents conclusions and implications and, finally, the limitations of our work.

2. State of the Art

Online marketing represents an evolution of offline marketing. It has gone from advertisements on the radio, on television, or in the printed press to banners on the Internet, from advertising brochures in our mailboxes to emails, from real product demonstrations to webinars and videos on YouTube [14].

Recently, online media has become part of consumers' day-to-day lives, as they use the Internet for both work and play, in addition to turning to it to answer their questions. These consumers are active users who are continually learning in order to decide on the best purchases to make. Therefore, having an adequate presence on the Internet, carrying out the most successful strategy for the business, managing social networks well, and interacting with the community can help to obtain potential clients [15].

Chatbots have become fashionable for companies as a relevant opportunity to take better advantage of social networks and obtain a differential advantage at the Internet level compared to other companies that do not use them [12]. They interact directly with customers and facilitate company-initiated communication. Chatbots are equipped with sophisticated voice recognition and natural language processing tools that enable them to understand complex and subtle dialogue and address consumer requests with depth, compassion, and even humor [16].

The main advantage compared to a few years ago is that companies are striving to improve open innovation through measures that include innovation resources and the environment of each region [17].

Being oriented to online marketing allows companies to offer more personalized services due to the use of analytical tools; thus, they are able to know their target and are able to design a buyer persona or ideal client and accompany him throughout the sales funnel [14].

Companies invest in communication to achieve closer relationships and detect the channels of interaction with chosen companies. Extra field research is needed in each open innovation channel, in addition to research to find new open innovation channels [18].

On the one hand, we find the traditional communication channels linked to online tools such as telephone calls and SMS that companies use to get in touch with their customers. Telephone calls, to this day, have not lost any of their importance, and many are made over the Internet and with the help of applications such as Skype, WhatsApp, and Google Hangouts.

Among the advantages, we can appreciate that it is the most effective way to inform clients and answer questions in real time, and to know their reactions immediately and their level of satisfaction with the company and the product. The innovation capacity of an entrepreneur based on sufficient knowledge and familiarity and experience with the business as a user is a more important success factor in the initial stage [19]. In addition, the company, through intonation, structuring of words, and silences maintained, can know if the client is interested in the product or opposed to it.

The drawback when using this communication channel is that it is sometimes invasive, so it is advisable to use this channel once the client already knows the company and is at the lowest level of the conversion funnel.

SMS texting is used to bring clients closer by reminding them of their interest, communicating reference numbers, providing discount coupons, or inviting them to business events. The main advantage of using this medium is that the information reaches the customer's mobile phone directly, and it should also be applied when customers are at the lowest level of the funnel.

On the other hand, online communication channels have improved in recent years. They began by using standard contact forms and then incorporated new actions such as contextual help, click to call, mobile phone apps, social networks, and virtual assistants [20]. By this we refer to standard contact forms, email, click to call, mobile applications, QR codes, social networks, and so-called virtual assistants and automated chats or chatbots. The latter allow the customer experience to be improved and expectations met through real-time interactions [7].

Figure 1 shows the percentage of online shopping according to the devices used.

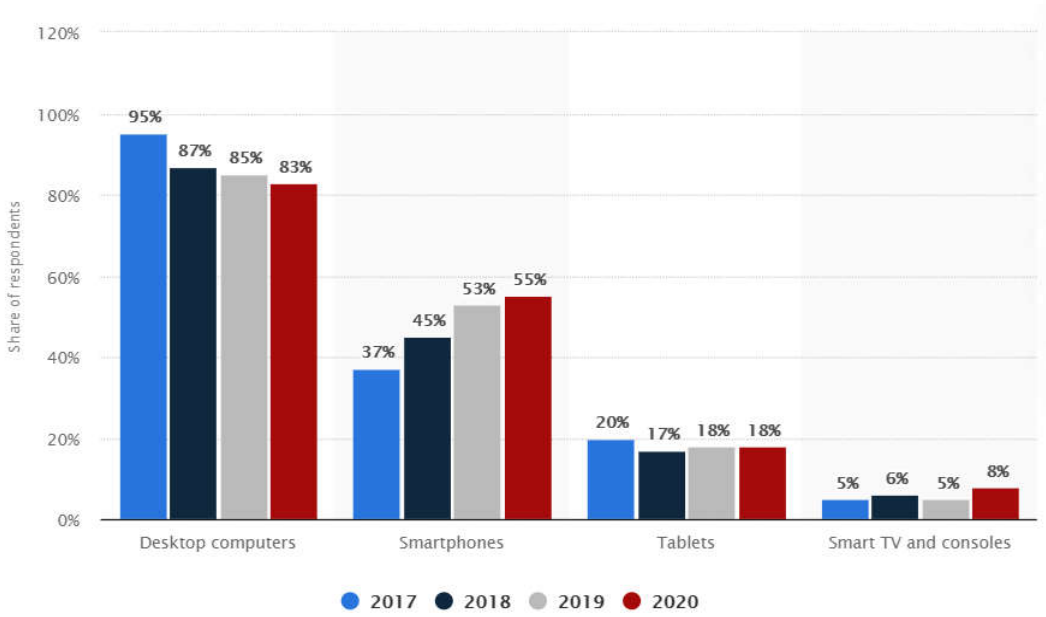

Figure 1. Percentage of online purchases made depending on device used. Source: [21]. Reprinted with permission from Rodríguez, J. M., Merlino, H., & Fernández, E. (2014b).

