

Providing Effective and Low-Cost Customer Service with Artificial Intelligence

Amanda Lane

Amanda-lane@live.ca

CONTENTS

Overview: The Challenges of Customer Service	2
What are Automated Online Assistants	3
How Automated Online Assistants Work	4
Benefits of Automated Online Assistants	5
1. Cost-Effective.....	5
2. Efficient Response	6
3. Reduces Call Volume	6
4. Consistent Quality of Service.....	7
5. Builds Trust with Customers	7
The Future of Customer Service	8
Works Cited	9

OVERVIEW: THE CHALLENGES OF CUSTOMER SERVICE

Providing effective customer service while staying within budget is challenging, especially if your company receives large call volumes.

Phoning a company for help is frustrating for customers if they face long waits and poor service. One way to ensure good customer service is to reduce wait times by hiring more customer service representatives. This is time-consuming and expensive, however. Customer service has a high turnover. You then have to spend money and time recruiting and training new employees.

In addition, representatives are only human. They have bad days, they get tired, and they become frustrated. The service they provide suffers as a result.

An artificial intelligence (AI) program called an automated online assistant, or virtual assistant, can provide quality customer service and help reduce the number of calls to your call centre.

An automated online assistant provides reliable and interactive customer service through your website. It can answer customers' questions, help them find information they are looking for, and guide them through processes, such as making a purchase.

This paper will:

- Describe automated online assistants.
- Discuss how they can benefit your company and save you money.
- Provide examples of companies that are using them for customer service.

WHAT ARE AUTOMATED ONLINE ASSISTANTS

An automated online assistant is an artificial intelligence program. AI is not just the cyborgs and robots of science-fiction. It refers to a computer program capable of perceiving its environment and acting to achieve a goal (Stuart and Norvig, 2003). In the case of an automated online assistant, it perceives and understands customer questions, and it takes steps to provide helpful answers.

An automated online assistant consists of an avatar (an image of a person) capable of facial expressions and a chat box where customers can type questions. Like a live representative, the assistant provides information through a conversation with the customer. Most assistants answer with a written response, but some can speak.

The assistant loads relevant pages of your website to help customers find the information they need (see Figure 1). It also guides customers through processes, such as checking a bank account or changing their phone plan. Some assistants can perform tasks for the customer such as changing account settings (Cody, 2012). To accomplish these tasks, an automated online assistant contains complex programming based on research in AI.



Figure 1: Ikea's automated online assistant, Anna, displays an order form in response to a customer's question

HOW AUTOMATED ONLINE ASSISTANTS WORK

An assistant's programming includes the following elements:

DIALOGUE SYSTEM: The program translates human language it into computer language in order to process it. It then responds to the customer in human language (Stuart and Norvig, 2003). The automated online assistant is capable of making small talk and holding a conversation with a person.

EXPERT SYSTEM: The program has a large knowledge base. It analyses knowledge so it can choose the best response to a customer's question (Barzilayy, n.d.).

AVATAR: The program includes a simulated human face that is capable of emotional expressions such as smiling and nodding. The avatar makes the automated online assistant more interactive and helps simulate human social interactions (Reeves, n.d.).

BENEFITS OF AUTOMATED ONLINE ASSISTANTS

An automated online assistant offers many benefits to your company and improves your customer service. The benefits are outlined in the following chart. I discuss these benefits in depth below.

Cost-Effective	Reduces Call Volume	Quality Service
<ul style="list-style-type: none">• Works for free.• Reduces need for new call centre agents.	<ul style="list-style-type: none">• Reduces calls up to 50%*• Helps customers solve problems.	<ul style="list-style-type: none">• Always available 24/7.• Responds to customers immediately. No waiting on hold.

*Source: "Advantage Over Human Nature":
<http://info.creativevirtual.com/blog/bid/95704/The-Virtual-Agent-s-Advantage-over-Human-Nature>.

1. COST-EFFECTIVE

The initial cost of an automated online assistant depends on the level of complexity you need it to have. Once you've paid for the assistant, however, it incurs no more costs.

Because it can serve thousands, of customers at once, you don't need to hire as many representatives (Cody, 2011). It does not quit, so you don't have to spend resources finding and training a new customer service representative.

2. EFFICIENT RESPONSE

The automated online assistant is available 24 hours a day, seven days a week through your company's website. Unlike live representatives, customers don't have to wait on hold to speak to the assistant. When the customer clicks on the automated online assistant, it is available immediately, and it won't put the customer on hold at any point.

3. REDUCES CALL VOLUME

Call volumes drop when you use an automated online assistant because many customers receive the information and help they need from the assistant. For example, insurance provider Aetna employed an automated online assistant named Ann. It spoke with 2,500 customers daily and resulted in a 29% decline in calls (O'Donnell, 2011).

