CHAT2LEARN
Chatbot technologies for digital entrepreneurship education and adult learners

Project n. 2020-1-CY01-KA204-065974

IO1: Developing a chatbot learning environment in the field of digital entrepreneurship

1.1.   Collecting best practices and tools on Technology Enhanced Learning and creation of a resource library on topic

PREPARED BY

ASSET BASILICATA

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Good practices template

Good practice definition

A "**good practice**" can be defined as follows:

A good practice is not only a practice that is good, but a practice that has been proven to work well and produce good results, and is therefore recommended as a model. It is a successful experience, which has been tested and validated, in a broad sense, which has been repeated and deserves to be shared so that a greater number of people can adopt it

Good practice criteria

The following set of criteria will help us to understand whether a practice is a "good practice":

- **Effective and successful:**

  A "good practice" has proven its strategic relevance as the most effective way in achieving a specific objective; it has been successfully adopted and has a positive impact on individuals and/or communities

- **Technically feasible:**

  Technical feasibility is the basis of a "good practice". It is easy to learn and to implement

- **Replicable and adaptable:**

  A "good practice" should have the potential for replication and should therefore be adaptable to similar objectives in varying situations

- **Environmentally, economically and socially sustainable:**

A "good practice" meets current needs without compromising the environment and/or the social cohesion of the territories

Title
Chatbot Billie

Date/Period	**Authors**
Currently Available, launched initially at the end of 2008	*Bol.com*

Partner
Lidi Smart Solutions, The Netherlands

Element	*Guiding question*
Type of practice	*Chatbots as a solution for customer service* *Billie is a chatbot, a virtual assistant and a customer service tool for a web shop in the Netherlands, named Bol.com, who focuses on providing customer service by answering customer's questions, resolving issues with products and searching for solutions related to a web-user's search.*
Publisher (optional)	*Desktop research through the use of newspapers, articles and various websites related to e-commerce and customer service.*
Target audience	*The target audience for the chatbot Billie are the customers of the website https://www.bol.com/nl/.* *The concept of Billie can be used for organizations that provide services or sell products. They can be located in any industry. It offers solutions for any businesses' customer service department.*
Objective/Aim	*Billie is a chatbot which is able to answer almost all customer inquiries and questions and has proven to be able to take care of around 70% of them without involving an employee. This has enabled customer service employees to focus on more complex matters. As technology behind the chatbot Billie also evolves and becomes smarter with time, Billie now learns from chunks of forty to fifty thousand conversations that customers*

can talk about and how to respond. The company is now able to:

- *Enable customers to receive a response faster, even outside opening hours*
- *Enable the customer success team work more efficiently*
- *Collect more leads related to sales*

Billie speeds up the process for customers when looking for a specific product and directs them to the product they were looking for as soon as possible. The chatbot also has access to external systems such as the software in which bol.com keeps track of the stock and in which the customer's order information can be found. This way he can also answer specific questions about orders too.

Billie has proven to be one of the best examples of chatbots at the moment. A few more of the benefits of having Billie are also the following:

- *Automation of decisions or policies*
- *Task automation*
- *Process automation*
- *Automation of labour*

Location/Geographical coverage	*Located in The Netherlands, Shipping Internationally.* *Billy is only available in Dutch language.*
Description	*Customers are busy. Nowadays they have less and less patience and time and expect a smooth customer experience. An online store wants people to find the product they came for. As quickly as possible. Billie speeds up this process and directs you to the product you were looking for directly. Billie provides specific information, such as the status of a shipment, or process a return. The company aims to improve demand recognition, skip conversation steps and make the management of conversation flows more scalable.* *Demand recognition is the understanding what the customer is talking about, which is one of the key success factors in a chatbot. User research by the owner of Billie shows that about a fifth of the company's customers even explicitly prefer the virtual assistant to solve their service question – over face-to-face contact.*

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	Additionally, the personality of the chatbot has not yet been mastered. There is basic recognition of swear words and misunderstanding in Billie, however the company believes that through sentiment analysis they should be better able to either transfer dissatisfied customers faster to an employee or make the bot itself respond more empathically.
	Bol.com was the first Dutch retailer to take a chatbot seriously.
Methodological approach	*Bol.com believes in the power of people and technology and has continuously been investing in the improvement of their chatbot - Billie.*
	To develop a chatbot such as Billie, a clear idea of who the organization and its brand identity is, is important. The bot must, fully fit into company policy and the tasks that they are required to do need to fit into the target audience. Billie has done this greatly. Billie speaks the language, with the tone of voice that is required by the company's target audience. The way how the bot approaches the user, it transfers the personality of the bot to the customer. The user persona and the chatbot persona are designed to be very similar.
	The approach used to solve customer inquiries is the following:
	● The customer provides the content of their question or inquiry
	● Billie provides the solution and where not possible redirects to an employee
	The company has ensured a good learning loop. Especially in the beginning there was a lot that the bot did not understand. It was crucial to continuously analyse and improve the understanding of Billie. The company involved many employees and developers in the development phase. The virtual assistant is as good as the data they put into it: the more conversations, the more the bot learns, the better it does. This is due to its nature, being built upon Artificial Intelligence. Chatbots based on Artificial Intelligence are able to process natural language. This is done with the help of Natural Language Understanding (NLU).
	The threshold to contact a bot is low, for example when answering frequently asked (standard) questions. It

	sometimes turns out to be difficult for customers to find an answer to their question, so Billie offers a solution. 50% work is in the interface. Even more work is in question recognition. *The integration of Billie has been very long, as the company has been improving their chatbot since 2008 and are still in process.*
Finance	*The company, Bol.com, who owns Billie is the organisation which invests in the development of the chatbot.* *The chatbot is growing one and a half times as fast as the company's turnover.*
Constraints (optional)	*High-quality and clean data have a major influence on the degree of success in a chatbot. Bol.com shares that in the past 12 years, to improve Billie, there has been a lot of manual work. Also, Billie is unique, because of the extent to which Billy is integrated into the bol.com backend, which is a difficult and very technological process to integrate for many institutions.* *It is also important that although Billie continues to improve, a clear distinction between a virtual assistant and an employee is made.* *Some customers are not fully happy with Billie, they want to be given the choice of whom they would like to interact with, a human or a chatbot.*
Outcomes	*Billie is available through the website of the company:* https://www.bol.com/nl/klantenservice/stel-je-vraag.html *and the services related to this chatbot can be found via this link:* https://www.bol.com/nl/klantenservice/index.html
Replicability and/or up-scaling	*There are great possibilities for up-scaling and integrating chatbots in customer service practices, especially in a current environment of a boom of eCommerce websites and businesses. When discussing the market in the Netherlands, it can be concluded that the main characteristic that will not make it easily transferable internationally, would be the language. It can be assessed at a level of 4.*
Conclusion (optional)	*Such was not shared*
Opinion (optional)	*Express your opinion on a scale from 1 (=min) to 5 (=max) about:*

	- ***Usability - 5*** *– The service is highly used in the Netherlands and is the first point of contact for the majority of the company's website users.* - ***Integration- 2-*** *Very difficult and time and resource consuming to create such a complex, customised chatbot. There is a lot of data required and experts to do so.*
Further considerations	*No further considerations.*