



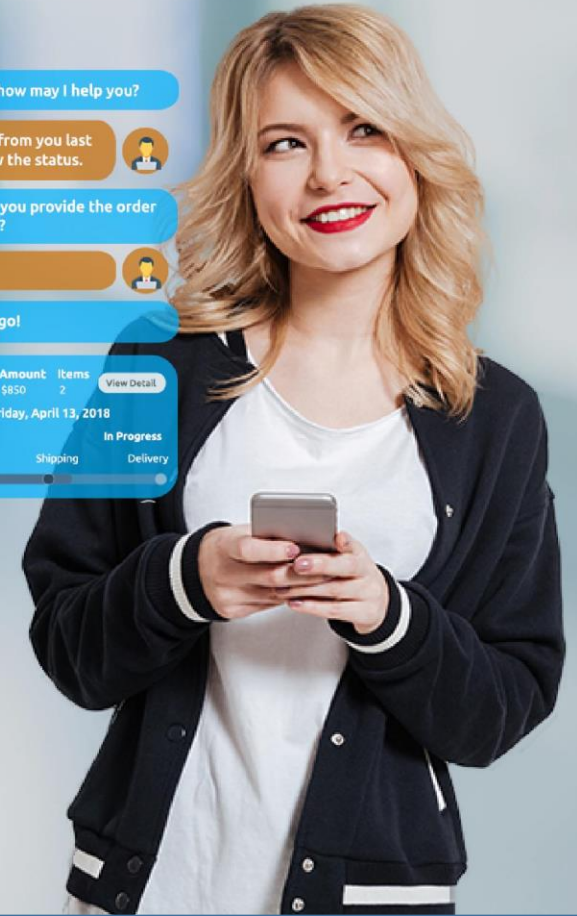
# Don't Just Build A Chatbot. Create A Conversational Strategy