2.1. What We Understand When We Talk About Chatbots

Chatbots are conversation engines that interact in real time with customers, machine operators, maintenance workers, etc. In addition, they can offer advanced dialogue and technology conversations using machine learning (ML) and artificial intelligence (AI) enhancements [22]. For this, an automated design is required to adequately manage general conversations and focus on specific questions and answers according to the objective pursued [23]. They can also simulate human conversations through voice or text commands, and are used as virtual assistants for users [1]. The chatbot is connected to the user through an interface, which can be an application, a website, a chat pop-up window, or a social network such as Facebook Messenger. These interactions are managed by a dialogue management system [24].

Using chatbots can save costs, offer a permanent relationship with users, and offer the service in different languages [23], in addition to improving relationships with clients and making them part of the company [25].

There are three different types of chatbot:

(a) Based on rules. The company must set the guidelines/rules to follow and customers/users must choose among the options offered. This chatbot is used quickly and has options for the client. This is the type of chatbot featured in this paper.

(b) Smart. This chatbot is based on artificial intelligence, by which it collects information through conversations with customers. Thanks to this technology, the chatbot can learn and provide its own answers.

(c) Hybrid. This is a mixture of the two previous types, combining rules and artificial intelligence [26].

Over the years, different types of chatbots have been launched on the market; the following are the most prominent.

ELIZA was the first chatbot introduced to the market, created by Joseph Weizenbaum. It uses keywords and techniques for information management, and when someone asks a question, the chatbot uses the previously defined keywords to respond immedi-

ately. If ELIZA cannot find an answer, it uses other mechanisms to obtain more information from the user and thus is able to continue the conversation and find an answer [27].

ALICE was developed by Richard Wallace in 1995. It uses natural language patterns to obtain the user's response. All of the information is accumulated in artificial intelligence markup language (AIML) files [27].

Google Duplex is a current chatbot app with artificial intelligence that is used to make reservations with restaurants and hairdressers through a phone call, during which users do not know they are talking to a chatbot [28].

Clippy was developed in 1997 by Windows and became its first virtual assistant.

Siri was created in 2011 by Apple and introduced novelties such as the ability to have voice conversations and not just written ones.

Watson was designed in 2011 by IBM, taking another step in offering a better service to users by providing additional answers.

Cortana was made in 2014 by Microsoft based on a video game and is compatible with all applications of the Windows operating system.

Alexa, created by Amazon in 2014, offers a multitude of information to users, from helping to locate information about desired products and commenting on the weather to remembering important dates.

Finally, Bixby was introduced in 2017 by Samsung. Widespread implementation in Samsung products is awaiting incorporation in several languages [29].

2.2. Different Uses of Chatbots

These virtual applications are beginning to be used in sectors such as health, banking, education, and agriculture [1].

In the field of health, due to the coronavirus disease 2019 (COVID-19) situation, in Germany a chatbot was designed to provide information related to preventing the disease and detecting possible symptoms.

In India, mobile applications are connected to chatbots to raise awareness of the current situation of the pandemic. In Italy, a voice chatbot is being designed to determine the intensity of the disease, and all of the collected information is stored until a doctor can be seen [30]. Thanks to the use of apps with artificial intelligence, it is possible to reduce medical failure, and hospitals operate more efficiently [31]. In Spain, a company has developed a chatbot for this area [32].

American Eagle Outfitters, in the field of fashion, and Domino's Pizza [33], in the field of restaurants, have launched chatbots to collect orders and make product suggestions. On platforms such as Facebook, Microsoft, Google, and Amazon, they are also being used for conversational commerce [34].

In the field of finance, chatbots have been used for investment decision making [35]. In the banking field, they are used to anticipate fraud and manage properties [36]. In marketing, they are used to understand the emotional state of users and respond appropriately [8]; in this way, information can be obtained to detect users of a service who wish to cancel their quota or registration [37].

Chatbots are also used in the field of tourism, which is one of the best uses for this tool, since they offer clients a lot of help throughout the process of booking a hotel, a flight, and any leisure activity that is desired. Last but not least, they are also applied in the field of electronic commerce, which is where this research work is focused, since it allows companies to answer questions and resolve doubts while users are placing orders over the Internet [29].

2.3. Chatbots in the Value Chain

Finally, it is important to deepen the chatbot's fit within the business perspective.

Within the functional areas proposed by Guerras and Navas [38], we can find different proposals for the implementation of chatbots. The adaptability of these systems could be useful in human resources departments, in the financial area, etc.

However, it is in the commercial area where we find an extremely attractive application, specifically in marketing strategy. In fact, Dwitama and Rusli [39], citing a 2016 Oracle study, reported that more than 70% of people who participated in a survey said that people and businesses they knew already used chatbots or planned to use them for this purpose in 2020.

The study carried out in this paper is framed within an e-commerce platform that uses a sales funnel to obtain leads based on a search engine marketing (SEM) campaign on social networks. Electronic commerce, or e-commerce, is understood as "a system for buying and selling products and services that uses the Internet as the main means of exchange" [40].

Based on the sales funnel, the methodological process or set of processes that potential customers must go through from prospecting until the order is finalized can be graphically displayed. It is extremely important to have a clear definition of the potential customer, since the success of the sales funnel depends not only on the work of defining the processes of each phase, but on applying the funnel to clients who have the characteristics that define the ideal client.

Within the definition of the ideal customer, we find that in Spain, according to a study of social networks published by IAB (Interactive Advertising Bureau) SPAIN in 2020 [41], social networks are among the main channels of influence and information for customers.

When buying a product or consuming a service, 56% of the people surveyed considered that social networks influenced their decisions, and 59% said that they sought information on social networks about products or services before making a purchase. Within this study, WhatsApp stands out as the most used social network in 2017, followed by Facebook.

However, when developing an advertising strategy, WhatsApp does not have a platform for advertisers, making Facebook the most used social network among those that offer ads to users, because it can be incorporated as the source of users for the SEM strategy.

