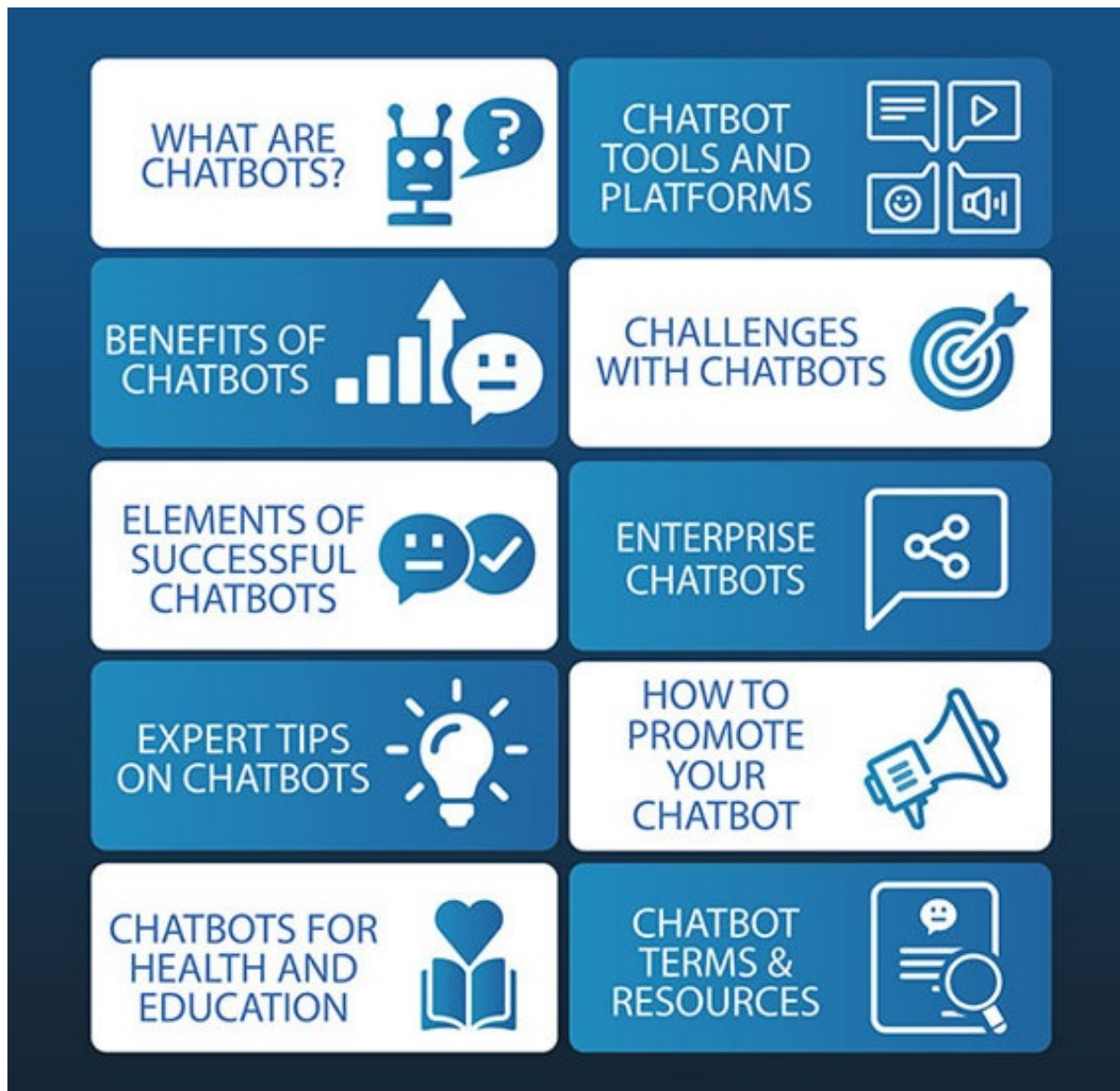


# CHAPTER IV

## CHATBOTS AND HOW THEY WILL CHANGE COMMUNICATION



*Figure 4.1. Topics in Chapter IV.*

**B**ecause of their simplicity and usefulness, chatbots are quickly becoming one of the most accessible and popular ways for companies to start using AI. Some types of chatbots can work independently from AI. However, I thought it was important to cover the topic thoroughly, as experts believe that AI-powered chatbots will take on a larger role in our communication with companies in the future. This chapter will address the different ways that chatbots can be used to improve communication between companies and their customers. It will also cover some of the other advantages, as well as some disadvantages, of chatbots.

While chatbots are still in the early stages of being adopted by companies, I believe it is worth taking the time to learn about chatbot technologies, as many companies are leaning in this direction as a solution for customer service needs in the future.

## 31. What Are Chatbots and Why Do They Matter?

In essence, chatbots are computer programs that conduct conversations through text or audio. These are becoming more commonplace, so it is important to understand how they work and how you can benefit from them.

Eduardo Manchón, a Spanish tech entrepreneur and founder of Panoramio (a service sold to Google in 2007), believes that consumers will primarily communicate with companies through chatbots in the future, as it is a more natural process for starting a conversation than filling out forms on a website. For this reason, he predicts that chatbots will be more popular than websites or mobile apps.<sup>[88]</sup>

Personally, I foresee this happening someday as well, especially when the technologies develop to the point where chatbots are able to operate with voice-based input.

Similarly, Stan Chudnovsky, vice president of Facebook Messenger, believes that in the future people will seek to communicate with businesses more often through messaging platforms, preferring a quick and easy conversational experience to a long wait on the phone.

According to Chudnovsky, over 100,000 developers are currently building chatbots for the Facebook Messenger platform. This lends some credibility to the theory that the best form of advertising in the future will come from a blend of human and chatbot services.<sup>[89]</sup> In this scenario, humans could take over the conversation when questions or problems cannot be answered or solved by the chatbot. At the moment, these kinds of blended chatbot models seem to offer the best results.

There are two basic kinds of chatbot technologies. The first operates under simple, predefined rules, while the second runs with artificial intelligence. One of the primary benefits of using chatbots is that they can increase the speed of communication while offering responses 24/7.

There are a variety of ways that chatbots can be used, such as ordering a pizza, reviewing travel arrangements, asking for product information or receiving beauty tips.

As the technology grows and evolves, chatbots will be implemented in new and innovative ways. Here are just a few surprising statistics about the rise of chatbot tools:

- 47 percent of consumers say that they would be open to purchasing items through a chatbot. 37 percent would buy items from Facebook.<sup>[90]</sup> 67 percent of consumers have interacted with a chatbot for customer support within the past year.<sup>[91]</sup>
- On an Adidas chatbot, over 2,000 people signed up to participate within the first two weeks after launch, with repeated use at 80 percent. After the first week, retention was at 60 percent, which the brand claims is much better than could have been accomplished with an app.<sup>[92]</sup>
- 80 percent of businesses say that they want to offer chatbots by the year 2020.<sup>[93]</sup>

One major factor paving the way for the growth of chatbot usage is the mobile app ecosystem, which is becoming increasingly crowded, making it more difficult for people to get their voices heard. Although the mobile app market may be oversaturated, most smartphone owners only actually use a few mobile apps on a daily basis. This creates a perfect environment for chatbots to really catch on. Chatbots are still relatively new and have that novelty factor, making them an intriguing option for people who are looking to try something different.