20 Dec 2018



11 AM - 12 PM CST



PRESENTED BY  
Travis McCallum & Gopinath Jayamalrao

# IMPIGER SNAPSHOT

What we are today

225+ Clients

15 Years Old

350+ Workforce

500+ Apps

50+ Chatbots

5 Locations

Mobile, Web & Cloud

RPA & AI

ITIS & IoT

# SPEAKERS



**Travis McCallum**  
*Chatbot Solution Consultant*



**Gopinath Jayamalrao**  
*Chief Product Officer*

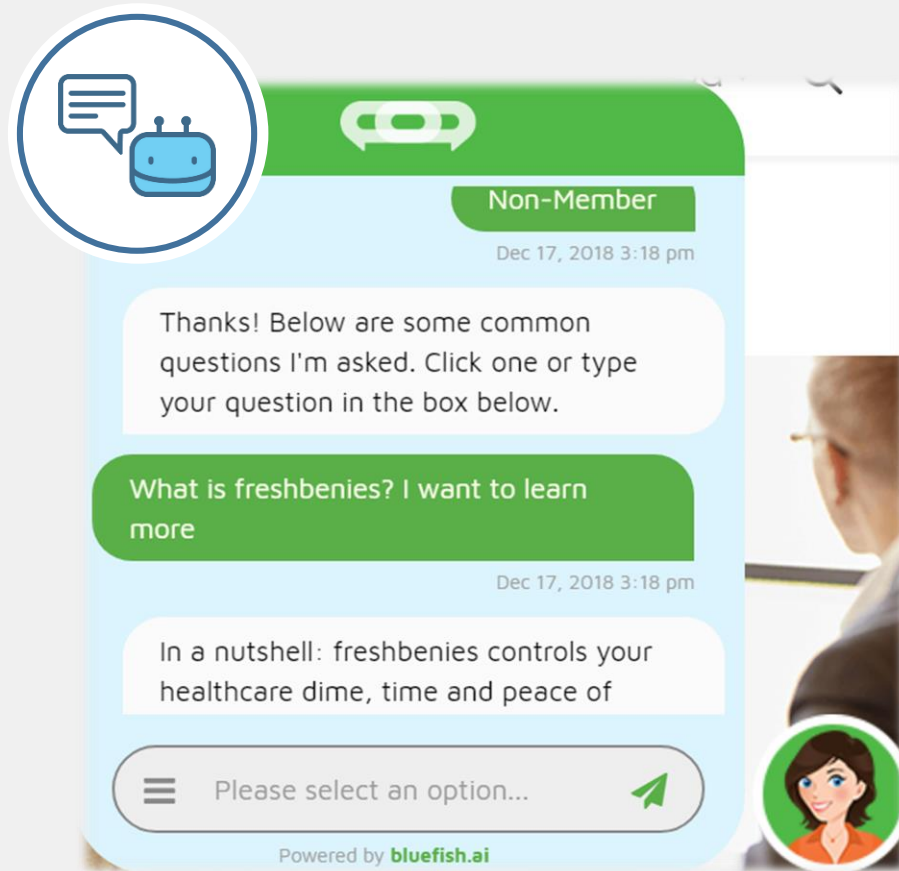
# AGENDA

- Copy Etiquette
- NLP





# WHAT IS A CHATBOT?

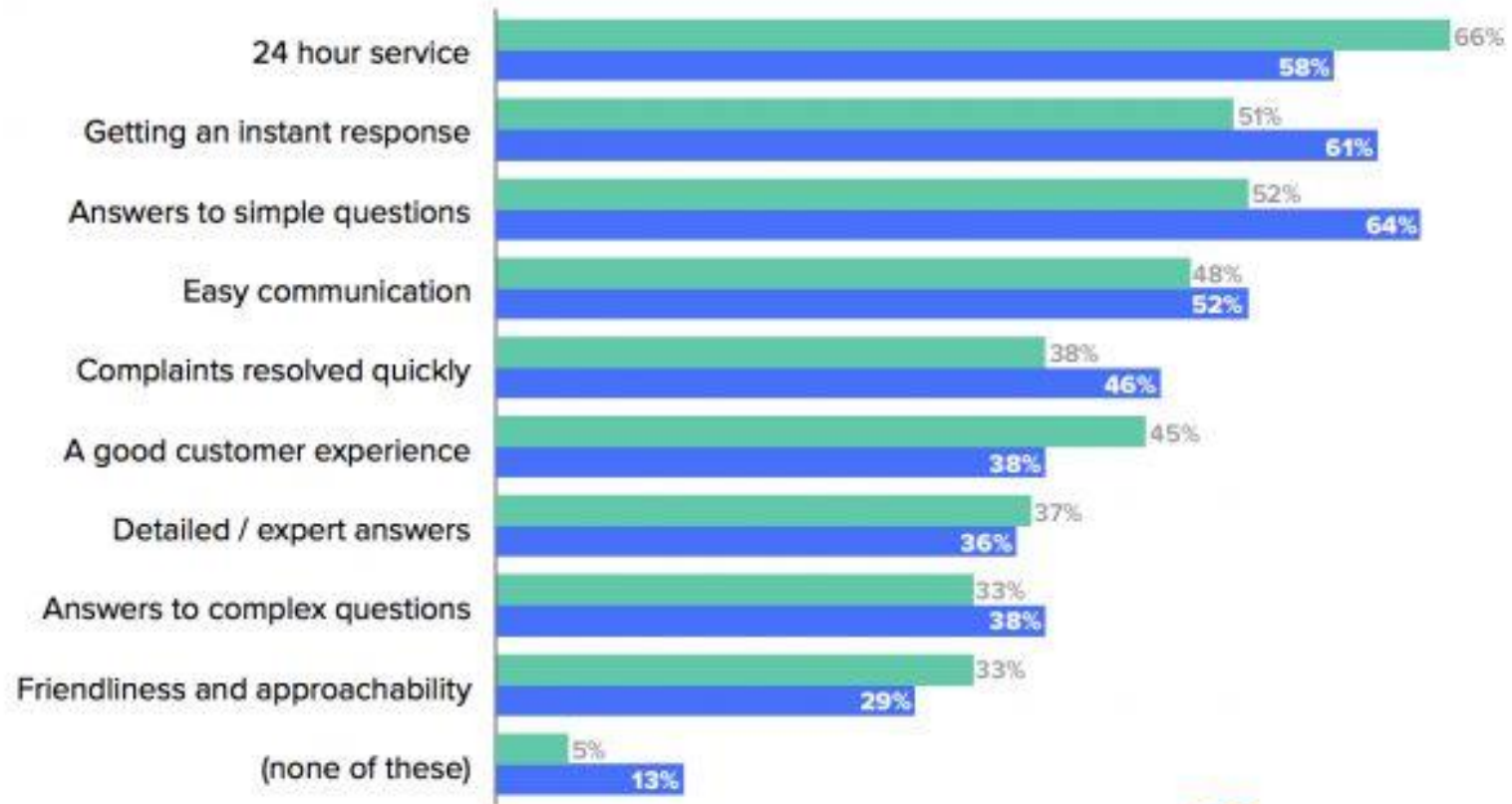


- *Virtual Assistant*
- *Conversational Agents*
- *Automated Messengers*

# Potential Benefits of Chatbots

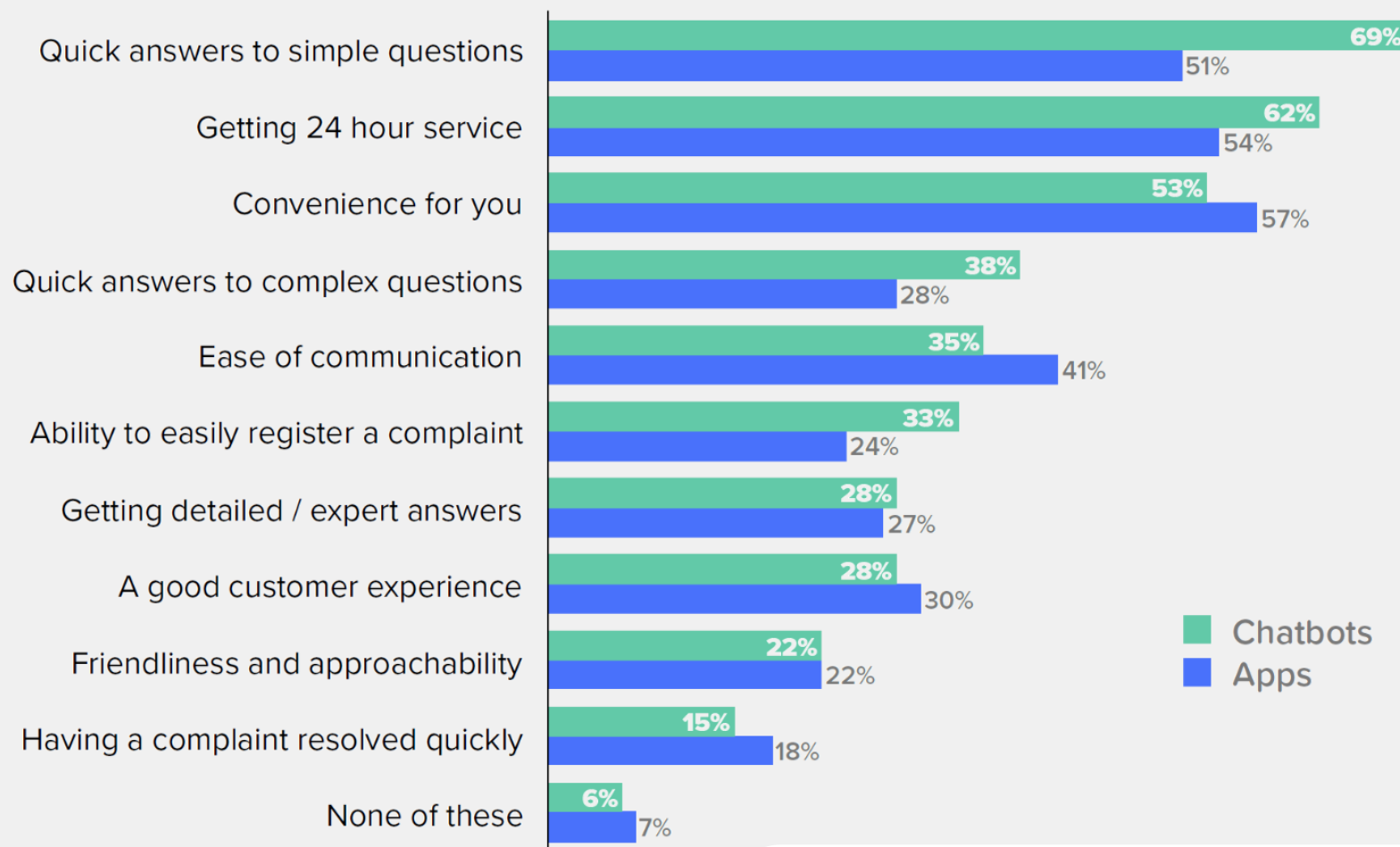
*Millennials vs. Baby Boomers*

■ Millennials  
■ Baby Boomers



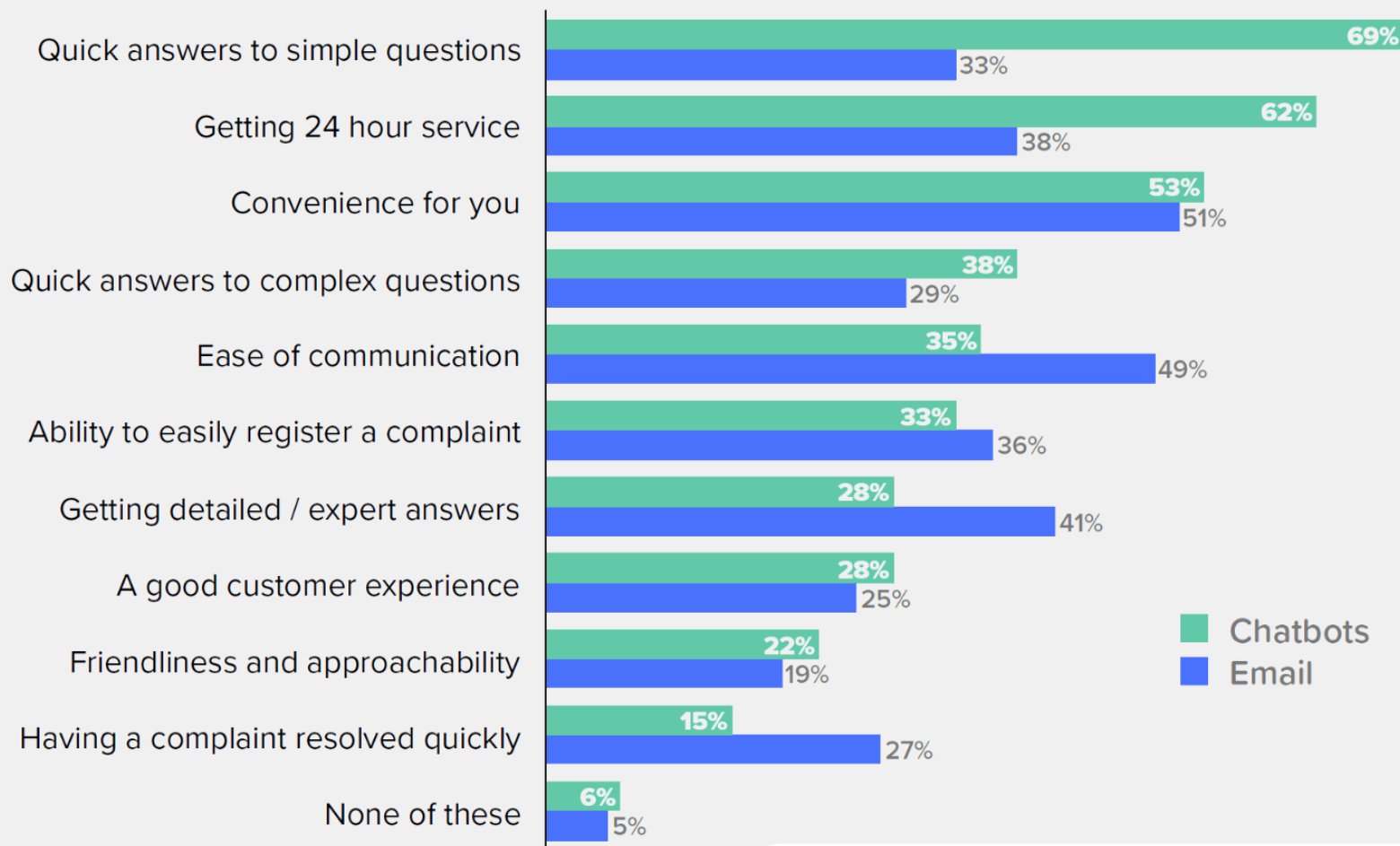
# Chatbots vs. Apps

*Which of these benefits do you most associate with communicating with businesses?*



# Chatbots vs. Email

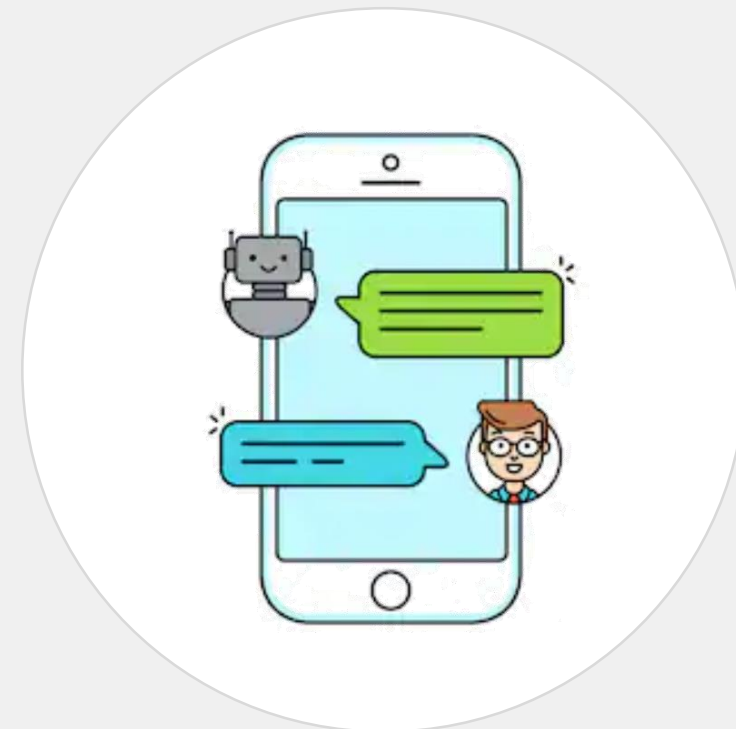
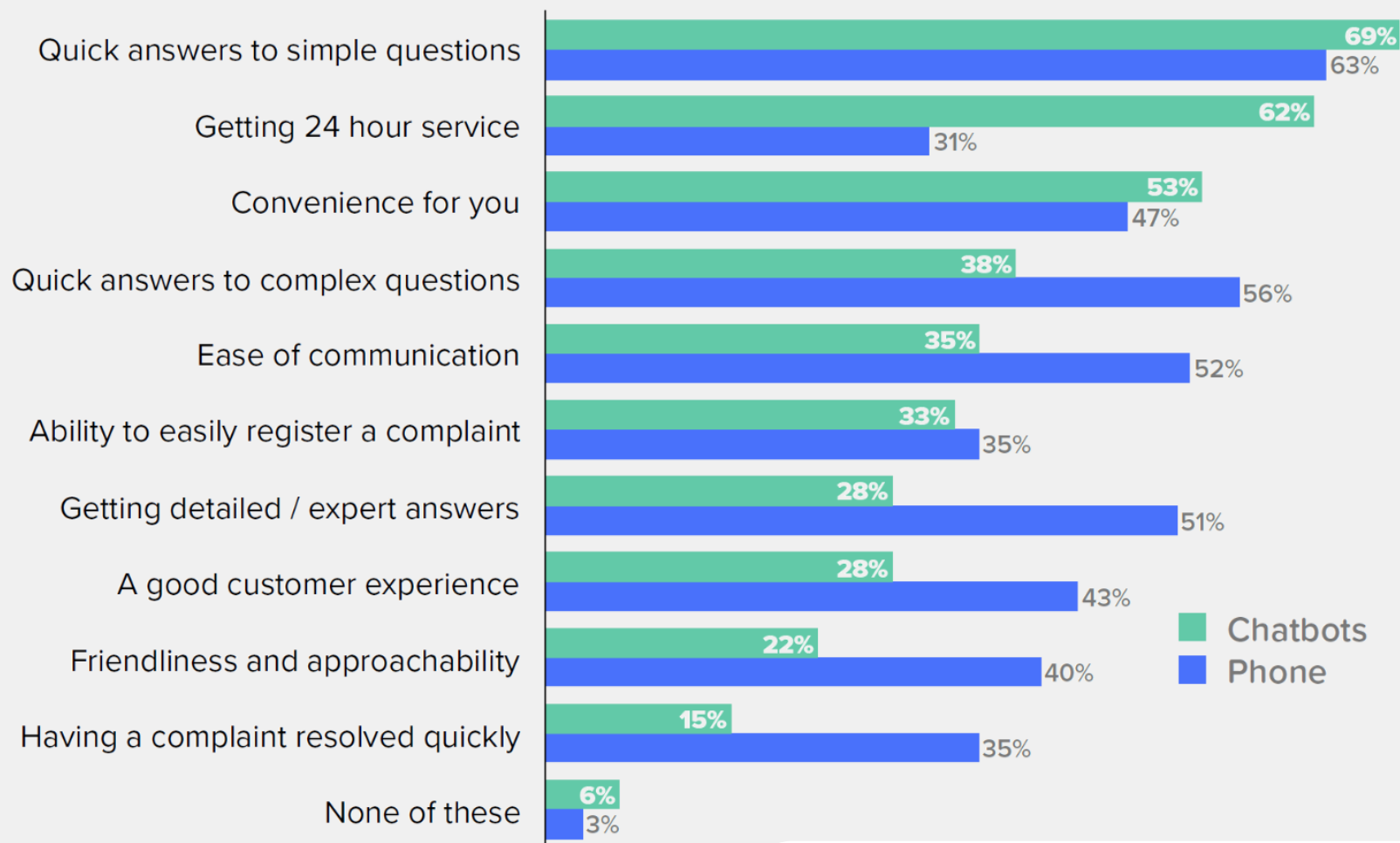
*Which of these benefits do you most associate with communicating with businesses?*