O2, a mobile provider in Britain, has an automated assistant named Lucy (Figure 2). In two years, it answered over a million questions. Two-thirds of the people who speak to it don't seek help anywhere else (Cody, 2012).

An automated online assistant helps improve customer service offline as well. The reduced call volume means that the customers who phone your company don't wait as long to speak to someone.

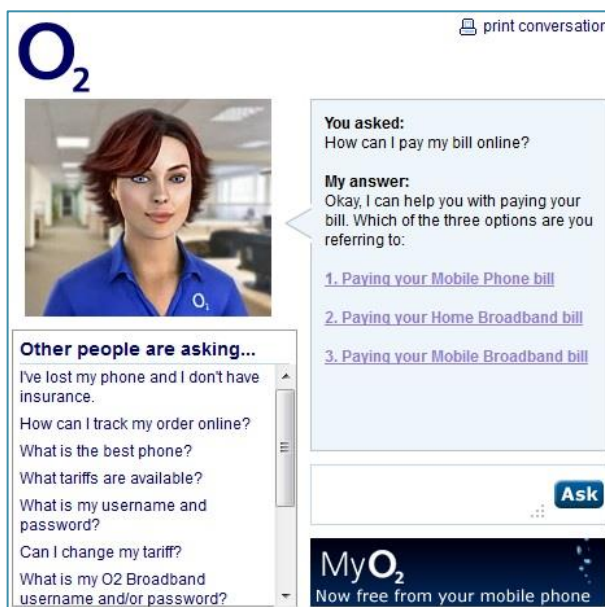


Figure 2: O2's automated online assistant, Lucy, has answered over a million questions (<http://www.o2.co.uk/>)

4. CONSISTENT QUALITY OF SERVICE

Since it is a computer program, an automated online assistant never has a bad day, never grows tired, and never becomes distracted. It is never rude and it never goes off-script. It always provides the same quality customer service.

Because it never becomes ill or misses work, it is the most reliable customer service employee in existence.

5. BUILDS TRUST WITH CUSTOMERS

Unlike a search engine, an automated online assistant simulates social interaction by talking with the customer. Even though everyone understands that automated online assistants are not real people, we tend to interact with them as though they were (Reeves, n.d.).

The social interaction between the customer and the automated online assistant creates a sense of trust in the customer. Research shows that people are more likely to trust information provided by an automated online assistant than the same information displayed on a static webpage (Reeves, n.d.).

Furthermore, customers feel more comfortable completing tasks, such as going through a checkout process, if an automated online assistant is present because it offers guidance and provides opportunities to ask questions (Reeves, n.d.).

When most people need help, they don't read a manual. They ask someone. An automated online assistant takes advantage of this approach (Reeves, n.d.) while being cheaper and more reliable than a real person.

THE FUTURE OF CUSTOMER SERVICE

Automated online assistants provide many of the same services as a human customer service representative, but with superior efficiency, greater availability, and better reliability. In doing so, they reduce the number of calls to your call centre. They can serve thousands of customers at once, making them cost-effective. Because they simulate social interactions, they help build trust with customers.

Numerous firms create personalized automated online assistants for companies. One of the largest firms is [Creative Virtual](http://creativevirtual.com) (<http://creativevirtual.com>) with offices around the world.

Automated online assistants can't completely replace humans yet, but they continue to improve with advances in AI. As research continues, automated online assistants will become more realistic and better at recognizing and responding to human language. One day, AI programs will provide the majority of online and over-the-phone customer service.

WORKS CITED

Barzilay, R.; McCullough, D.; Rambow, O.; DeCristofaroz, J.; Korelsky, T.; Lavoie, B. (n.d.). *A New Approach to Expert System Explanations*. Retrieved from <http://www.cogentex.com/papers/explanation-iwnlg98.pdf>

Cody, J. (2011). *The Virtual Agent's Advantage over Human Nature*. Retrieved from <http://info.creativevirtual.com/blog/bid/95704/The-Virtual-Agent-s-Advantage-over-Human-Nature>

Cody, J. (2012). *Intelligent Virtual Agents Drive Telecommunications Support*. Retrieved from <http://info.creativevirtual.com/blog/bid/126836/Intelligent-Virtual-Agents-Drive-Telecommunications-Support>

O'Donnell, A. (2011). *Can You Achieve Better Sales and Service Through Animated Characters?* Retrieved from <http://www.insurancetech.com/business-intelligence/can-you-achieve-better-sales-and-service/231903389>

Reeves, B. (n.d.). *The Benefits of Interactive Online Characters*. Retrieved from http://noahx.com/resources/CSLI_Stanford_Study.pdf

Russell, Stuart J.; Norvig, Peter (2003), *Artificial Intelligence: A Modern Approach*, Upper Saddle River, New Jersey: Prentice Hall.