Over time, chatbots will become better at matching human conversation, allowing a larger portion of customer interactions and internal company communications to occur through chatbots.

## 32. What Are the Different Tools and Platforms for Chatbots?

You might be wondering which are the main chatbot companies and which tools could help you to get started. There are actually a huge variety of tools currently available, with more being created each day as chatbots are becoming increasingly important for companies.

In Figure 4.2, you will see some well-known companies and tools in the chatbot landscape.

- **Instant Messaging Platforms:** These are platforms where your customers or clients would use the chatbot. For example, for most B2C (business-to-consumer) companies, Facebook Messenger would be the main choice, whereas many B2B (business-to-business) companies could build their chatbots for Slack, an instant messaging tool frequently used by B2B companies.
- **Chatbot Builder Tools:** These are different tools that can be used to help you build your own chatbot. Probably the most well-known options for small and medium companies are Chatfuel and Manychat. I personally recommend Chatfuel, which is also used by many large and well-known companies.
- **AI Tools:** These are chatbot building tools that allow for AI-based features like natural language processing (NLP) or even voice-enabled chatbots. IBM's Watson, Amazon Lex, Microsoft Azure, and Google's Dialogflow are the most recognized providers in this category.
- **Smart Personal Assistants:** These are personal assistants like Google Assistant, Amazon's Alexa, Microsoft's Cortana and Apple's Siri. Out of these, Amazon's Alexa is the one where most companies have built their voice-enabled chatbots, although this has been done primarily by big companies. However, it is possible that in the future, most small companies will also be able to have their chatbots integrated with these smart personal assistants as well.

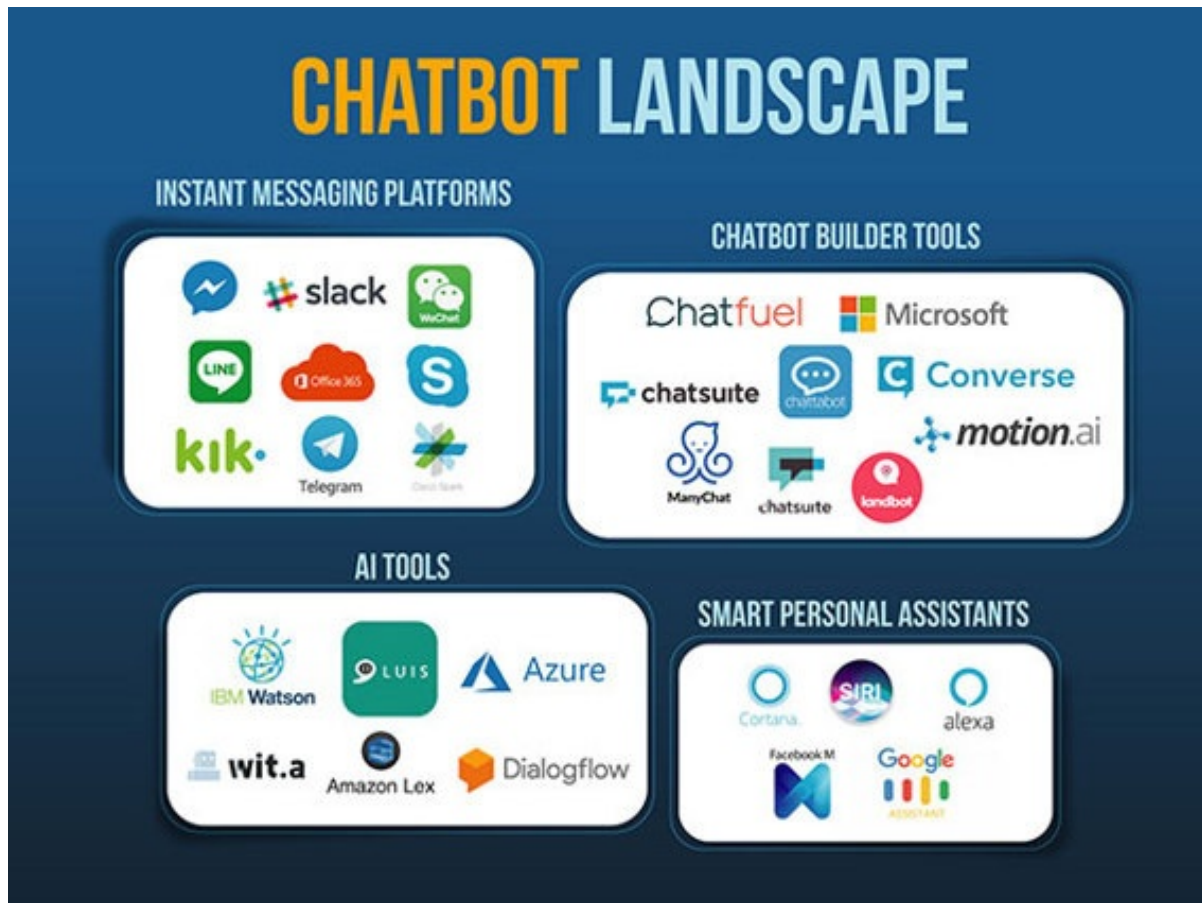


Figure 4.2. Chatbot Landscape.

### 33. What Are the Greatest Benefits Offered by Chatbots?

When a company develops and implements a chatbot, it is usually seeking to automate at least some portion of communication with its clients or customers. For example, up to 80 percent of customer inquiries regarding particular products are repetitive questions rather than unique communications. For this reason, creating a chatbot that can share basic product information makes sense, as customers can receive instant, effective responses at any time of the day or night.

There are many different advantages to using chatbot tools. These not only apply to businesses, but also to various other kinds of organizations. Here are some of the top benefits afforded by chatbot technologies:

- **Instantaneous Communication:** Waiting on hold to talk to customer support is one of the worst aspects of trying to communicate with a company traditionally. Chatbots offer immediate responses to basic customer needs.
- **Decreased Costs of Operation:** After the chatbot itself is developed, there are often little to no costs associated with the use of the tool, as opposed to paying hourly rates and benefits to human customer service workers. In an upcoming section, I'll share a free and effective way to make chatbots.
- **Ease of Access:** There is no need to download special software to communicate with a chatbot, as most chatbot tools can work on popular services like Facebook Messenger, Slack, Telegram, Kik, or even websites. This also means that companies can reach large audiences with simple chatbots.
- **Time Savings:** In addition to the cost benefits mentioned above, companies can also decrease the amount of time they spend on communication tasks by using chatbots.
- **Mobile Services:** For most businesses and organizations, it is more efficient and cost-effective to develop a chatbot than a mobile

app. While user retention on apps tends to be low, it is much higher on chatbots.