# Chatbots vs. Phone

*Which of these benefits do you most associate with communicating with businesses?*



# THE EVOLUTION

*Chatbots are like apps that users interact with in a conversational way, through text or speech. As technology advances, Chatbots are able to better understand both written and spoken text.*



## Scripted Chatbots

- Basic and scripted
- Looks for key phrases & give pre-defined responses



## Intent Recognizers

- Machine learning capabilities
- Greatly improved understanding of user intent, relationships between words are taken into account to extract meaning from a request



## Virtual Agents

- Able to understand what a human is trying to achieve and can hold an end-to-end conversation
- Connects to other systems to leverage user data and insights
- Learns and improves over time

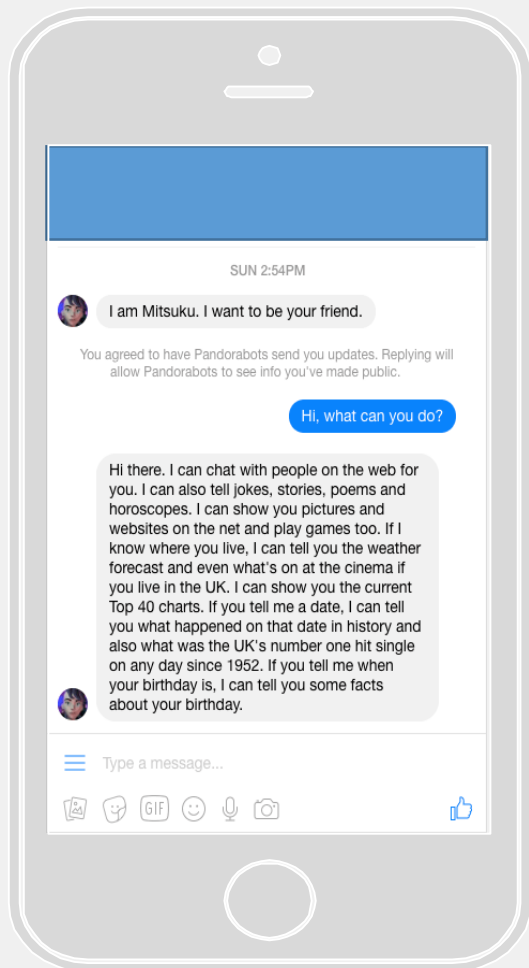


## Human-like Advisor

- General AI, also known as human-level AI or strong AI
- The type of Artificial Intelligence that can understand and reason its environment as a human would



# WHY CHATBOTS FAIL



Despite the best of intentions, sometimes chatbots fail to deliver positive user experiences.

Poor interactions result in dissatisfied customers.

# CHATBOT COPY MATTERS

Create brand-relevant story...

**YOUR BOT PERSONA = YOUR BRAND**

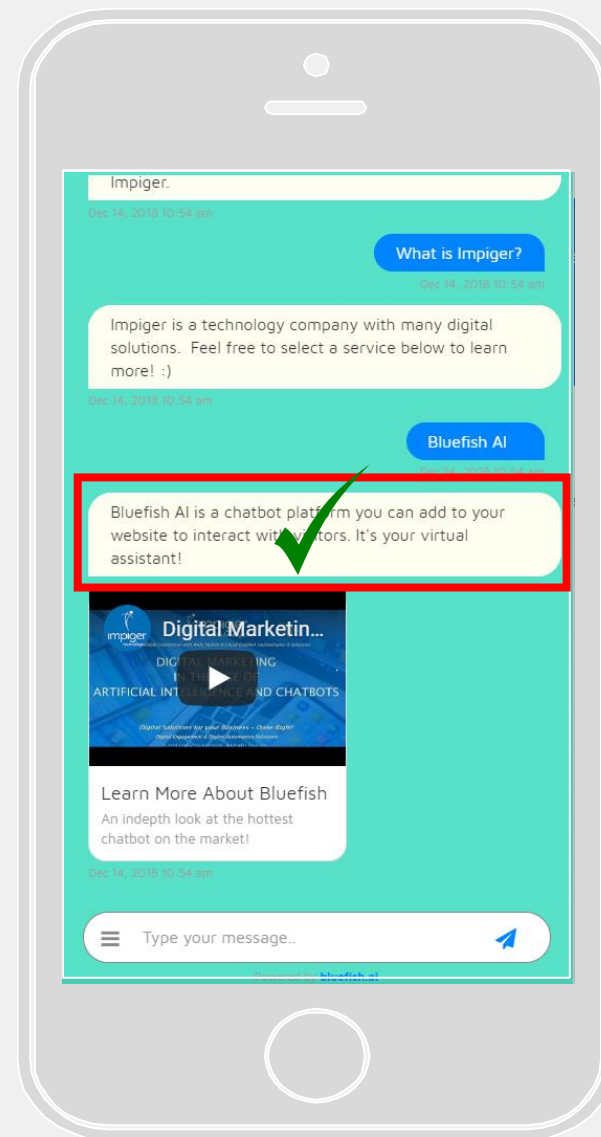
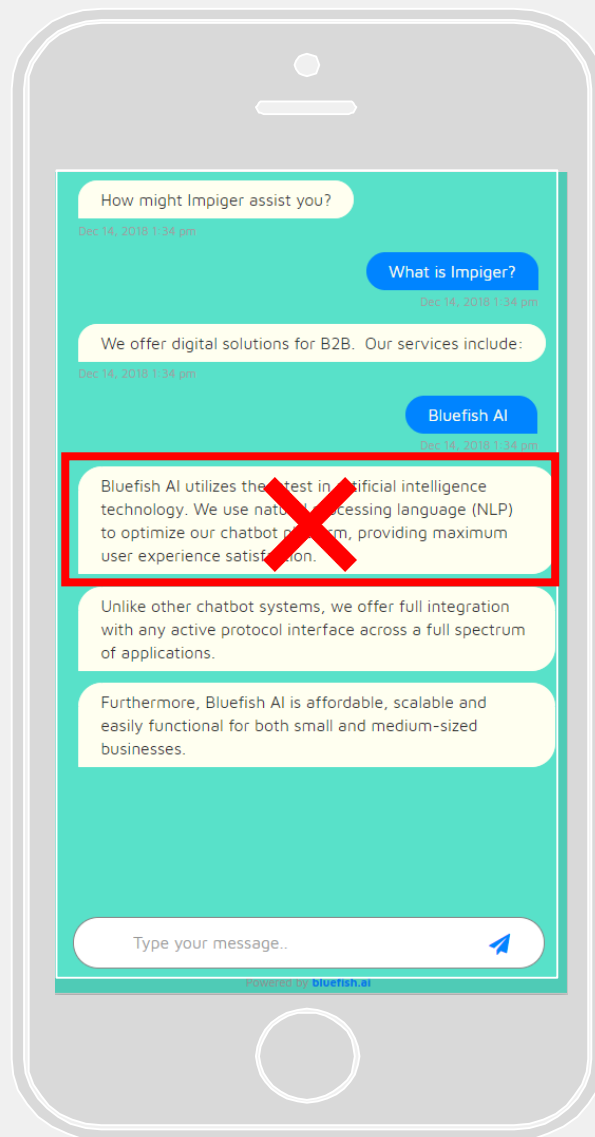


