global average open rate of SMS in 2018 was 95%, user response time is 90 seconds, and link click-through rate is 19%. The average number of conversions is 32%, an average of only 178 text messages are received each month, and only 1% of text messages are spam. Similar statistics exist for other messaging channels, such as Apple Business Chat, WhatsApp, Web Messaging and Facebook Messenger.

SUMMARY

[0005] The term embodiment and like terms are intended to refer broadly to all of the subject matter of this disclosure and the claims below. Statements containing these terms should be understood not to limit the subject matter described herein or to limit the meaning or scope of the claims below. Embodiments of the present disclosure covered herein are defined by the claims below, not this summary. This summary is a high-level overview of various aspects of the disclosure and introduces some of the concepts that are further described in the Detailed Description section below. This summary is not intended to identify key or essential features of the claimed subject matter, nor is it intended to be used in isolation to determine the scope of the claimed subject matter. The subject matter should be understood by reference to appropriate portions of the entire specification of this disclosure, any or all drawings and each claim.

[0006] There is a need in the art for improved and intelligent rerouting of communications from an e-mail environment to a messaging environment. A network device (e.g., a user's device) may be used to generate an e-mail to a client device (e.g., a business's device). A communication management system may intercept the e-mail and extract, from the e-mail, an intent or request of the user. The communication management system may transmit the intent or request over a chat communication channel, through which an agent, using the client device, may review the intent or request via a chat window. The agent, via the client device, can submit a response to the intent or request over the chat communication channel to the communication management system. The communication management system may generate an e-mail to the network device that includes the response and a conversation history between the network device and the client device.

[0007] According to a first aspect of the present disclosure, there is provided a computer-implemented method including: receiving a request e-mail message addressed to an account associated with a client, wherein the request e-mail message specifies an intent to address an issue; identifying a recipient for the request e-mail message, wherein the recipient is associated with the account; training a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages; using the request e-mail message as input to the machine learning model to identify the intent; updating the machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents; transmitting the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel; receiving a response to the intent; generating a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and transmitting the response e-mail message.

[0008] In some embodiments, the intent is transmitted to the recipient with the conversation history associated with the recipient and the sender of the request e-mail message, wherein the intent is incorporated into the conversation history. In some embodiments, the account is associated with a group of recipients and the method further comprises identifying the recipient from the group of recipients based on the intent. In some embodiments, the account associated with the client is further associated with a skill and the recipient is identified as a result of the recipient being assigned to the skill. In some embodiments, the method further comprises inserting a header and footer into the response e-mail message, wherein the header and the footer are associated with the client. In some embodiments, the method further comprises polling a client server to receive the request e-mail message. In some embodiments, the method further comprises receiving another e-mail message, determining that a conversation session corresponding to the request e-mail message is active, and transmitting a response to the other e-mail message. The response to the other e-mail message includes an instruction to utilize the conversation session corresponding to the request e-mail message.

[0009] According to a second aspect of the present disclosure, there is provided a system, including: one or more processors; and memory storing thereon instructions that, as a result of being executed by the one or more processors, cause the system to: receive a request e-mail message addressed to an account associated with a client, wherein the request e-mail message specifies an intent to address an issue; identify a recipient for the request e-mail message, wherein the recipient is associated with the account; train a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages; use the request e-mail message as input to the machine learning model to identify the intent; update the machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents; transmit the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel; receive a response to the intent; generate a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and transmit the response e-mail message.

[0010] According to a third aspect of the present disclosure, there is provided a non-transitory, computer-readable storage medium storing thereon executable instructions that, as a result of being executed by one or more processors of a computer system, cause the computer system to: receive a request e-mail message addressed to an account associated with a client, wherein the request e-mail message includes a body, and wherein the body specifies an intent to address an issue; identify a recipient for the request e-mail message, wherein the recipient is associated with the account; train a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages; use the request e-mail message as input to the machine learning model to identify the intent; update the

machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents; transmit the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel; receive a response to the intent; generate a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and transmit the response e-mail message.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The present disclosure is described in conjunction with the appended figures:

[0012] FIG. 1 shows a block diagram of an embodiment of a network interaction system;

[0013] FIG. 2 shows a block diagram of an embodiment of a network interaction system that includes a connection management system;

[0014] FIG. 3 shows a representation of a protocol-stack mapping of connection components' operation;

[0015] FIG. 4 represents a multi-device communication exchange system according to an embodiment;

[0016] FIG. 5 shows a block diagram of an embodiment of a connection management system;

[0017] FIG. 6 shows a block diagram of a network environment for dynamic and automatic message processing during communication sessions;

[0018] FIG. 7 shows a block diagram of a message environment that reroutes communications between e-mail and messaging environments;

[0019] FIG. 8 shows an illustrative example of a process for routing an e-mail message from a user to an agent or bot associated with a client in the form a conversation message in accordance with at least one embodiment;

[0020] FIG. 9 shows an illustrative example of a process for converting a conversation message into an e-mail message for delivery to a user a conversation message in accordance with at least one embodiment;

[0021] FIG. 10 shows an illustrative example of an interface for configuring e-mail message settings to enable e-mail messages from users to be routed to a corresponding agent, group of agents, or bot in accordance with at least one embodiment;

CLAIMS

1. A computer-implemented method comprising:

receiving a request e-mail message addressed to an account associated with a client, wherein the request e-mail message specifies an intent to address an issue;

identifying a recipient for the request e-mail message, wherein the recipient is associated with the account;

training a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages;

using the request e-mail message as input to the machine learning model to identify the intent;

updating the machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents;

transmitting the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel;

receiving a response to the intent;

generating a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and

transmitting the response e-mail message.