- **High Volume Communication:** It is much easier to communicate or offer services to a large audience in a short period of time using a chatbot than with the traditional methods of conversation afforded by a call center or customer service group.
- **Improved Personalization Over Time:** When chatbots employ AI and machine learning, they can remember what a user asked in prior communications, and personalize the current conversation based on information from all previous ones. This provides a much better user experience and higher degree of customer satisfaction, while offering more effective communication patterns than human operators would be able to provide.
- **Increased Open Rates:** When a bot interacts with a user, it can send various types of notifications. These messages tend to bring high “open” rates, usually between 85-90 percent. This is incredible when compared to traditional email communications, which are opened only about 25-30 percent of the time.

In marketing, an additional benefit offered by chatbots is the ability to receive data and analytics on your potential customers, which can then be used to improve your marketing efforts and increase sales.

There are also a few drawbacks to implementing chatbots, especially when an organization doesn't plan responses effectively. Poorly made chatbots can lead to frustrated customers and users. However, companies that carefully and intentionally craft custom chatbots can experience a competitive edge, in addition to the numerous benefits offered by this technology.

### ***Main Benefits of Workplace Chatbots***

Most people who follow trends in digital marketing are familiar with the explosion of growth in chatbots, particularly those used for the purposes of improving the marketing or customer service processes of a business. In many cases, these chatbots have been developed for use with Facebook Messenger



Facebook messenger.

However, many people don't realize that chatbots can also be used for internal communications within a company. They can be particularly beneficial for large companies, offering greater efficiency and improved communication between staff members.

The larger an organization grows, the more it can benefit from having a chatbot. This is because large businesses usually handle higher quantities of data, and have more complex operations and rules in place than smaller businesses.



*Figure 4.3. Chatbot Communication.*

Here are just a few of the ways that workplace chatbots can assist large companies:

- **Faster Receipt of Information:** Instead of spending hours searching for a supplier that will meet your company's needs,

chatbots can help you find the best option in a matter of seconds, while answering your questions along the way.<sup>[94]</sup>

- **Better Training Opportunities for Employees:** Having a chatbot can decrease the time needed to train each new employee who joins an organization. Also, companies that create a basic logic tree-based chatbot can offer their employees better access to all of their internal information because this type of chatbot can be designed around all the data that exists within the intranet of an organization.
- **Improved Communication with Human Resources:** Planning a vacation in the next two months? Chatbots can easily calculate how many vacation days you have left and whether there are any scheduling conflicts with your coworkers.<sup>[95]</sup>
- **Increased Motivation for Your Staff:** Using chatbots, you can very quickly and easily send positive, uplifting notes to your staff members, congratulating them on reaching milestones or simply recognizing their accomplishments.
- **More Rapid Communication:** Traditionally, important news is usually communicated within an organization over email or an internal intranet. However, a chatbot can share new information with all members more quickly, which can be helpful in sudden or complicated situations such as mergers and acquisitions.

These are just a few of the advantages that chatbots can offer to big companies and the list will likely grow as the technologies continue to improve.

## 34. What Are the Primary Challenges for Chatbots?

Businesses using chatbots to communicate with customers is a fairly recent concept. These simple tools will help to improve communication between organizations and the people they serve, especially as they continue to be developed in the future.

Currently, chatbot technology is still in an early stage. As with most new technologies, there are often obstacles to overcome along the way. However, I'm certain that within the next few years we'll be interacting with chatbots in various ways throughout the day, experiencing the numerous benefits they provide.

As you plan out the initial design for your own chatbot, you may want to consider some of the most common challenges experienced by developers working in this space today:

- **Lack of High Quality Examples of Chatbots:** If you were looking to create a website, you could easily jump onto Google or YouTube and find a number of tutorials and best practices to help you along the way. However, because chatbot technology is fairly new, it can be hard to find good information on the design process and potential pitfalls to be avoided.
- **Lack of Ability to Answer Complex Questions:** When a person interacts with a chatbot, they can get easily frustrated if their questions are not answered quickly or appropriately.

Some of the most commonly used chatbots today are built with the logic of a decision tree, working with information from a large database and providing great resources when you choose from the options provided. One example of this would be the recipe supermarket chatbot from Whole Foods.

However, if you enter in a more complicated request or question, these chatbots may not understand some of the phrases you use or may not return the right information. As natural language processing (NLP) and artificial intelligence tools continue to improve in the future, the responsiveness of chatbots will as well.

- **Lack of Empathy and Conversational Quality:** Most people who interact with a chatbot want to be able to have a meaningful conversation, similar to one they might have with a human customer service representative. This means that chatbots need to be able to recognize and respond appropriately to human emotions, showing empathy and other social skills. While chatbots may be better able to achieve this in the future, their conversational abilities today tend to be rather boring and lifeless.
- **Lack of Voice Recognition and Advanced Features:** Currently, most chatbots don't work well with voice recognition, although they may be better equipped for this in the future. The addition of voice recognition and other advanced features will help to increase the desirability and popularity of chatbots.
- **Lack of Quality Artificial Intelligence:** Many chatbots in use today must be preprogrammed and only offer a limited degree of artificial intelligence. Machine learning will greatly expand the capabilities of chatbots. For example, if you were to search for flight tickets for an upcoming trip, a chatbot with good AI could alert you as more economical ticket deals became available. [\[96\]](#)

Because chatbots can become overcomplicated, it is a good idea to design a very simple chatbot when you are first starting out, while keeping in mind the challenges listed above.

## 35. What Are Some Common Elements of Chatbots?

Before venturing into plans to create your own chatbot, it's a good idea to set aside some time to work with a few of the most common kinds of chatbots. This can help you to understand how they work, and learn some best practices, which will help you to build the best possible chatbot service later.

To begin your analysis, look for three to five chatbots and observe the following elements about them: • Is it easy to understand their purpose and how to use them?

- Are their responses clear and helpful?
- What features do you especially like about them?
- What do you find confusing or difficult to understand?

Write down your answers to these questions and analyze which aspects of the chatbots you consider to be the most positive and negative. This will help you to identify which elements you may want to implement, as well as specific mistakes to avoid making, when creating your own chatbot.

Two great resources you can use to help you find chatbots are <https://botlist.co> and <https://chatfuel.com/bots> (which features chatbots created with Chatfuel).

There are a number of well-designed chatbots out there that you can analyze. For example, Marriott International, Inc., a large hotel and resort chain, is currently putting many resources into the development of useful chatbots for its guests. One such chatbot can be found at [m.me/marriottrewards](https://m.me/marriottrewards). I particularly enjoy the introduction video to this chatbot, which clearly highlights the different ways the service can be used.

Another interesting chatbot worth taking a look at is GrowthBot. Created by HubSpot, it was designed to serve sales and marketing professionals, and provides a lot of helpful information pertaining to that industry. For

example, you can ask GrowthBot for a list of the topics that are currently trending on Twitter, the main Google keyword search rankings for any company, or what software is used to run a particular website. You can try out this chatbot for yourself at <https://m.me/growthbot>.