# COPY ETIQUETTE

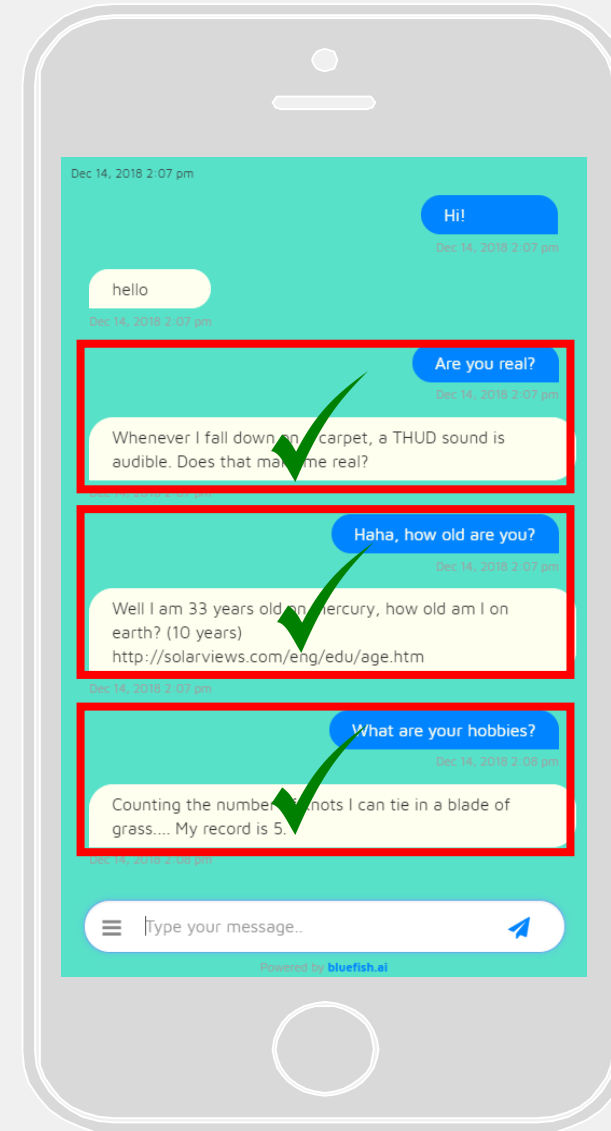
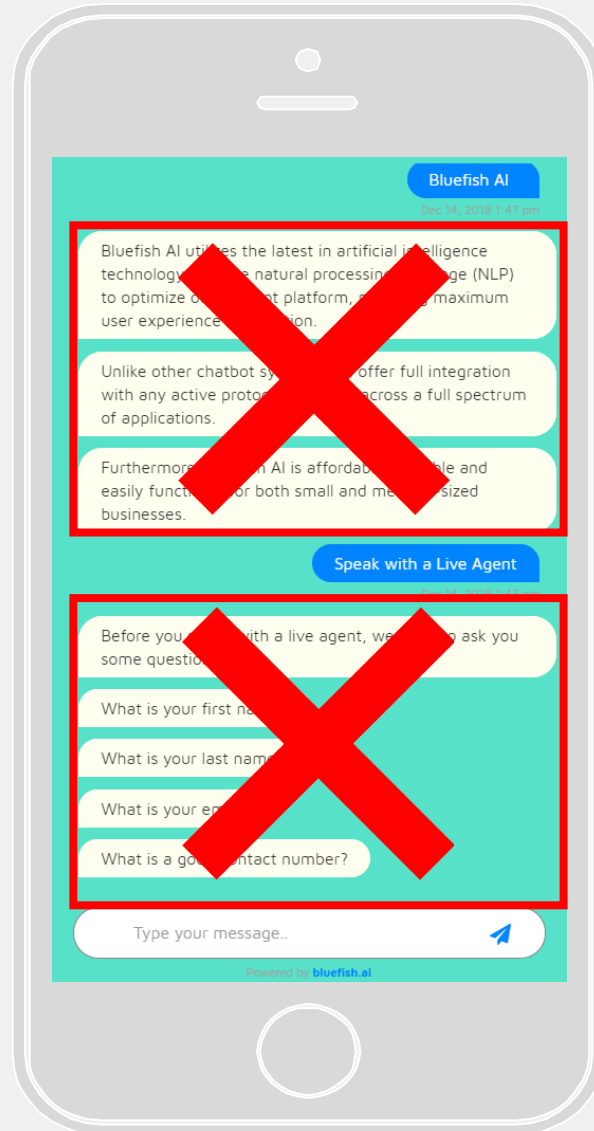




# KEEP BOT COPY SIMPLE AND CASUAL



# CONVERSATION FLOW SHOULD BE 1:1



# CONNECT, EMPATHIZE, ENGAGE

Answers

- Greetings! x
- Welcome! x
- Saluations! x
- Good to see you! x
- Hi, how may I help you? x

Type your Answers

**Chatbot**  
Hello, how are you doing?

Dec 19, 2018 12:42 pm

What do you think of chatbots?

Dec 19, 2018 12:42 pm

Chatbots are great.

Dec 19, 2018 12:42 pm

What do you think of {x} product?

Dec 19, 2018 12:42 pm

{X} product is great.

Dec 19, 2018 12:42 pm

I just got a promotion!

Dec 19, 2018 12:46 pm

Woohoo! That's great. Happy for you :)

Dec 19, 2018 12:46 pm

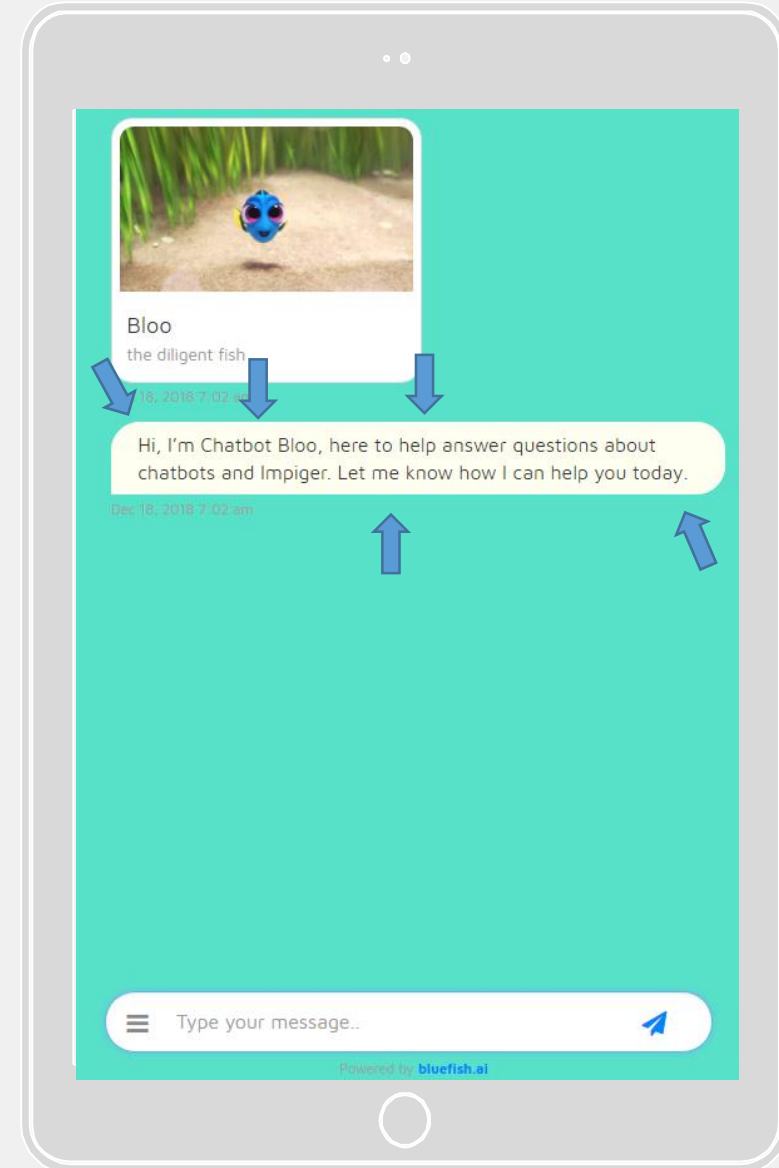
My day isn't going so well.

Dec 19, 2018 12:46 pm

Aww... I'm sorry to hear that. Feel better!

Dec 19, 2018 12:46 pm

# STARTING A CHATBOT CONVERSATION



# RECOGNIZE RETURNING USERS

**Bad**

Tap a task from below  
to proceed

10:32 am

Read News

Read Story

**Good**

👋 Hey Vaibhav, Good  
Morning...

Here are some tasks to  
start your day with.

10:32 am

Read News

Read Story



# KEEP YOUR USERS UP-TO-DATE

**Bad**

Which is the best cafe  
in Dallas?

10:32 am

Let me find it. Give me  
2-3 minutes 🕒

10:32 am

**Good**

Which is the best cafe  
in Dallas?

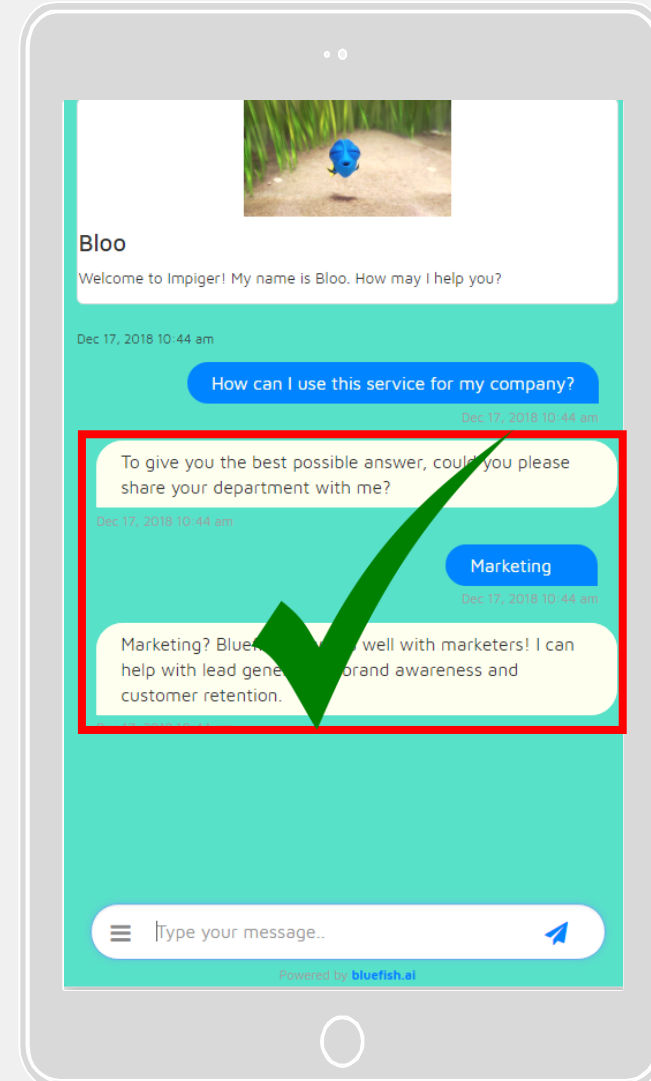
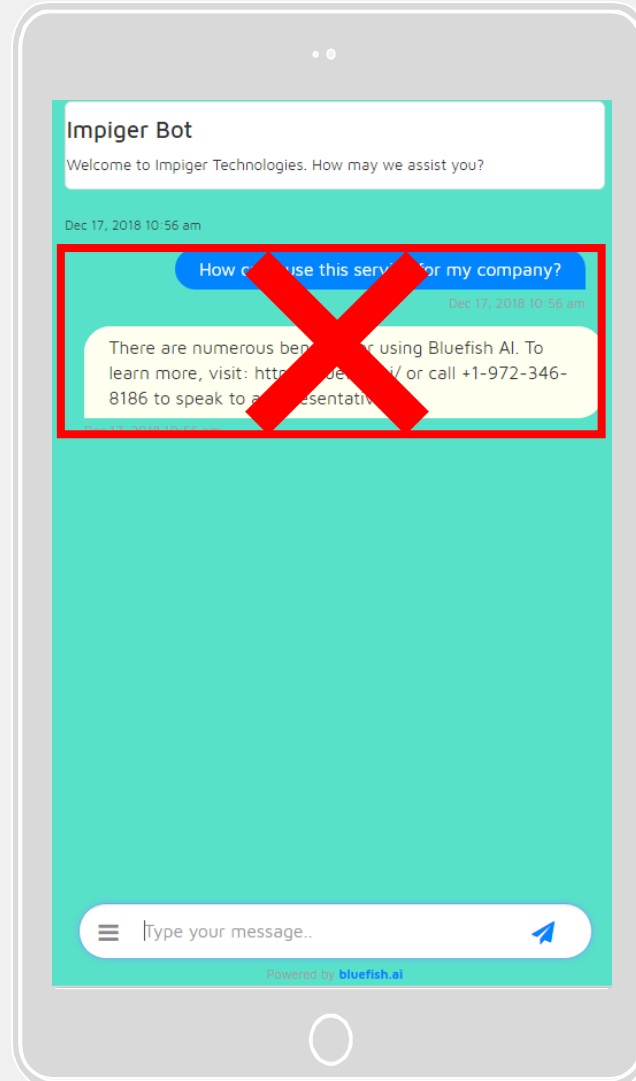
10:32 am