SEM can increase the visibility of e-commerce through three possible methods [42]: by keywords, subject, or profile. These are the three possible options for advertisers on the Facebook platform.

Once the data source of potential customers has been defined, it will be necessary to understand in which part of the funnel (Figure 2) the chatbot is intended to be effective. For this, the different phases that potential clients will go through are presented in Figure 2.

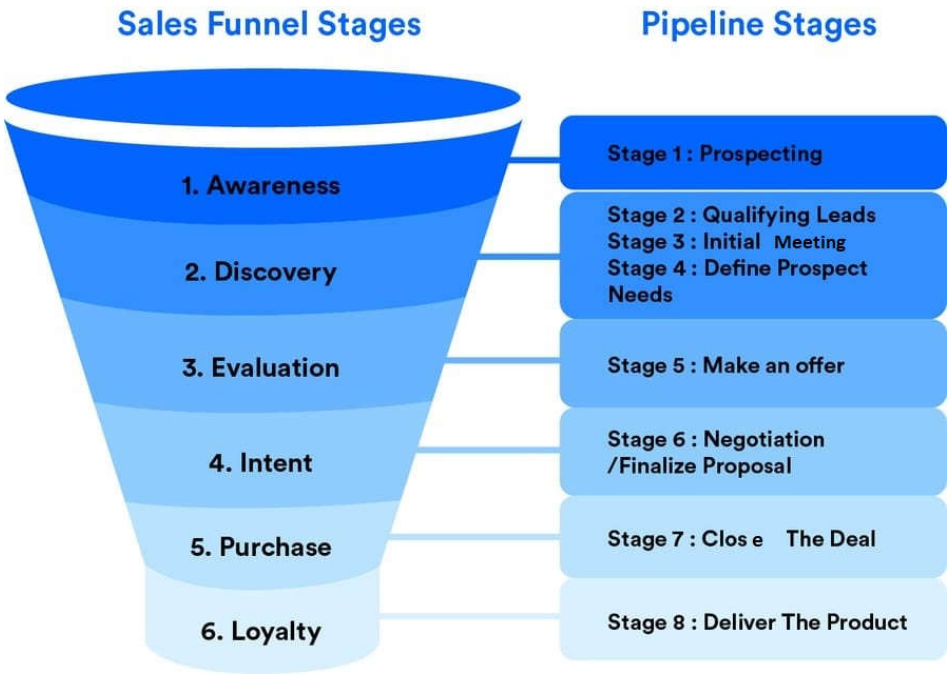

Figure 2. Sales funnel. Source: [43]. Reprinted with permission from Makad, S. (2021)

The phases are described as follows:

Awareness/discovery: This is the first phase of the funnel, where potential customers know about the existence of e-commerce.

Interest: In this phase, all strategies and actions are contemplated to generate interest by potential clients to contemplate or consider e-commerce as a real purchase option.

Evaluation/intent: The user has already contemplated the possibility of placing an order via e-commerce.

Purchase: Finally, the potential customer becomes a customer by making the purchase.

Loyalty: In this phase, the customer is empowered, experiencing sufficient satisfaction and trust to be encouraged to return.

As can be seen in the second phase of the conversion funnel, there arises a need to obtain leads. In this work, leads are understood to be e-commerce users who decide to provide their main data (name, email, etc.), shifting from anonymous users to potential customers on whom sufficient information is available to carry out future marketing actions.

In May 2018, the General Data Protection Regulation (RGPD) proposed by the European Parliament came into force, which regulates the management and trafficking of data within the framework of the European Union [44]. This regulation, which includes obligations for companies and rights for citizens and/or consumers, directly influences the collection of leads.

To achieve leads, proposals have been developed that offer different value for users:

- Downloadable content (e-books, infographics, etc.).
- Subscriptions to quality content by e-mail.
- Offers and contests.

Access to these proposals is gained by filling out a form, by which the user's information (lead) is obtained, with their interests segmented by subject. This is where we propose to replace the form with the use of a chatbot.

2.4. Metrics Used to Evaluate Success

Web 2.0 analytics allows an analysis of qualitative and quantitative data from both websites and platforms used to advertise the company. With this, the possibility of improving the online experience is promoted, optimizing the sales funnel and improving the expected results [45].

To evaluate success, it is necessary to define when the chatbot will be understood to fulfill the function for which it has been programmed. Delineating that will be easy when framing within the sales funnel.

This can be set as a conversion percentage of the ratio of users from the advertising campaign who have clicked on the ad and subsequently provided their data (leads).

$$Conversion\ rate: \frac{Potential\ customers\ who\ provide\ their\ data\ (lead)}{Potential\ customers\ who\ click\ on\ the\ ads} \quad (1)$$

On the other hand, and based on a study carried out by Peras [46], four additional variables are proposed, both qualitative and quantitative, in order to analyze the user experience:

- Dropout percentage: Among all users who start interacting at least once, the number who do not finish completing their data.
- Average duration of the conversation: Average time that elapses from the start of the conversation until the user provides all their data.
- Percentage of inappropriate responses: Of the total number of answers that the user must provide, the number that are incorrect or not given in the format indicated.
- Return of the user: Percentage of users who interact with the chatbot again once the data collection process has finished.

2.5. Objectives

The general objective was to study how chatbots in e-commerce can increase the number of leads compared to traditional automatic response methods.

The specific objectives were as follows:

- Compare the efficiency of chatbots against conventional methods of generating leads through the conversion rate (leads generated) in the previously determined period.
- Determine the most suitable platform for implementation.
- Analyze the usability of the platform to generate leads (implementation, use, data processing, and effectiveness in established conversations).
- Design and implement a chatbot for the e-commerce of a company.
- Evaluate the results of implementation.