## ***Developing Your Chatbot***

As you start planning the development of your first chatbot, try to identify the key elements that you want to include. Here are some basic examples of factors you should take into consideration: • **Type of Chatbot:** Are you looking to create a rule-based chatbot, or a more complex one that offers AI-powered elements such as natural language processing? In most cases, I'd recommend starting with a rule-based chatbot designed to provide basic information.

- **Communication Style:** Depending on your company's needs, you may want to customize your chatbot's conversational tone to be either on the friendlier side or a little more serious. Generally, it's a good idea to keep conversational responses friendly and light.
- **Use of Emojis:** When studying other chatbots, take notice of the kinds of Emojis they use in conversation. When used properly, Emojis tend to improve the effectiveness of textual communication. Because they add emotional cues, Emojis can make communication feel more humanlike, which helps to build the user's trust.
- **Content:** What kinds of content will you curate for your chatbot? For example, you can offer videos, PDFs or audio files to users through your chatbot service, so carefully consider which forms of media will best communicate to your target audience. For an even more effective user experience, and to encourage engagement, I recommend creating exclusive content for the chatbot.
- **Facebook Messenger Chatbots:** One of the primary benefits of building a chatbot on the Facebook Messenger platform is the ability to have ongoing broadcasts, which allows you to be in more frequent communication with your subscribers. If you choose this option, always plan your content out in advance. Also, avoid

sending out too many messages within a short period of time. Otherwise, your subscribers might feel as if they are being bombarded with messages or receiving spam.

### ***Example of a Chatbot***

One simple example of a high quality chatbot comes from Whole Foods, which is an American supermarket chain now owned by Amazon. It is hosted on the Facebook Messenger platform.

To find the Whole Foods chatbot, visit:

[www.messenger.com/t/wholefoods](http://www.messenger.com/t/wholefoods)

As with all chatbots on Facebook Messenger, to begin, you'll want to look for the button near the top that says, "Get Started" and click on it.

**1. Welcome Message:** In this area, you can greet the user and give an overview of the kinds of information the bot provides. It's best to keep this content short and simple. Notice how Whole Foods also offers a quick sentence about how to start over, if needed. From here, the user clicks on "Got It."





*Figure 4.4. Chatbot of Whole Foods – Welcome Message.*

**2. Main Menu Items:** This section is a place to provide various options and a picture, if desired. It is usually a good idea to limit your menu items to three options, if possible, so that your menu does not become overly complicated. Try to consider the things that your ideal clients would most likely want to find.

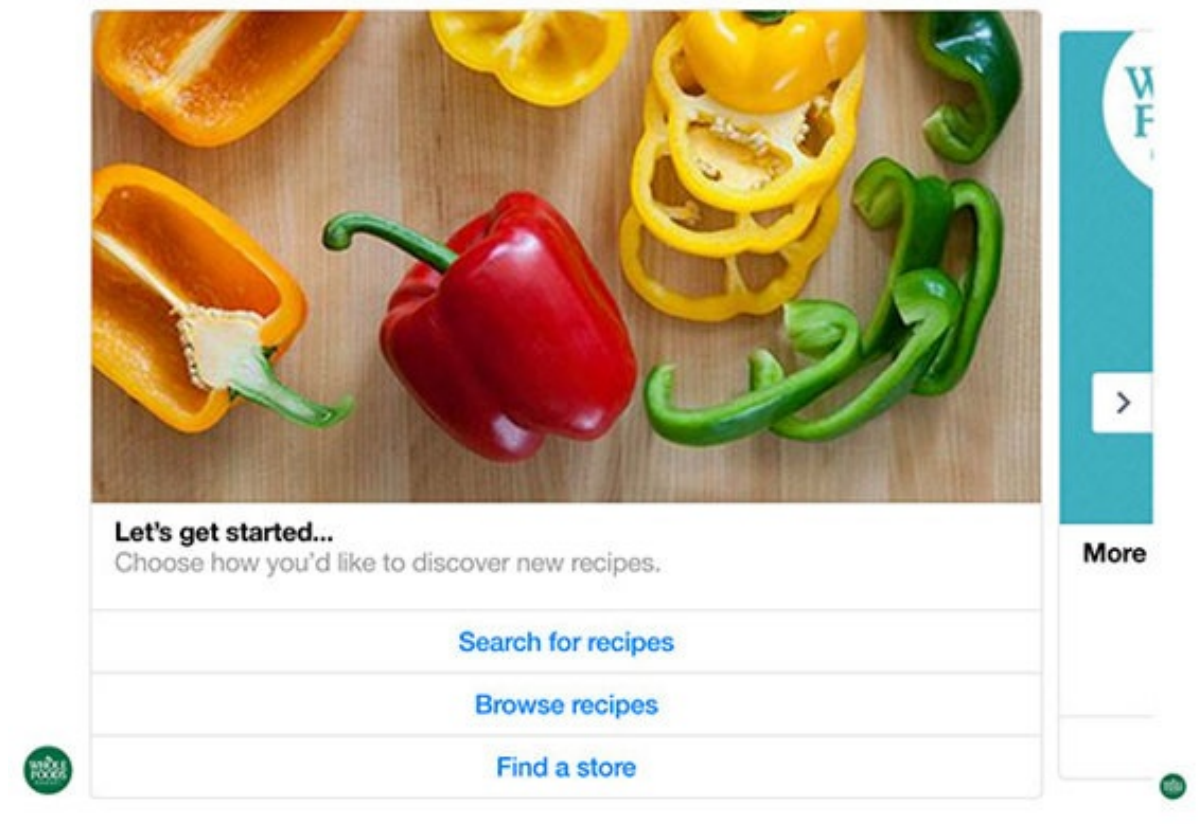
In the example provided, the options for the Whole Foods chatbot include:

- Search for recipes

- Browse recipes

- Find a store

Here, I've selected the option to "Browse recipes".





*Figure 4.5. Chatbot of Whole Foods – Menu.*

**3. Dive Deeper Into the Options Available:** After I've selected "Browse recipes", the chatbot then offers me three more options to choose from, which include type of dish, cuisine, and special diets, in addition to an option to go a step back in the menu.

I select "Type of Dish."

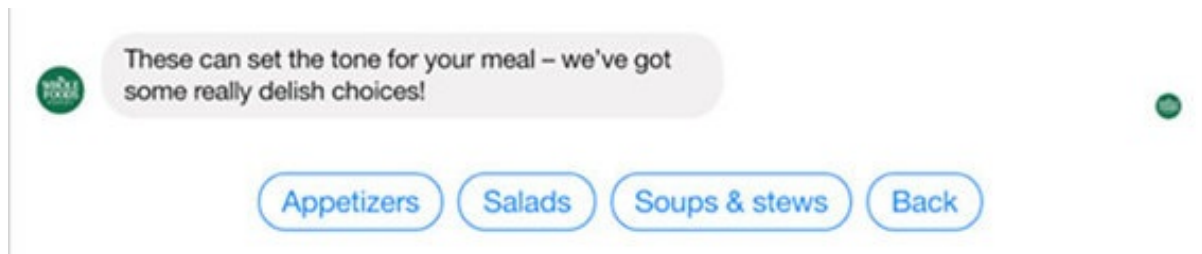
**4. Ask More Specific Questions:** Based on the answer I chose above, the chatbot follows up by asking which part of the meal I'm planning, so that it can customize the information that it presents appropriately.