Sure!  
Searching for it now 🔍

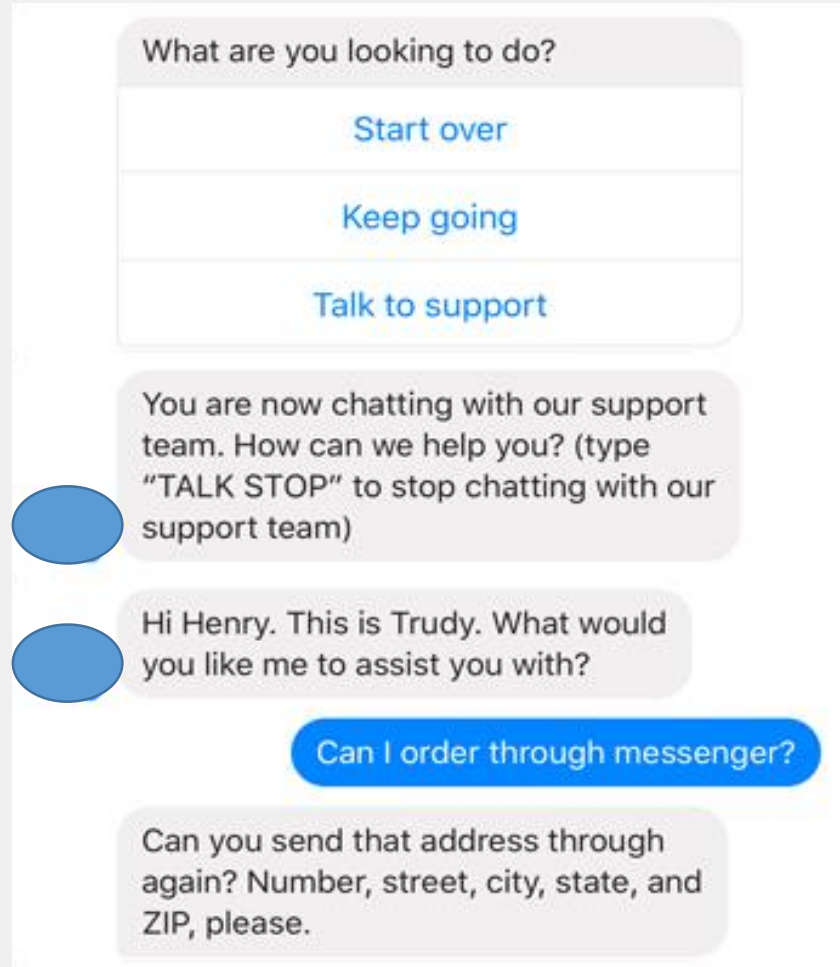
In the mean time, here's  
a fact about coffee ☕

10:32 am

# ASK FOR MORE INFORMATION



# EASE OF ACCESS



What are you looking to do?

- Start over
- Keep going
- Talk to support

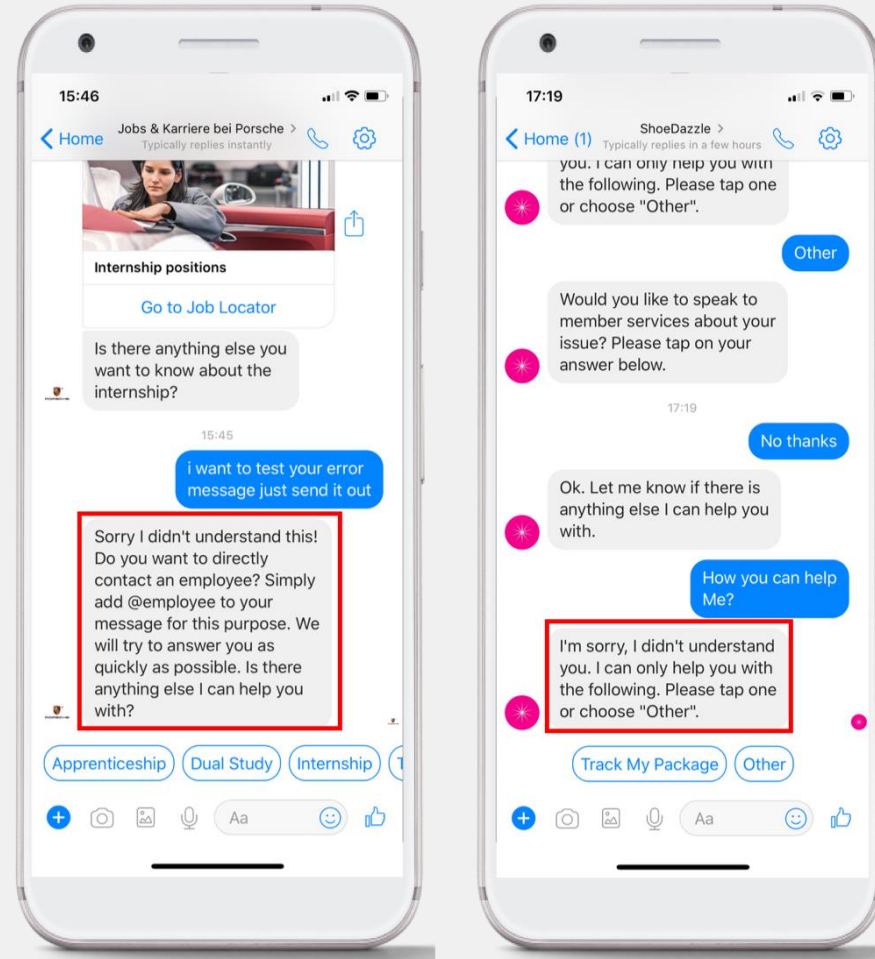
You are now chatting with our support team. How can we help you? (type "TALK STOP" to stop chatting with our support team)

Hi Henry. This is Trudy. What would you like me to assist you with?

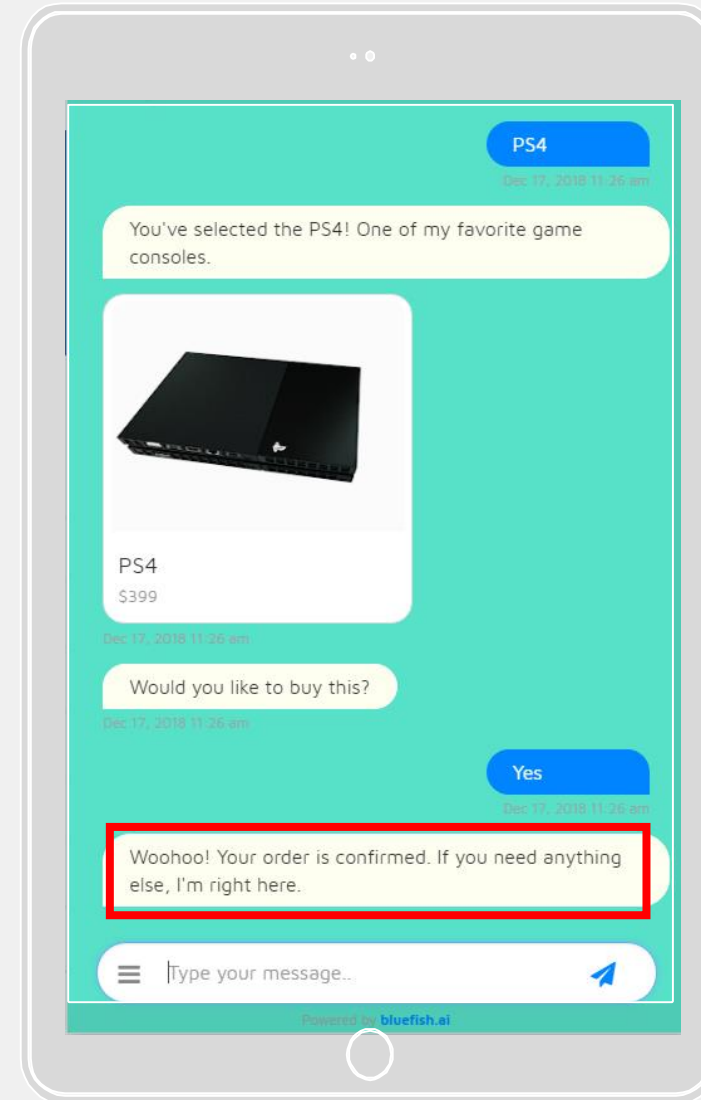
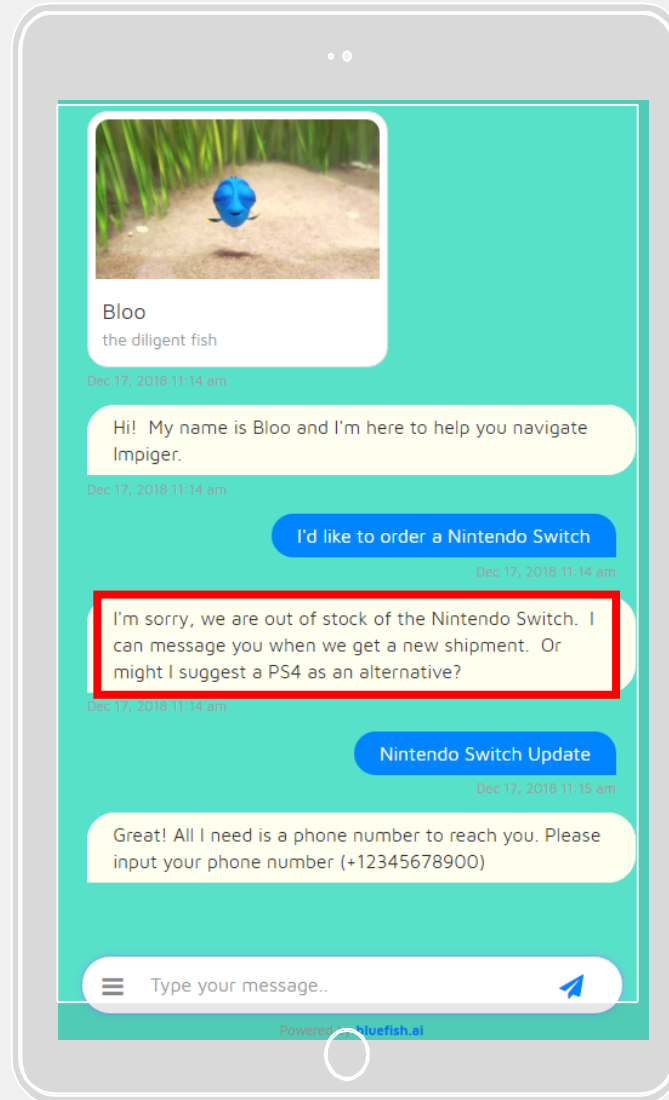
Can I order through messenger?