3. Design of the Lead Capture Strategy Through the Chatbot

The inbound marketing strategy that is proposed to optimize the lead capturing process consists of integrating the chatbot in the Facebook Messenger service, including publishing content and automating marketing processes. The possibilities and advantages are shown below.

The objective was to find and compare the advantages that a chatbot can offer compared to the traditional workflow that, until now, was used in capturing leads through forms and subsequent e-mail marketing to encourage users to go through the traditional sales funnel. This comparison is shown in Figure 3.

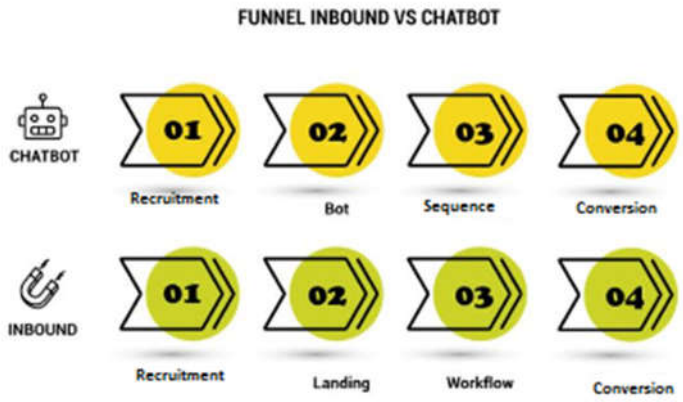

Figure 3. Comparison between chatbot funnel and generic inbound funnel. Source: [47]. Reprinted with permission from Tomás, Á. (2019)

In this integration, the following actions are proposed to achieve the objective:

- Show more personal and humane treatment.
- Encourage greater engagement.
- Increase immediacy.
- Encourage interactivity.

Empathy Map and Buyer Persona

The objective of the empathy map is to be able to characterize, personalize, and better understand a customer segment. The empathy map of a potential customer is summarized in Figure 4.

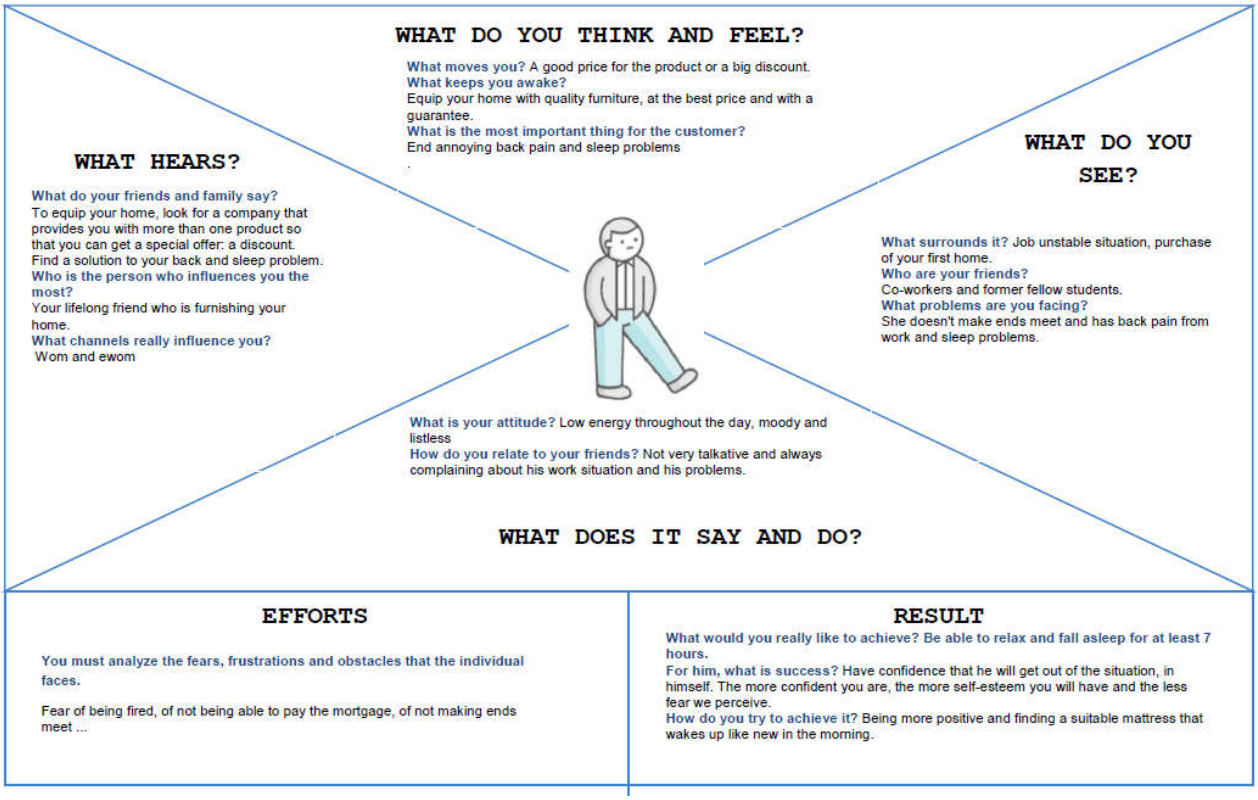

Figure 4. Potential customer empathy map. Source: own elaboration.

Once the empathy map is completed, we can analyze whether the strategy and the product are valid for the type of customer the company is targeting. Figure 5 describes the buyer persona profile of the potential customer.