I select "Apps, soups & salad."



*Figure 4.6. Chatbot of Whole Foods – Giving Options.*

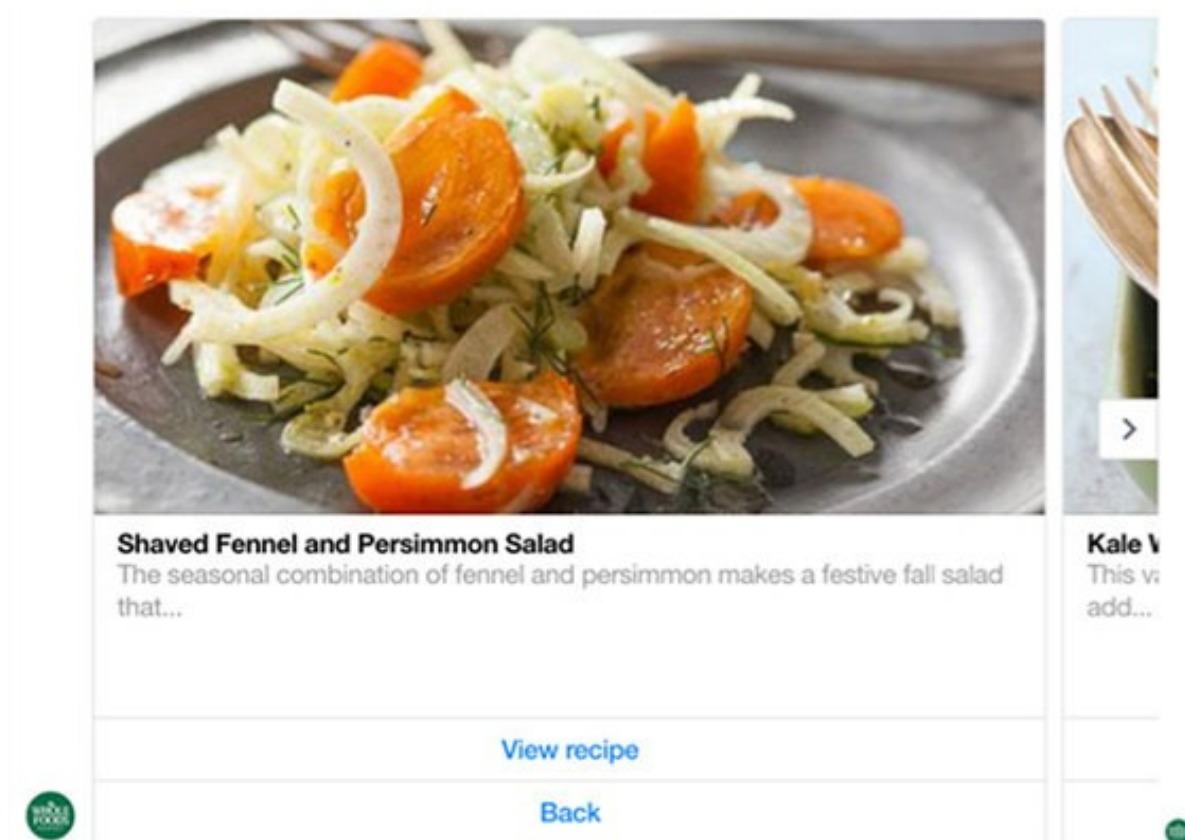
The chatbot responds with a pleasant message and allows me to be even more specific in my request, checking to see whether I am looking for appetizers, salads, or soups and stews, while again providing a way to step back one level in the menu.



*Figure 4.7. Chatbot of Whole Foods – Giving More Recipe Options.*

I select "Salads."

**5. Information is Presented:** Based on the options I selected above, the chatbot provides several recipes, which I can navigate easily with the directional arrows.



*Figure 4.8. Chatbot of Whole Foods – Different Recipe Options.*

As I select the option to “View recipe,” I am directed back to the Whole Foods website, where I can view the recipe in its entirety.

By navigating through the Whole Foods chatbot, you can not only see how the bot is created to work, but also enjoy a more engaging experience than you might through a traditional web search on the company website. You may not need quite as many steps for your clients, depending on what kinds of things you will be offering, but it is a good idea to include relational, conversational responses along with your menu options.

In this instance, as well as in many other chatbots for large companies, the bot message structure looks something like this: • Welcome message

- Three options provided
- Specify the search
- Offer results

For smaller companies or consultant services, you might consider using a slightly different structure, illustrated below: • Welcome message

- Three options
  - Get information about our products
  - Join our course
  - Contact us

I would recommend taking some time now to test and review a number of different chatbots, not only from large companies, but also from some of the smaller ones.

## 36. What Are Some of the Most Common Enterprise Chatbot Providers?

Although small to medium-sized businesses may be more comfortable using simple and basic chatbot providers, some of the larger B2B (business-to-business) organizations may want to choose a more robust and well-known technology company to partner with as they build chatbots for their customers or staff.

Below are some of the top companies that currently provide chatbot services, each of which does require some basic technical knowledge to use.

- **IBM's Watson:** IBM created the technology used to power Watson, and now offers a tool which, through the use of Watson services, assists you in creating your own conversational chatbot, known as a *cognitive chatbot*. This tool includes features called Watson Tone Analyzer and Watson Conversation, both of which allow for better interpretation of conversational cues, helping users to design more powerful features and applications than are possible with basic chatbots. This product is currently employed by several large companies in the U.S., including 1-800-Flowers, major retailer Macy's, and office supply chain Staples.  
<https://www.ibm.com/cloud-computing/bluemix/watson/cognitive-chat-solution>

To begin creating a chatbot with the help of IBM's Watson, I recommend reviewing the detailed, step-by-step tutorial entitled *Build a Chatbot in Ten Minutes with Watson*.  
[www.ibm.com/blogs/watson/2016/12/build-chat-bot](http://www.ibm.com/blogs/watson/2016/12/build-chat-bot)

- **Amazon Lex:** This chatbot building tool is available through Amazon Web Services (AWS), which has been used for years as a website hosting service. Amazon Lex enables users to employ automatic speech recognition (ASR) and natural language understanding (NLU), the same deep learning technologies behind Alexa, the intelligent personal assistant developed by Amazon. For

help in starting to use Amazon Lex, you can review this guide:  
<https://aws.amazon.com/lex/getting-started>

- **Microsoft Bot Framework:** Microsoft is also investing heavily in chatbots, partnering with other companies to develop stronger chatbot technologies. Through Microsoft Bot Framework, users can create their own powerful AI chatbots that can be hosted in a variety of platforms, including Skype, a telecommunications software product that is also owned by Microsoft. You can review a list of the chatbots developed through the Microsoft Bot Framework here: [tps://bots.botframework.com](https://bots.botframework.com)

You can also view guides on how to get started using the tool for yourself here: <https://dev.botframework.com>

All of these resources require some degree of technical knowledge and are somewhat more complex to use than basic chatbot providers, but in return they are able to offer greater benefits and features, including image and speech recognition.