Can you send that address through again? Number, street, city, state, and ZIP, please.

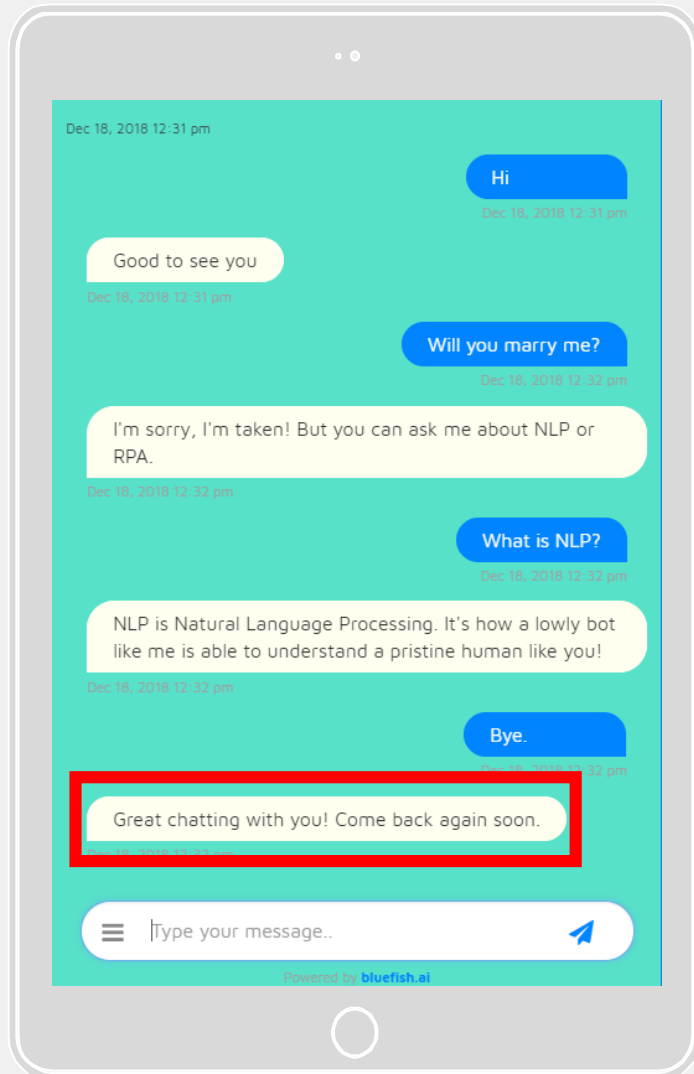
# ADMIT DEFEAT HUMBLY



# UNRESOLVED & RESOLVED RESPONSES

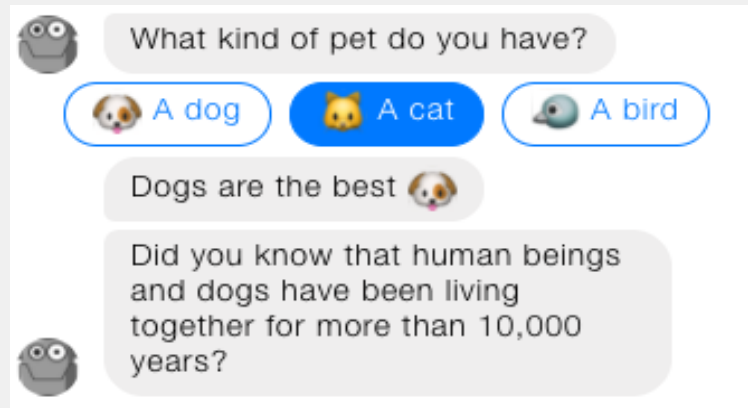




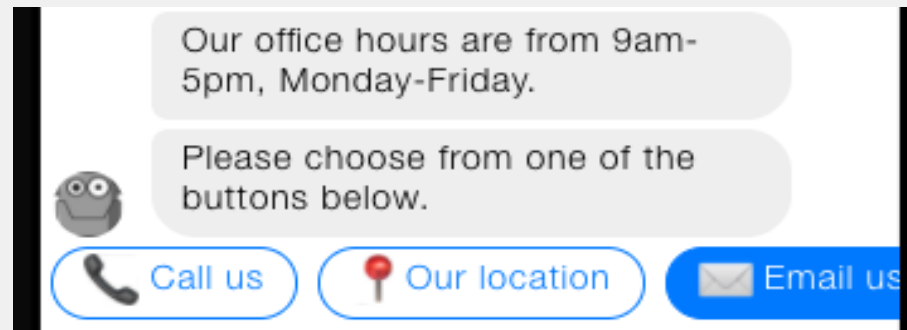


# CLOSING THE CONVERSATION

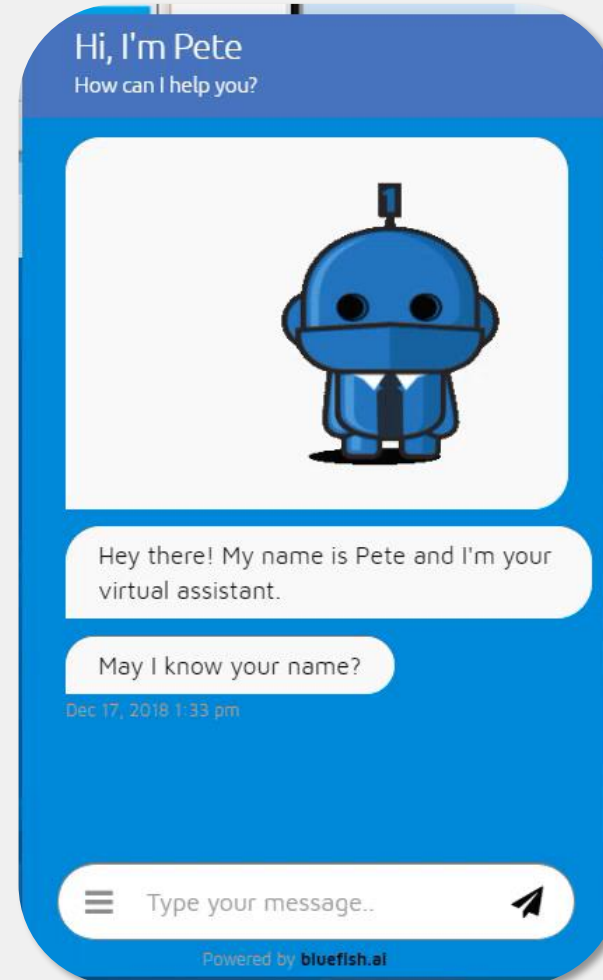
# USING EMOJIS IN CHAT – GOOD OR BAD?

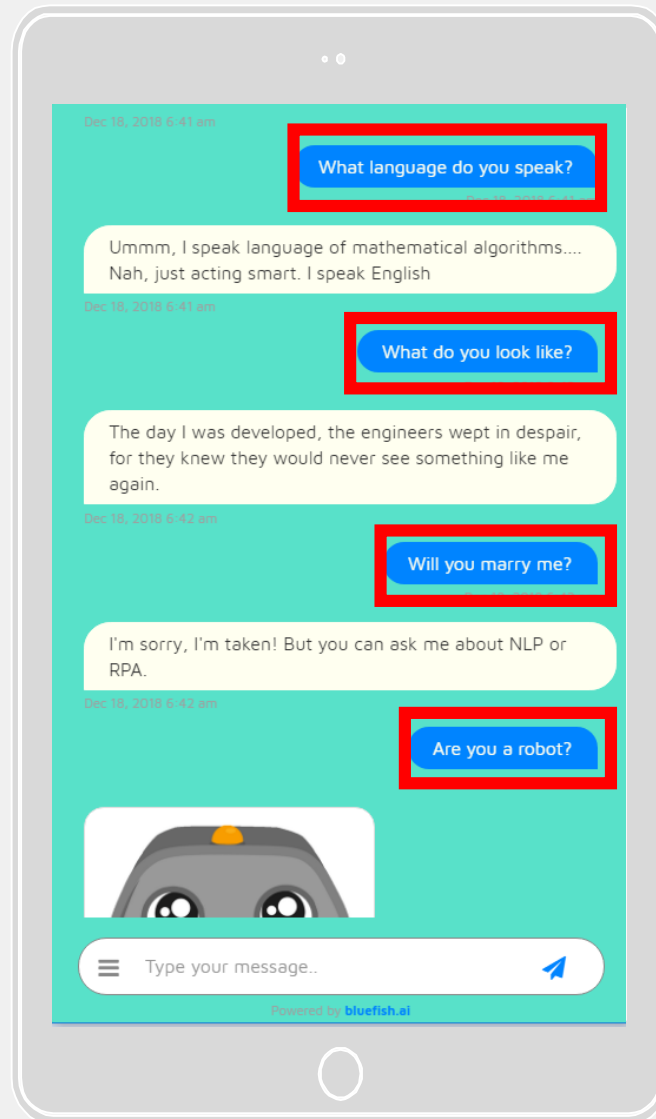


VS.