Fede García	BUYER PERSON	
	Personal context	Administrative.With girlfriend. Without much work experience.
	Demographic data	28 years. He lives on the outskirts of the city with his partner. Salary 1,500 euros per month.
	Goals and challenges	He aspires to get a stable contract and in a couple of years move up in his position.
	Values	Honest, hard-working and involved with the company.
	Objections	He has a very tight salary and cannot waste a single euro.
	Online Activities	He has a Facebook profile that he attends a lot. His Internet searches are to find customer feedback after purchasing a product and compare prices between products.
	Phase in the purchase process	He needs to furnish his home with quality products at low prices and he still does not know the company.

Figure 5. Buyer persona. Source: own elaboration.

Based on the buyer persona, the company gets to know more about what motivates the customer and has a much clearer idea about what content he consumes, what he really needs, and how to access it. In this way, it is easier to understand real consumers who are willing to buy the product.

3.1. Use of Fan Pages for Chatbots

A fan page on Facebook is a specific page of a company with the objective of bringing together the community involved with the business that is being developed.

Fan pages, according to Deny del Valle [48], are characterized by the following:

- Applications, which improve audience interaction.
- Promotion tools, which promote publications and improve the visibility of products.
- Statistical reports, which elaborate on the analyses of promoted campaigns and the engagement of the public, and make it possible to know new "likes", among other aspects.

The benefits of using a chatbot with the company's Facebook fan page are as follows [49]:

(a) Increase the options for attracting new customers. This social network is made up of numerous users around the world, who, depending on the target audience and customer characteristics described in the buyer persona and empathy map, will have access to product advertising and will be able to get in touch easily regardless of the company's location.

(b) Strengthen customer relationships. Easier, faster, and more personalized communication between company and client can be achieved, without forgetting that clients spend most of their time connected to their mobile device, which makes it easier to stay in contact with the company in real time.

(c) Lower customer acquisition costs. By placing a chatbot in charge of capturing customers, the company can spend less money on convincing customers to finalize their purchase (CAC) than it would using traditional conversion methods.

(d) Improve customer feedback and control. It is possible to study how many likes are achieved, what kind of reach posts achieve, how followers react, and how many times customers interact with the company.

A fan page is essential to conduct marketing on Facebook, to be successful on the social network, and to be able to obtain leads through a chatbot.

3.1.1. Facebook Messenger

The choice of using Facebook Messenger as a tool to contact the user was motivated by the following [40]:

- Facebook is the best-known social network and the second most used by the Spanish public, according to an IAB SPAIN study [40].
- Facebook Messenger is a messaging tool integrated within the platform that operates free of charge for all users.
- In the future, the Instagram chat system will have functionalities equal to those of Facebook Messenger and they will be interconnected. This integration is feasible and interesting, as the two social networks are in the same group and offer similar services.
- The API (Application Programming Interfaces) offered by Facebook offers great possibilities for chatbot development, which enhances the design and development for creatives who can facilitate lead capture.

3.1.2. Chatbot Creation and Management Software

Choice of Tool

One of the most important decisions is the choice of software that will be used to create and design the chatbot, since there is no programmer to design it.

From an article published by Data Monsters (a community of big data experts, engineers, and customers) in 2019 [50], more than 50 tools were extracted, from which ManyChat was selected for the following reasons:

- It costs less. The tool offers more features for free than the other platforms and the price of the premium version is scalable according to the number of clients.
- It makes it easier to categorize customers.
- It provides different recruitment possibilities given the possibility of integrating with e-commerce.
- It has the possibility of creating different sequences for the management of workflows and gives conversations more realism.

Integration with ManyChat

After creating a ManyChat account, we selected the free profile, since it has the necessary characteristics for the integration that we intended to undertake with Facebook Messenger.

Registering on the platform was carried out via users' Facebook profiles and accepting the terms and policies of ManyChat. Afterwards, the fan page was synchronized with the profile created in ManyChat so that ManyChat would be able to manage the conversations produced in Facebook Messenger.

Once the profile was created, a brief description of the company was added, and a series of objectives was selected so that the experience would be as personalized as possible, taking into account the business model presented.

In the case of the study company, we notified ManyChat that it is an e-commerce company that sells physical goods and uses a sales platform based on PrestaShop, and it contacts customers mainly through Facebook Messenger.

Personalization of Messages

From ManyChat, four default messages for four actions that users can perform were proposed:

- Welcome message: the first message that subscribers receive when they interact with Facebook Messenger.
- Chatbot subscription message: a confirmation message when users confirm their subscription to the chatbot.
- Chatbot unsubscribe message: a confirmation message when users ask to unsubscribe.
- Default message: an automated message that is sent when users type something that the chatbot cannot recognize.

3.1.3. Lead Magnet

There are different lead magnets that a company can employ depending on its business model, including the following:

- Free webinars. A webinar is an online presentation of specific content that may be useful to subscribers. It should be a recording of no more than 45 min, in which the company can comment on how the product is used.
- Ebooks. The company can develop topics in which it has expertise to help subscribers with knowledge and experience.
- Tutorials. These can help explain to subscribers how to correctly use the items or services they purchase.
- Free trials. With this type of lead magnet, the company can encourage subscribers to become customers quickly.
- Editable templates. These can be provided so that subscribers can download them and use them with their own information.

For this research work, the following lead magnets were used through subscription:
Discounts

The purchase of cheaper items is a widely used sales option. These discounts are only sent to potential customers who subscribe to receive offers or news about the products offered by the company, in order to make them feel that they are special and can enjoy advantages for subscribing, and they will experience a feeling of exclusiveness.

Special offers

Subscribers will be empowered by having the possibility to obtain a series of advantages over non-subscribers, and through this channel can be informed of the news before others.

3.2. Funnel Process

The funnel described in this work takes into account the source page (from which the fan page is reached) and the conversational thread to achieve the lead. It is important to note that it is a lead funnel, not a sales funnel. Fragmenting the analysis of the production process by conducting a separate analysis for each process favors greater efficiency in each although, in return, it increases the temporary cost.