## **37. What Are Some of the Most Valuable Expert Tips on Chatbots?**

Lior Romanowsky, founder & CEO of Spartans AI Innovation, has a lot of experience creating and implementing chatbots for companies in different industries. Spartans also happens to be the company that made my chatbot, where you can find additional information related to this book and which can be found at: [m.me/lassevideo](https://m.me/lassevideo).

In the short interview below, Romanowsky shares some of the key mistakes companies make when creating chatbots, as well as why he recommends using Chatfuel for anyone who is interested in getting started in chatbot design.

***Why do you think chatbots are becoming so important and the use of chatbots is growing so fast?***

*“Chatbots have been around since the age of mIRC, but today they are finally blossoming for several reasons. First, messaging applications are becoming increasingly popular and they are a rapidly growing segment of the social world. We see applications like Whatsapp, Messenger, Viber and others reach billions of active users, and people use them to communicate with each other on a daily basis. Following the example of the Asian markets and WeChat, Facebook and other leading social apps have started opening up their developing platforms to chatbots. This allows businesses and brands to offer a more efficient and convenient (in most cases) way to interact. I definitely see chatbots, both textual and vocal, taking on a much more significant role in our lives over the next ten years. They will be all around us, from our refrigerator chatbots to our cars that will be asking us where to go next.”*

***What are the biggest mistakes companies normally make with chatbots?***

*“One of the biggest mistakes companies are making in the world of chatbots is trying to recreate interfaces from the world of mobile or web. Chatbots are quite different and the user experience should be designed differently. There’s no point in recreating something that users already*

*love using on other interfaces. With chatbots what works best is bringing automated insights, updates and offerings and not just plain information like what is so often presented on the company websites.*

*Another common mistake is the lack of clear guidance in chatbots. The chatbot entity should guide the user to the most relevant option or solution for his or her needs and not just wait for him to ask. A lot of large companies have invested time and effort into developing AI-powered chatbots that work with natural language processing (NLP) capabilities which have failed. People still prefer to press stuff and not just make up questions about what they need. When designing the chatbots we need to anticipate the users' needs correctly."*

### **What are the advantages of Chatfuel over other chatbot creation tools?**

*"Chatfuel is a real market leader in the world of chatbot builders. It allows a wide spectrum of users (novice and advanced users) to easily create simple chatbots with very good integration capabilities and without coding. Another useful tool called Chatflow allows for short implementation time and validation of ideas, and is easy to use, even for non-technical people. It's easy to use, free for the most part, and a very good starting point for anyone that wants to experience chatbot development.*

*Solutions like Watson, Lex, Wit and DialogFlow are definitely services that are less accessible and clear to users without the proper chatbot coding skills. Those services bring a lot of added value in terms of AI-powered natural language processing (NLP) capabilities (that Chatfuel lacks) and are basically complementary to Chatfuel. Nowadays, in addition to Chatfuel, we mainly use DialogFlow, Wit.ai and Rasa (which is a server-side solution) to add NLP capabilities to our custom-made platforms and projects."*

You can find more information about Lior Romanowsky and Spartans AI at: [www.spartans.tech](http://www.spartans.tech)

## 38. How Can You Promote Your Chatbot?

Once you've created a chatbot, the next priority is to make sure that users can easily find and engage with it. Because chatbots are still relatively new and offer a novel experience, users might be more interested in using your chatbot than they would be in subscribing to your email list.

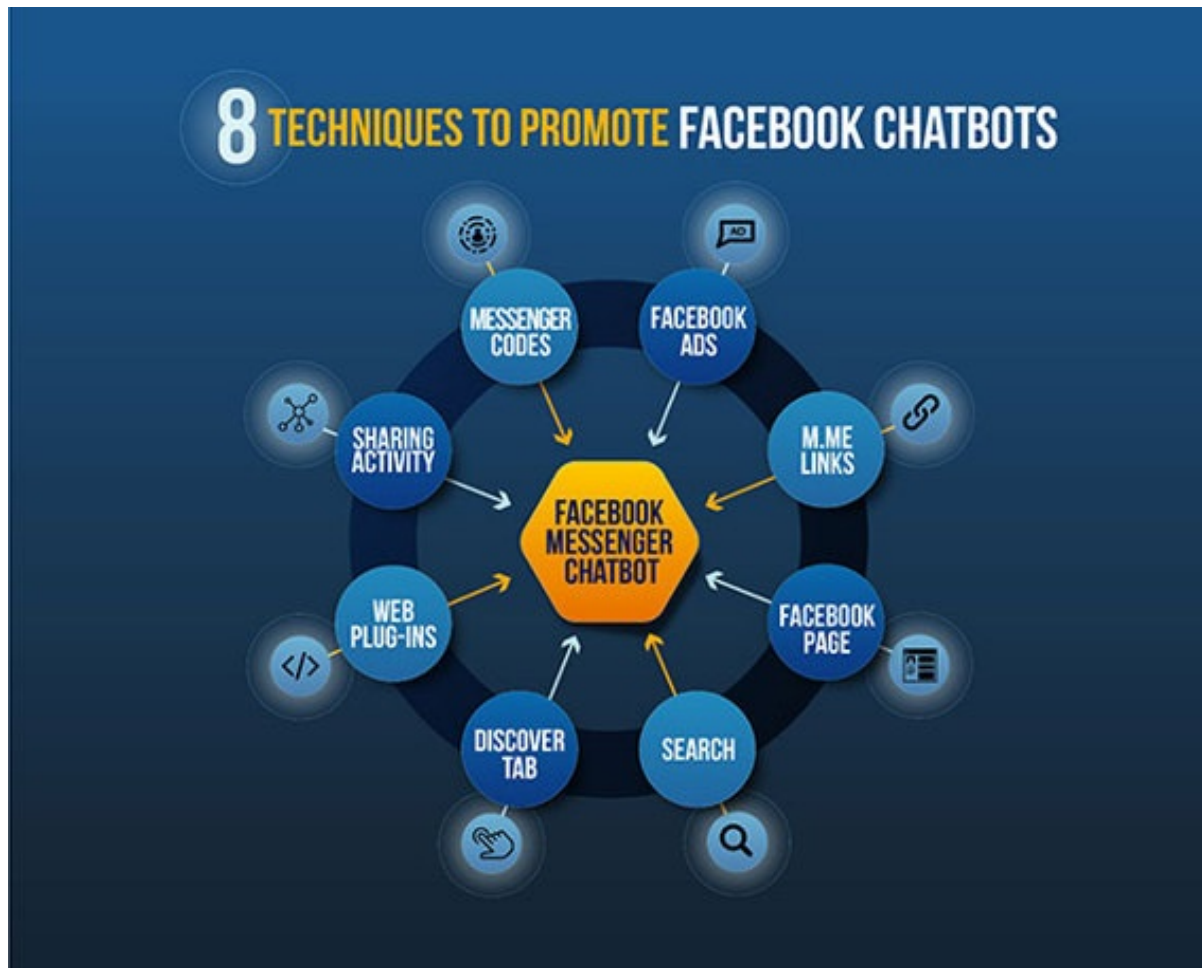
There are a number of ways that you can entice users to try out your chatbot. Here are just a few ways you can promote your chatbot if it runs through Facebook Messenger:

- **Facebook Ads:** In the past few years, the use of Facebook ads has become one of the most effective ways to promote online content. Although the marketing space on Facebook is considerably more crowded now, ads that specifically promote Facebook Messenger bots are not all that common, so they can be an effective tool to set your chatbot apart. You can use these ads to highlight the added value users can experience by joining your chatbot service.
- **M.Me Links:** These are shortened links that can direct people straight to your chatbot while being shared easily through a variety of mediums, including your website, YouTube videos, email newsletters, instant messaging services, and more.
- **Facebook Page:** Make sure to market your chatbot on your Facebook page as well, so that visitors and fans can easily access and use your chatbot directly through your page.
- **Search:** Users can also find your chatbot by searching for it on Facebook Messenger. While this method can help you get a few new users, people tend to rely more heavily on Google searches to find content, as Google.com is so well-known as a reliable search engine.
- **Discover Tab:** This is a relatively new feature to the Messenger mobile app, where users can go to find new bots to try. In order to have your chatbot appear in Discover Tab, you'll need to submit it



here: <https://developers.facebook.com/docs/messenger-platform/discovery/discover-tab>

- **Web Plugins:** It is fairly easy to set up plugins on your website that allow visitors to engage with your chatbot directly from the site.
- **Sharing:** Facebook also allows chatbot users to share the content they discover with others. Increase your rate of sharing by curating interesting chatbot content and implementing a share button to make it easy for users to pass it along to their friends.
- **Messenger Codes:** This is a trendy new code system that is generally not yet well-known among the general public. This system basically provides users with codes, through their Facebook pages or smartphones, that allow them to easily access your chatbot. These codes could work particularly well for local businesses, as they could be placed in a store window, allowing people who walk by to quickly and easily scan the code to join the chatbot service.



*Figure 4.9. Techniques to Promote Facebook Chatbots.*

To truly maximize the results you can derive from your chatbot, think about the best ways that you can drive users toward your chatbot, while also promoting the features and benefits that your chatbot can offer to subscribers.

## **39. How Can Chatbots Be Used in the Health and Education Fields?**

When most people hear the word “chatbot,” they think of customer support. While many of the chatbots currently in operation were indeed created for customer service needs, I believe that some of the greatest benefits chatbots have to offer are yet to be seen. In particular, I predict that chatbots will have tremendous positive impacts on the fields of health and education.

Because many of the tasks performed in these industries are simple yet important, chatbots could be an excellent tool for these areas in the future, providing automated assistance that can generate profound benefits.

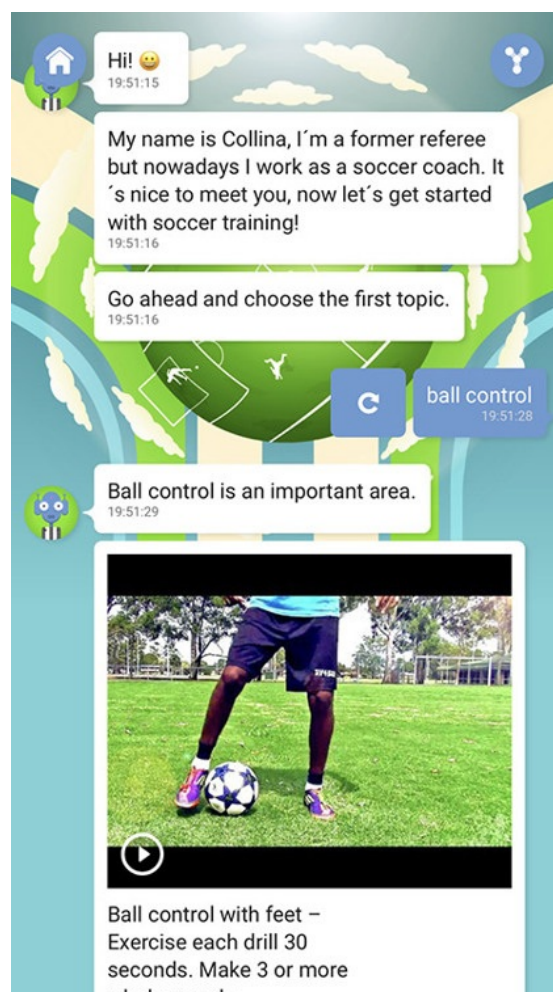
### ***Educational Chatbots***

In the future, many basic learning opportunities will likely begin with an interaction with a chatbot. In the past, a person who wanted to learn something new had to find the right book and take the time to read it thoroughly to understand a new concept. Today, we can learn by simply visiting a website or watching a video. However, none of those activities have the same potential power as interacting with a well-designed educational chatbot.

In the future, educational chatbots will probably be developed to be able to incorporate information about a particular student’s knowledge level about a given topic. It could then use this information to provide customized recommendations on the educational materials that would best meet that student’s needs. Because of its flexibility and relational design, a chatbot provides an interactive experience with the potential to be much more interesting and engaging than watching a video or reading a book, both of which are fairly passive activities.

This is not to say that we will no longer need teachers, instructors or coaches, but rather to suggest that chatbots could provide people in those roles with incredible tools to offer learning experiences that are more personalized and effective.

Some educational institutions could begin implementing chatbots right now to offer supplemental information to their students. One example of a basic learning chatbot that is available already is called SoccerAI. This chatbot, which is available on the App Store for iOS devices, can be used to learn the basics about how to play soccer. A friend of mine told me that her child developed an interest in the sport after using the chatbot, something that may not have happened by simply visiting a website or watching an educational video.



*Figure 4.10. Soccer AI Chatbot.*

SoccerAI was developed by HeadAI, one of the leading companies in the field of educational chatbots. Harri Ketola, the CEO of the company, told me that the instructional content for this chatbot is curated through artificial intelligence. As most of SoccerAI's content is in the form of YouTube videos, an AI process is used to sort through massive quantities of videos, find the ones that are most relevant and interesting, and organize them for the chatbot's purposes. You can learn more about this chatbot here: [www.headai.com/soccerai](http://www.headai.com/soccerai)

### ***Health Therapy Chatbots***

Currently, there is an ever-increasing demand for the development of technology to improve healthcare. As I've mentioned in other chapters, one of the challenges that we'll likely face is an increase in mental disorders related to overdependence on technology and reduced social interactions.

Chatbots could offer one potential solution to this problem. One example of such a chatbot, which is hosted on Facebook Messenger, is called Woebot. This chatbot uses cognitive-behavioral therapy (CBT) to help users work on solving their emotional problems by changing harmful thought and behavioral patterns. <sup>[97]</sup>

The Woebot chatbot tracks a user's mood by asking simple questions and learning from the responses given over time. You can get more information about this chatbot at <https://woebot.io>

Based on the answers the user provides, Woebot offers suggestions or links to helpful videos or games with the objective of helping the person to change their outlook and start to feel better.