# GIFs





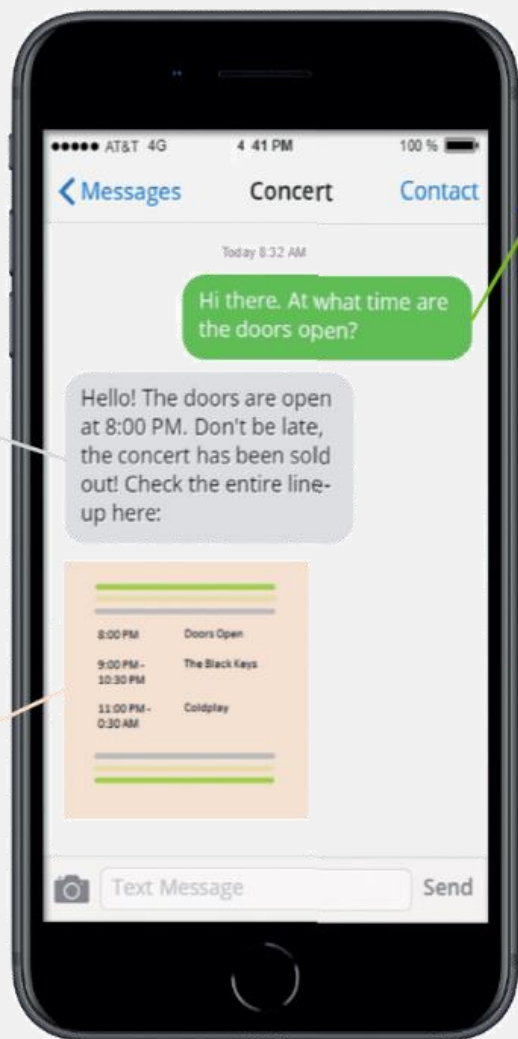
# Unexpected Questions

# NATURAL LANGUAGE PROCESSING (NLP)





# CHATBOTS CAN LEARN

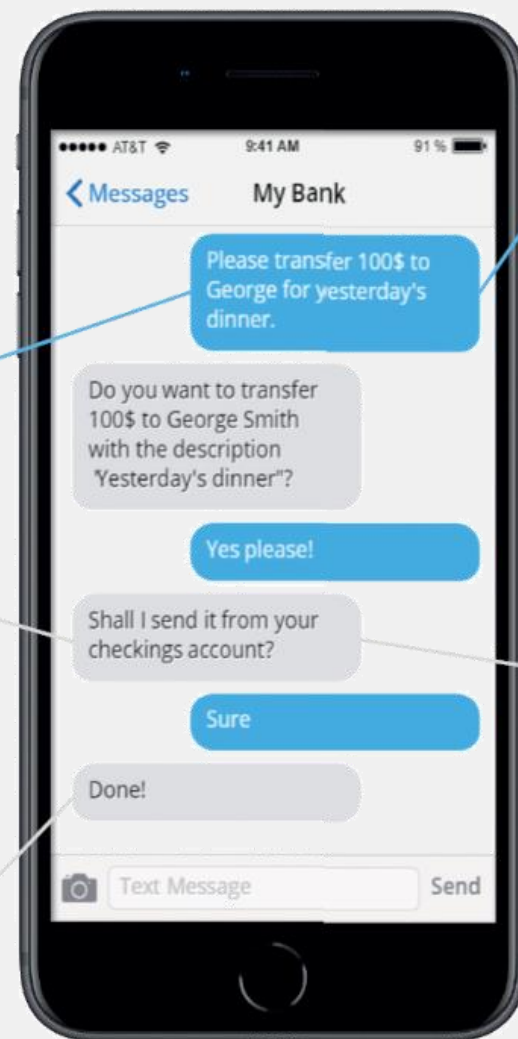


The user's intent is recognized.

The entities 'amount', 'recipient' and 'description' are recognized.

The chatbot asks for confirmation based upon the recognized entities.

The chatbot transfers money from the user's checking account using the integrated back-end systems.



The user's intent is recognized.

The Virtual Agent knows which accounts exist and asks the user from which account the money should be transferred.

In a FAQ knowledge base, the question is linked to a standardized answer.

The chatbot provides extra information to improve the customer experience.

# WHAT GOES ON INSIDE A CHATBOTS HEAD?

## Deep Learning

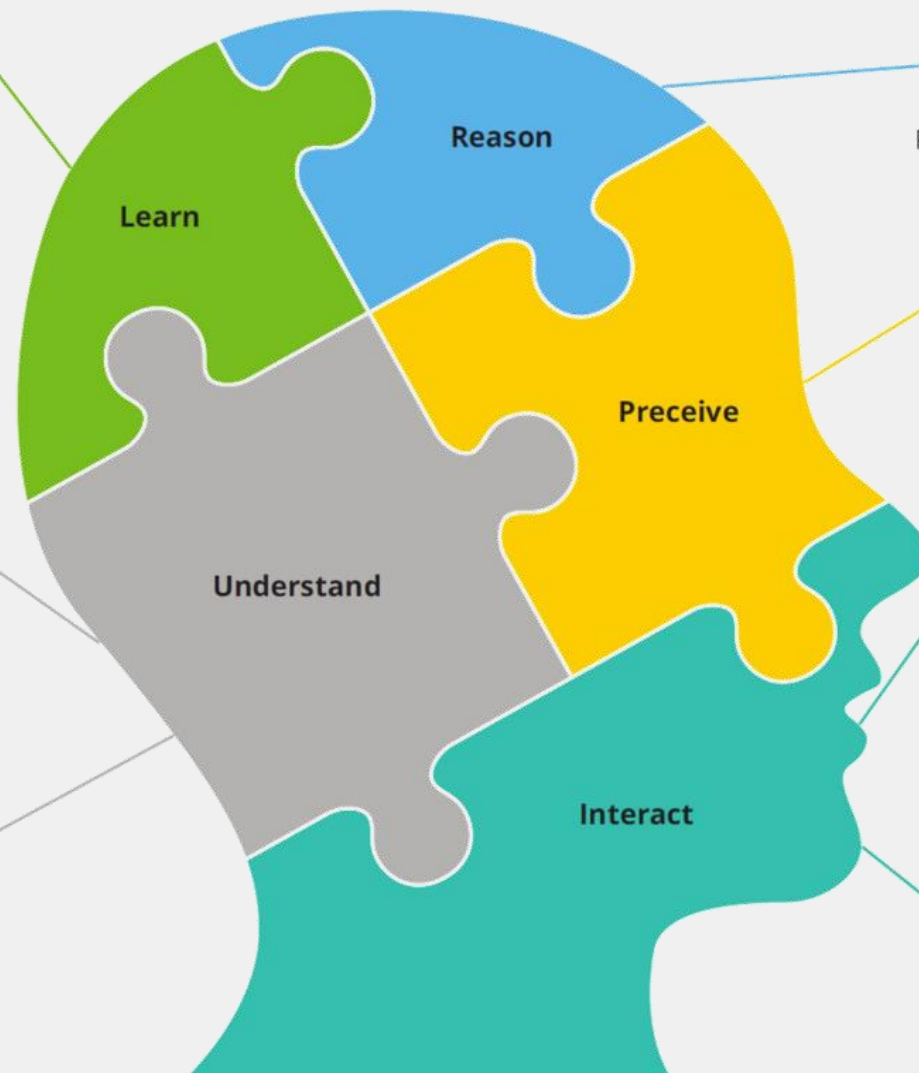
Ability to accept user "corrections" over time to improve suitability of responses. Allows the Chatbot to improve and learn off of user inputs.

## Machine Learning

Learn how to respond to the user by analyzing human agent responses. Necessary for qualitative intent recognition.

## Intent Recognition

Ability to "guess" what the user is requesting, even if phrased unexpectedly. Necessary to enable natural conversation, reduce user frustration and enable the virtual agent to start a relevant dialog.



## Natural Language Processing

Ability to "read" or parse human language text. Pre-requisite for understanding natural sentence structures vs. simple keyword "triggers".

## Entity Recognition

Understand that some text refers to informative abstract categories (entities) such as "February 2" = Date. Necessary for more complex commands and analysis.

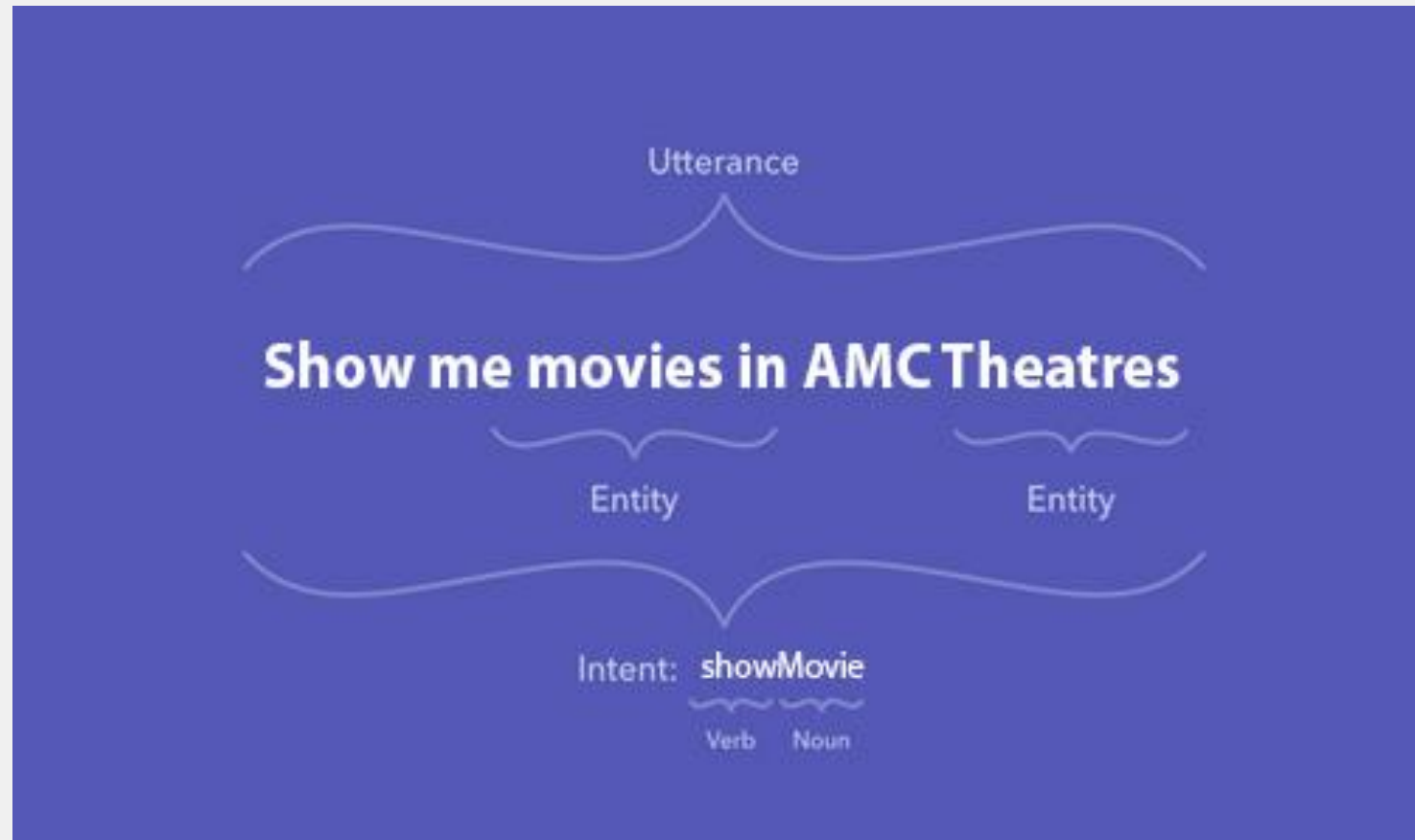
## Dialog Management

Ability to follow conversation history, recall and memorize over a single conversation, and across conversations. Necessary for natural, human-like back and forth conversation.