3.2.1. Flow

In ManyChat, all conversation processes are carried out in flows. These flows can be established based on various parameters depending on the objectives to be achieved with the chatbot. The objective in the present case was to generate leads, therefore, a single process or flow was required to generate a funnel to the lead.

Direct message was chosen for subscriptions to offers and promotions, so the conversation would not be misleading.

3.2.2. Funnel to the Lead

The conversational thread begins with an interaction proposal by the chatbot, and the options presented in the Facebook Messenger chat either continue with the funnel to the lead or start a genuine conversation.

The flow, as mentioned, begins with a welcome message, in which the user is encouraged to enter their email to receive notifications about offers and promotions from the company. In this way, the lead magnet is implemented from the beginning of the user's interaction with the company.

The use of emoticons favors action by users, inviting them, in this case, to enter their email in a single message and a single flow [51].

ManyChat, in its premium option, allows information to be saved in personalized fields of users who initiate conversations through Facebook Messenger for further processing. Figure 6 shows the conversion funnel through the chatbot.

Figure 6 shows the steps that are needed to reach the lead.

The user enters the company's fan page and responds on Messenger with their name, and after agreeing to receive offers and promotions, they enter their email.

When the chatbot initiates the conversation through a Facebook Messenger pop-up window, the user need not have intended to communicate in this manner.

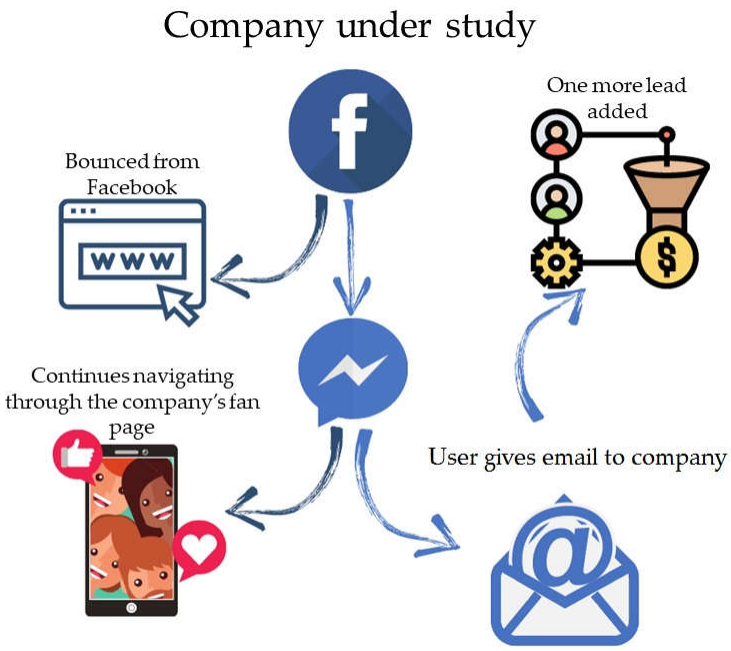

Figure 6. Diagram of chatbot funnel of study company. Source: own elaboration.

3.2.3. Tags

Tags are an option provided on the ManyChat platform to allow segmenting of subscribers based on the flow of messages.

Tags can also be used to optimize communication with subscribers and receive more personalized and relevant messages. That is why the tagging structure must be somewhat similar to the campaigns used in an email marketing strategy; however, in Facebook Messenger, more information can be obtained both quantitatively and qualitatively.

Taking into account that the objective is to achieve leads, segmenting is based on those subscribers from whom enough information has been obtained to be considered as leads in order to classify them in different groups of prospects.

The proposed labeling based on all of this is as follows:

- Potential users: All users when starting a conversation.
- Lead: Users who have provided their email.
- Prospects: Users who are interested in buying a product offered by the company in the next 30 days.

3.2.4. Sequence to Send Lead Magnet

The conversation that will lead to achieving the objective is simple, since the less the user interacts to receive valuable content, the easier it will be to obtain a lead from that user.

In ManyChat, a direct action can be configured when the user enters their email or performs any other action proposed by the chatbot. In this way, the next message that the chatbot will generate is a link through Facebook Messenger to access an exclusive promotion.

After the user accepts the proposal to receive offers through the chatbot, their email goes to a ManyChat database, from which the data are extracted for further processing.

As the user has provided their contact information, they can later be included in a mailing list of promotions and offers.

4. Discussion: Chatbot Implementation in Online Commerce and Open Innovation

4.1. ManyChat Connection with Facebook Fan Page

The first step is to connect the two tools described above, Facebook and ManyChat. The simplicity of the process should be noted, since it is a standardized process requiring only that the person who initiates it has Facebook user access and permission to manage the page.

Having this connection will allow access to the dashboard (Figure 7), which will enable customization and integration of the chatbot. In addition, through this control panel it is also possible to view information on active subscribers, unsubscribed users, and the net balance of subscribers based on the two previous variables.

Figure 7. ManyChat dashboard. Source: ManyChat and own elaboration

4.2. Personalization of the Message

Once the connection has been made, the second step is to personalize the messages sent to users as determined in this work.

First the user receives the welcome message when the conversation begins through Messenger. As previously mentioned, this interaction is used to generate a flow of messages that will allow the achievement of leads.

Figure 8 shows a simulation of how the user data would appear.

4.3. Data Export for Later Use in PrestaShop

To finalize the integration and enable data export from the communication tool, integration through Google Sheet was used.

Data provided by potential clients is accumulated in a spreadsheet in two columns: name and email. After linking with PrestaShop, the data are exported and integrated into the CRM that the company uses to carry out e-mail marketing operations.