Researchers at Stanford conducted a randomized controlled trial test of this chatbot with a number of young adults who experienced symptoms of depression and anxiety. Here are just a few of the comments the users shared:

*"I love Woebot so much. I hope we can be friends forever. I actually feel super good and happy when I see that it 'remembered' to check in with me!"* <sup>[98]</sup>

*“I really was impressed and surprised at the difference the bot made in my everyday life in terms of noticing the types of thinking I was having and changing it.”<sup>[99]</sup>*

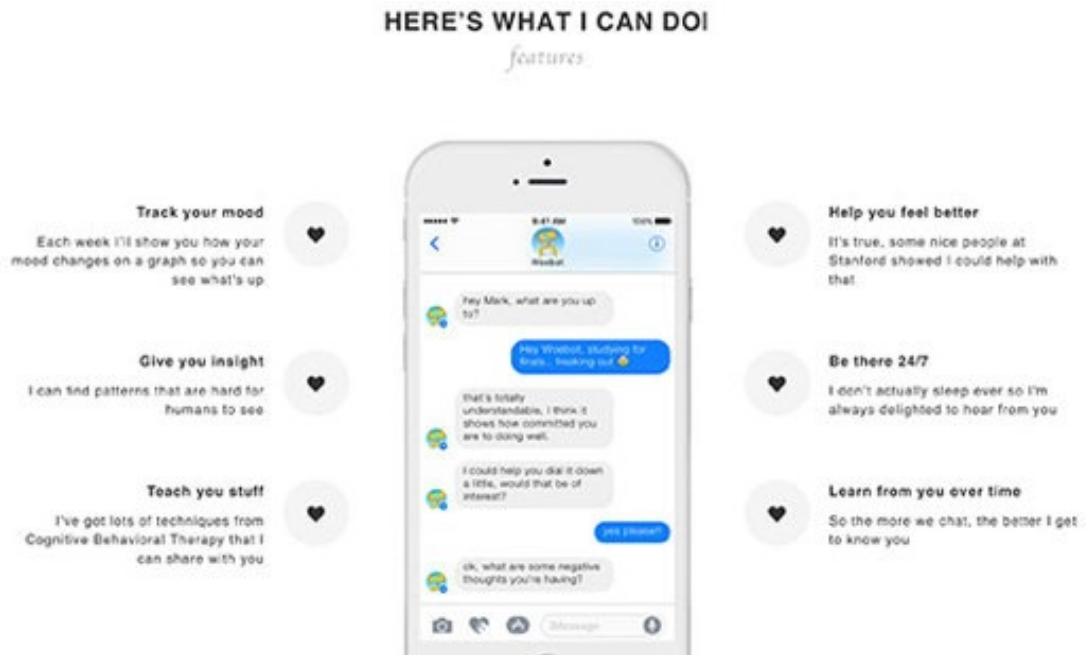
*“Woebot is a fun little dude and I hope he continues improving.”<sup>[100]</sup>*

The answers above showcase the gratitude some users felt toward the chatbot, and how they enjoyed its humanlike qualities, with one user even personifying it to the point of calling it “little dude.”

Imagine the possibilities in the future, when we might be able to have a personalized AI doctor that can offer basic diagnostic questions and suggestions, while letting us know when we need to make an appointment with a human physician. We could also benefit from personal coaching chatbots designed to help us reach our personal and professional goals.

There is an abundance of ways that we could benefit from similar health-based chatbots in the near future. As with any medical advice, it’s always a good idea to seek out scientific evidence supporting any claims made about the health benefits a chatbot can provide. Likewise, the creators of these chatbots have a high degree of ethical responsibility to their users, as these tools can be used to alter human behavior for better or for worse.

One final challenge for many of these kinds of health bots will be the issue of privacy. Users will undoubtedly be concerned about whether their personal comments regarding their wellbeing will be saved on a cloud-based hosting service that could be vulnerable to hackers. For this reason, security is a very important issue that will need to be addressed by chatbot developers.



*Figure 4.11. Woebot's Website Shows What Woebot is Able to Do.*

## 40. What Are Some Helpful Chatbot Terms and Resources?

In this section, we'll cover some of the most common terms related to chatbot design, in addition to some helpful resources you can use to learn more about employing this type of technology.

### *Common Chatbot Terms*

**Broadcast:** A message that is sent proactively, rather than reactively, to your chatbot's users. A single broadcast can be delivered to all users or to a particular segment of your list of subscribers. For chatbots that operate through Facebook Messenger, users need to subscribe to your chatbot service in order to receive your broadcasts.

**Conversational Flow:** The degree to which a chatbot is able to mimic the rhythms and tones of natural human conversation when communicating with users. As you design your own chatbot, you should consider how you want the conversational flow to occur between chatbot and user.

**Conversational User Interface (UI):** An interface that is designed to be used based on written or verbal human speech, rather than graphics, links or buttons. When designing a chatbot, it is important to consider the ways that you can make your conversational UI simple and intuitive for your users. [{101}](#)

**Dialogue:** The chatbot's part in conversation with users. A chatbot's dialogue should be purpose driven and engaging.

**Entity:** An entity represents a data type that provides specific information on what the chatbot user wants. [{102}](#)

**Get Started Button:** A button that users can press to begin interacting with the chatbot. On Facebook Messenger, a chatbot will not begin a conversation until the user clicks on the "Get Started" option.

**Intent:** The intended meaning of the user's input. Intent is particularly important for chatbots built using natural language processing (NLP), but



less so for traditionally designed, rule-based chatbots.<sup>[103]</sup>

**Suggested Responses:** Examples, offered by the chatbot, of ways the user can answer a question. This is a way for the chatbot to provide the user with conversational guidance, as well as insight into the kinds of services it offers.

**Web Plug-Ins:** A type of software that can add customized features to a website. The Facebook Messenger platform allows users to begin a conversation with a chatbot on a website through the use of various web plug-ins.

**Welcome Message:** The initial message users see when they begin interacting with a chatbot. This message should be brief and clear, while communicating what the user can do with the chatbot. Alternatively, you can use a welcome video.

### ***Recommended Resources on Chatbots***

**BotMock:** A visual tool that allows you to build and test the conversational flow for your chatbot.

URL: <https://botmock.com>

**Chatbots Magazine:** A publication with a high volume of quality information on chatbot technology and design.

URL: <https://chatbotsmagazine.com>

**Chatbots Journal:** Another online publication sharing valuable information on chatbots.

URL: <https://chatbotsjournal.com>

**Chatbot's Life:** An online magazine with a lot of useful chatbot tutorials and information.

URL: <https://chatbotslife.com>

**BotList:** The most well-known and commonly used directory of chatbots.

URL: <https://botlist.co>

**Chatbots.org:** Another directory of chatbots with additional information on international chatbots.

URL: <https://www.chatbots.org>