## Q&A Pairs / Scripts

Is used to deliver facts, details or solutions to queries or requests. Benefits greatly from good Intent Recognition.

# UNDERSTANDING INTENTS, UTTERANCES & ENTITIES



# UNDERSTANDING INTENTS, UTTERANCES & ENTITIES

## Utterance

Anything the user says. For example, if a user types “Show me movies in AMC Theatres”, the entire sentence is the utterance.



## Intent

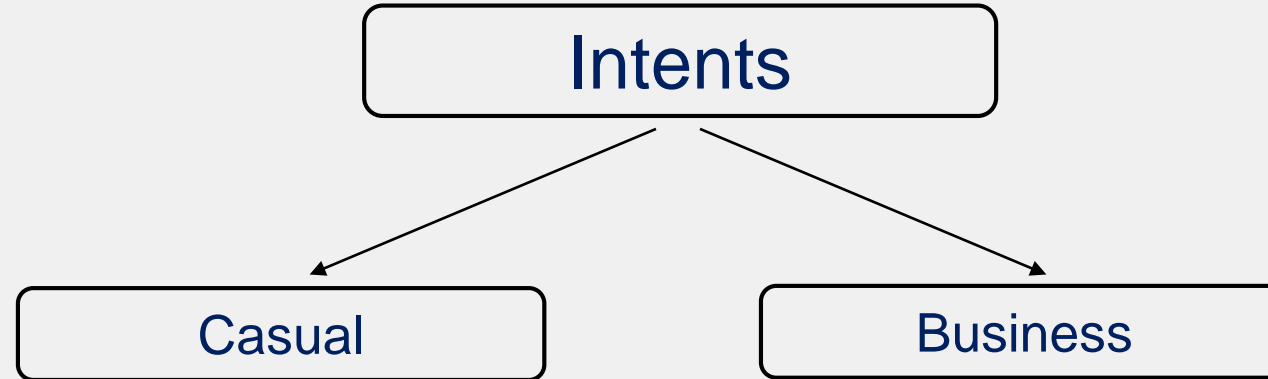
An intent is the user’s intention. Considering the above example, the user’s intent is to book a ticket. Intents are given a name, often a verb and a noun, such as “showMovie”.

## Entity

An entity modifies an intent. the entities are “theater”. Entities are given a name, such as “showType” and “showLocation”. Entities are sometimes referred to as slots.



# INTENT- USER'S INTENTION



- Small talk like **“Hi, Hello, Hola, Bye”** and **“How can I help you today?”**
- Comprises of affirmative and negative intents as well.

- Intents directly maps to business context  
For eg: **“When was Pulp Fiction released?”**
- If this intent is labelled, then **“GetReleaseYearByTitle”**

# ENTITES QUALIFY INTENT

- Entities are metadata about business intents
- Like tagging parts of speech (Noun, Verb, Adjective etc.,)
- Entities can be generic, composite or component
  
- In our example, “When was Pulp Fiction released”, entity is “Pulp Fiction” (Movie name)
- Intent is “GetReleaseYearByTitle” (Which is getting release year of movie Pulp Fiction)

*Rule for training any machine learning model is— You can never train it enough :)  
Get more data, train it more*

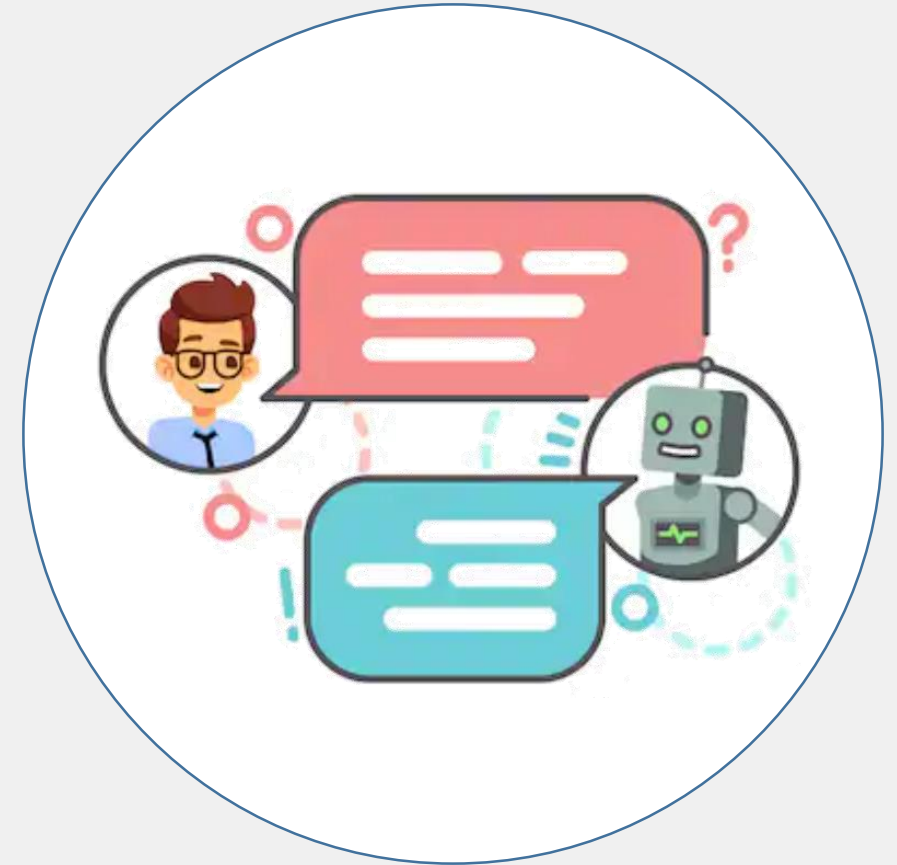


# UTTERANCES – ANYTHING A USER SAYS

- Utterances are common phrases typically associated with the intent
- Let's take an example for an Intent "GetReleaseYearByTitle"
- Training for this intent can have utterances like
  - *"What was the release year of movie Pulp fiction"*
  - *"In which year Pulp fiction was released"*
  - *"When did pulp fiction came"—Bad English I know :)*
  - *"When was Pulp fiction released"*
- Ideally one should attach minimum of 5 to 10 utterances for a given intent

# NLP IN SUMMARY

- Identify intents in advance
- Entities are powerful; they add context to the intent – a well designed bot should be able to extract user's intentions without unnecessary questions
- Train intents with actual chat transcripts (from your social handles) if not with manufactured utterances
- Train, converse, re-train your chatbot models



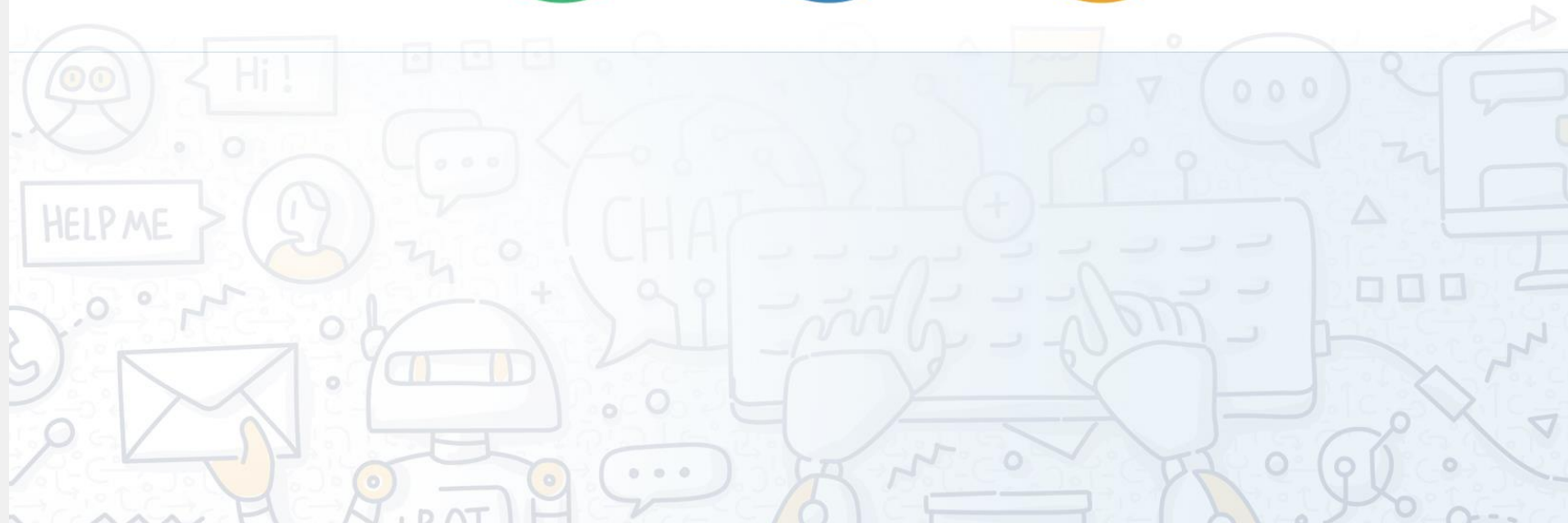
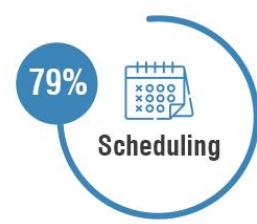
# SUMMARY

- Copy Etiquette
- Natural Language Processing (NLP)





## Digital assistants take over easy recurring tasks





## Business units benefiting from chatbots







## Industries benefiting from chatbots



There are more than  
**300,000 active chatbots**  
on Facebook's Messenger



Over **59%** of millennials and  
**60%** of Gen Xers in the  
U.S. have interacted  
with chatbots.



By **2020**, **85%** of our  
engagement with businesses  
will be done without interacting  
with another human.



Chatbots will lead to cost savings  
of over **\$8 billion** by **2020**



# "What would STOP you from using a chatbot?"





# THANK YOU

FOR QUESTIONS & COMMENTS



Travis McCallum



2425 N. Central Expressway, Suite 400 Richardson Texas 75080



972-346-8186



[travis.mccallum@impigertech.com](mailto:travis.mccallum@impigertech.com)