4.4. Analyze the Necessary Interactions

Chatbot Testing

A test was carried out with 50 people who interacted with the chatbot, obtaining the following data:

- 47 people entered both their name and email.
- 2 people entered their email wrong.
- 5 people, after entering their name and email, subsequently interacted with the chatbot without receiving a response.

After analyzing the previous data, different automations were proposed for the most common messages so that users would not be left without a response.

As Yun et al. [18] suggest, open innovation engineering must respond directly and more intensively to the demands of society and markets, and the current study is a field study of a particular innovation channel, the chatbot.

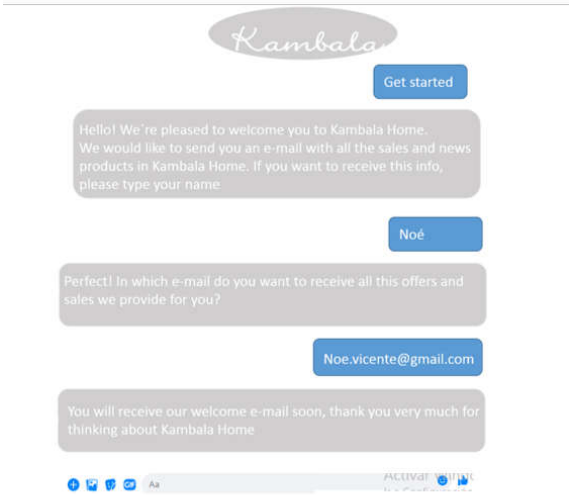

Figure 8. Simulation of conversation where customer data is captured. Source: own elaboration.

Of particular relevance here is the research of Wang and Quan [52] focusing on the effect of open innovation outcomes caused by the environment and network positions when generating R&D alliances. In different chatbot applications, all of this must be taken into account, as the sociocultural characteristics of each country or region will determine

the importance of chatbot use. In line with this, reference should also be made to the studies of Yoo and Kwak [17] and Yun et al. [53] which investigate in depth the cultural and regional characteristics of open innovation that are fundamental when implementing a chatbot, as indicated above.

Yun and Park [19], who investigated how open innovation became important for entrepreneurs, concluded that the community of related users and producers plays a crucial role in the success of the entrepreneurial process. It made sense for us to use a chatbot as the communication channel for this community.

Finally, we cannot forget that open innovation is a powerful framework that encompasses the generation, capture, and use of intellectual property, as defined by West and Gallagher [54], and this process is of vital importance for implementing chatbot technology in the enterprise.

5. Results and Evaluation

5.1. Comparison of Traditional and Chatbot Models

Before the company implemented the chatbot, it obtained leads through a form accessible on Facebook. The form was filled out by the user, entering information in fields for name, surname, and email.

The form abandonment rate was over 80%. It should be noted that in order to fill in the form, Facebook users had to actively search for the command to access it, so it was not possible to generate knowledge about the actions that led users to open the form and fill it out.

For users to enter their data through a chatbot, it is not necessary to generate any action beyond entering the company's fan page, since the chatbot opens a pop-up window through Facebook Messenger to start the conversation. Proof of the effectiveness based on the simplicity of the process is that 98% of people who accessed the Facebook page offered their data.

During November and December in previous years, between 2% and 5% of leads were achieved among users who accessed the website and fan page. In contrast, during the same months in 2020, 25% of leads were achieved among users who accessed the fan page, representing an increase of 500%. These data agree with the results obtained in previous testing of the chatbot described in this work.

The results obtained in this work provide clear evidence in favor of translating the traditional model for obtaining leads into a model with chatbot assistance created on the ManyChat platform through Facebook Messenger.

This improvement in performance when it comes to obtaining leads continues in the company today in the same way that it did in November and December 2020, when 345 new subscriptions were obtained based on notifications of offers and promotions.

5.2. Rejection or Acceptance by the Client

Despite the fact that all external sources consulted expressed rejection by certain social groups that make up the bulk of potential clients for home products because they felt there was no personalized attention, there was also a high level of success in the achievement of concrete actions, mainly due to the reduced response time, as pointed out by Adam et al. [55].

It is important to emphasize that the object of study in this work is the use of chatbots to obtain leads, and as indicated below, this objective was achieved. On the other hand, the perception of users, after providing the information that the chatbot requested of them, decreased. This is because the chatbot only gave certain answers to obtain leads, as it was programmed.

To reverse this situation and improve the user's experience after entering their email, it would be necessary to develop the chatbot in other ways, such as including conversational flows related to resolving doubt and answering frequently asked questions.

One of the keys to generating acceptance is to not include messages without any purpose for the user. Only messages in which a specific user action is sought were created, in

order to maintain simple and direct conversation that would not make the user lose attention, but rather take it as a means to an end.

In the event that the company includes new flows, it is recommended that this factor be taken into account, so that the chatbot is seen as a self-service, instead of being masked as human help, in order to generate flows that follow the parameters of conversations between people, such as humanizing phrases, humorous responses, or the use of emojis where appropriate [55].

6. Conclusions

Regarding the theoretical contribution based on the SOR model, the results obtained in this work extend previous research in the online environment, such as on the navigation structure through restrictive navigation bars [56]. We provide features such as welcoming the customer, emoticons, and clarity of questions, which influence consumer behavior in order to elicit personal information; for example, customers provide their email through the chatbot and become potential leads for the company.

This work presents different processes to generate an effective procedure for obtaining leads through a chatbot. The use of the ManyChat program for Facebook Messenger to support the study company's e-commerce is an important tool to carry out the tasks related to online marketing, which leads to substantial cost savings and improves the experience for potential clients.