2. The computer-implemented method of claim 1, wherein the intent is transmitted to the recipient with the conversation history associated with the recipient and the sender of the request e-mail message, wherein the intent is incorporated into the conversation history.

3. The computer-implemented method of claim 1, wherein:

the account is associated with a group of recipients; and

the computer-implemented method further comprises identifying the recipient from the group of recipients based on the intent.

4. The computer-implemented method of claim 1, wherein:

the account associated with the client is further associated with a skill; and

the recipient is identified as a result of the recipient being assigned to the skill.

5. The computer-implemented method of claim 1, further comprising inserting a header and footer into the response e-mail message, wherein the header and the footer are associated with the client.

6. The computer-implemented method of claim 1, further comprising polling a client server to receive the request e-mail message.

7. The computer-implemented method of claim 1, further comprising:

receiving another e-mail message;

determining that a conversation session corresponding to the request e-mail message is active; and

transmitting a response to the other e-mail message, wherein the response to the other e-mail message includes an instruction to utilize the conversation session corresponding to the request e-mail message.

8. A system, comprising:

one or more processors; and

memory storing thereon instructions that, as a result of being executed by the one or more processors, cause the system to:

receive a request e-mail message addressed to an account associated with a client, wherein the request e-mail message specifies an intent to address an issue;

identify a recipient for the request e-mail message, wherein the recipient is associated with the account;

train a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages;

use the request e-mail message as input to the machine learning model to identify the intent;

update the machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents;

transmit the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel;

receive a response to the intent;

generate a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and

transmit the response e-mail message.

9. The system of claim 8, wherein:

the account associated with the client is further associated with a skill; and

the recipient is identified as a result of the recipient being assigned to the skill.

10. The system of claim 8, wherein the instructions further cause the system to insert a header and footer into the response e-mail message, wherein the header and the footer are associated with the client.

11. The system of claim 8, wherein the instructions further cause the system to poll a client server to receive the request e-mail message.

12. The system of claim 8, wherein the instructions further cause the system to:

receive another e-mail message;

determine that a conversation session corresponding to the request e-mail message is active; and

transmit a response to the other e-mail message, wherein the response to the other e-mail message includes an instruction to utilize the conversation session corresponding to the request e-mail message.

13. A non-transitory, computer-readable storage medium storing thereon executable instructions that, as a result of being executed by one or more processors of a computer system, cause the computer system to:

receive a request e-mail message addressed to an account associated with a client, wherein the request e-mail message includes a body, and wherein the body specifies an intent to address an issue;

identify a recipient for the request e-mail message, wherein the recipient is associated with the account;

train a machine learning model to perform a semantic analysis of e-mail messages to identify intents expressed in the e-mail messages, wherein the machine learning model is trained using a dataset of input e-mail messages and known intents included in the input e-mail messages;

use the request e-mail message as input to the machine learning model to identify the intent;

update the machine learning model using the request e-mail message, the intent, feedback corresponding to identification of the intent from the request e-mail message, and the dataset of input e-mail messages and known intents;

transmit the intent and additional information for identification of one or more resolutions for the intent, wherein the intent and the additional information is transmitted over a chat communication channel, and wherein when the intent and the additional information is received

by the recipient, the recipient can determine a resolution from the one or more resolutions and respond using the chat communication channel;

receive a response to the intent;

generate a response e-mail message, wherein the response e-mail message includes the response and a conversation history associated with the recipient and a sender of the request e-mail message; and

transmit the response e-mail message.

14. The non-transitory, computer-readable medium of claim 13, wherein the intent is transmitted to the recipient with the conversation history associated with the recipient and the sender of the request e-mail message, wherein the intent is incorporated into the conversation history.

15. The non-transitory, computer-readable medium of claim 13, wherein the executable instructions further cause the computer system to insert a header and footer into the response e-mail message, wherein the header and the footer are associated with the client.

16. The non-transitory, computer-readable medium of claim 13, wherein the executable instructions further cause the computer system to poll a client server to receive the request e-mail message.

17. The non-transitory, computer-readable medium of claim 13, wherein the executable instructions further cause the computer system to:

receive another e-mail message;

determine that a conversation session corresponding to the request e-mail message is active; and

transmit a response to the other e-mail message, wherein the response to the other e-mail message includes an instruction to utilize the conversation session corresponding to the request e-mail message.

18. The computer-implemented method of claim 1, wherein the machine learning model is dynamically trained by soliciting the feedback corresponding to the identification of the intent from the request e-mail message.

19. The computer-implemented method of claim 1, wherein the machine learning model is trained and updated in real-time as request e-mail messages are received.

20. The system of claim 8, wherein the machine learning model is dynamically trained by soliciting the feedback corresponding to the identification of the intent from the request e-mail message.

21. The system of claim 8, wherein the machine learning model is trained and updated in real-time as request e-mail messages are received.

22. The system of claim 8, wherein:

the account is associated with a group of recipients; and

the instructions further cause the system to identify the recipient from the group of recipients based on the intent.

23. The system of claim 8, wherein the intent is transmitted to the recipient with the conversation history associated with the recipient and the sender of the request e-mail message, wherein the intent is incorporated into the conversation history.

24. The non-transitory, computer-readable medium of claim 13, wherein:

the account is associated with a group of recipients; and

the executable instructions further cause the computer system to identify the recipient from the group of recipients based on the intent.

25. The non-transitory, computer-readable medium of claim 13, wherein:

the account associated with the client is further associated with a skill; and

the recipient is identified as a result of the recipient being assigned to the skill.

26. The non-transitory, computer-readable medium of claim 13, wherein the machine learning model is dynamically trained by soliciting the feedback corresponding to the identification of the intent from the request e-mail message.

27. The non-transitory, computer-readable medium of claim 13, wherein the machine learning model is trained and updated in real-time as request e-mail messages are received.