The indicators of the objectives, which serve as an evaluation of the procedures established to achieve them, are as follows:

- Increase user return by 5% compared to the previous month in order to provide support 24 h a day, 7 days a week. The scoreboard indicates not only that the objective has was reached, but it was exceeded. However, the support is restricted to clients giving their data to the company. The solution to this problem was discussed in the previous point.
- Full implementation of the chatbot to help highlight the brand and offer a linked value proposition. The chatbot was implemented successfully, effectively fulfilling the assigned tasks. This provides a clear differentiating point from the competition, although a longitudinal analysis of chatbot behavior is necessary to fully understand the consequences at the level of brand positioning with this technology in order to obtain more conclusions in this regard.
- Replace the traditional method of using a form to obtain leads with a chatbot in the sales funnel. As explained above, the study company no longer uses forms filled out by users to create leads. The necessary information is obtained through the chatbot, enabling these leads to be used with an objective focused on email marketing.
- Make the response time in the social network immediate due to the achievement of leads. The chatbot was implemented successfully and its functions include immediate response. The indicator that makes it possible to find out the effectiveness of the processes involved in achieving leads shows that it was possible to make this part of the value chain more effective and efficient, saving costs and potentially generating greater customer satisfaction.
- As already mentioned, lead achievement was increased by 25%, which represents an improvement of 5% with respect to the second objective set (an increase of 20%).

6.1. Implications

In addition to achieving these objectives, other benefits were found with the implementation of the chatbot, such as the following:

Lead generation was easier to measure. This is an effective tool to know the usefulness of the chatbot for users, so we can know in real time how it affects each action or flow that is later added to the chatbot.

It allows greater data entry (offered by Facebook) of potential customers to the company's CRM, not only in terms of data volume, but also quality, since these data are transferred to the CRM immediately. This is important, as the chat is immediate. This means that contact with the user begins from the moment he is interested in what the company has to offer.

However, several drawbacks inherent in the process of obtaining leads were found. Again, there was a percentage of people who did not enter their email correctly. If the user has more than one email, they end up entering one that is not verified by Facebook and cannot be verified by ManyChat, so it is not possible to ask the user for the email again by indicating that there was an error in typing it.

In addition, it was verified that when a chatbot is configured, it must be able to respond effectively to all user requests, since once users obtain an immediate response on a specific topic, they expect the same immediacy when asking about another topic.

The use of the ManyChat platform as a method of generating new leads is recommended as a strategy to start a sales funnel. In addition, the working group recommends reviewing the user contacts referring to frequently asked questions and the company's services and products in order to apply the chatbot as a method of customer service, since this type of attention is expected.

It should be noted that whenever an automated system is used to obtain new contacts for their exploitation, it is necessary to take into account the permissions of the platform for the treatment of the data that will be obtained and updated, since data protections evolve at the same rate as the technologies used to obtain them and are highly influenced by public opinion.

In conclusion, the working group thinks that the further publication of literature on the application of automatic or self-service systems is necessary to generate broader knowledge on the use of these systems in the competitive business environment.

6.1.1. Implications for the Client

Chatbots can help customers who live in remote areas be served appropriately. They can be a good path for customers who ask similar questions, by decreasing the wait time through quick, specific, and simple answers. It can increase points of contact with the company. This will improve communication with the company through Facebook. Reducing the wait time could help to increase a customer's trust in the company.

6.1.2. Implications for the Company

The use of chatbots brings modernity, efficiency, and proximity. It can optimize all company processes, saving resources and time, lowering costs, and improving quality.

A chatbot linked to Facebook can enable better segmentation of the target audience, and thus capture a larger market in a simple way.

A chatbot on Facebook Messenger can generate more conversations and obtain valuable information from consumers so that company employees can intervene at the right time.

The company could reach out and expand its area of activity, in addition to working uninterruptedly 24 h a day, 365 days a year.

In addition, it enables filtering of potential customers according to their level of interest. Not all potential customers are equally likely to make a purchase. The company can know on whom to expend greater or lesser effort to achieve greater sales, consequently lowering the cost of achieving leads.

7. Limitations

During the preparation of this work, Facebook changed its restrictions on the use of its Messenger application API, which represents an important limitation to this work.

The restrictions arose from the platform's attempt to comply with the privacy laws published by the European Economic Area (EEA).

When the study company is found through advertisements on Facebook Ads in Spain, the use of the Facebook API through the ManyChat tool will be limited.

The schedule for the implementation began on 16 November and culminated on 16 December 2020, with multiple functions that will be limited. Among Facebook's changes that interfere with the API, those that would affect the presented proposal would be as follows:

- Sending sponsored messages.
- Being able to optimize conversations or leads on messages, traffic, and conversions.
- Generating metrics on posts for ad reporting and post statistics.

Both Facebook and ManyChat have shown their intention to find different solutions to restore some of the restricted functions without violating the privacy regulations of the EEA.

However, this was not the first regulation of privacy issues to affect chatbots or the ManyChat tool. Legislation that protects consumers and the data of social network users is a topic that has been under review in recent years, and it is expected that there will continue to be changes.

Even with this limitation, we can conclude that the technology that chatbots present can be of benefit in the mass collection of data based on the adaptability and personalization of conversations.

Author Contributions: Conceptualization, N.V.L.; Formal analysis, M.D.I.-M., N.V.L. and N.A.G.; Investigation, M.D.I.-M.; Methodology, C.C.R.; Project administration, M.D.I.-M. and N.V.L.; Resources, M.D.I.-M.; Software, N.V.L.; Supervision, C.C.R.; Validation, N.A.G.; Visualization, N.A.G.; Writing—original draft, N.A.G.; Writing—review & editing, C.C.R.

Funding: This research was funded partially by Universidad de Málaga.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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