A communication system for conducting an interaction with customers using social media is provided. The communication system can include a social media gateway and a dialog system. The social media gateway can receive messages from social media networks and translate those messages into a form readable and usable by the dialog system. The dialog system, in turn, accepts the social media messages and associates those messages with one or more dialog structures. A dialog structure includes a set of executable rules that allow the dialog system to automatically respond to the social media message or refer that message to an appropriate human agent. With the social media gateway and the dialog system, the communication system is operable to interact with customers across different social media networks.
Fig. 2A
Start

Receive message for social media network site

Process message

Determine dialog data structure associated with message(s)

Execute dialog data structure

Determine if agent action is required?

Refer to agent

Determine if more dialog actions?

End

Fig. 4
602 Start

604 Receive response to the message from the agent

606 Process response

608 Determine social media(s) associated with response

610 Format response

612 Post response

614 Analyze response

616 Correct dialog data structure

618 End

Fig. 6
Fig. 7
SOCIAL MEDIA CONTACT CENTER
DIALOG SYSTEM

CROSS REFERENCE

[0001] This application claims priority to U.S. Provisional Application Ser. No. 61/263,013, filed Nov. 20, 2009, entitled “GEO POD SYSTEM,” which is incorporated herein by reference in its entirety.

BACKGROUND

[0002] Contact centers generally exchange information with consumers through directed contacts. Directed contacts consist of emails, phone calls, or other forms of communication that are directed to the contact center. However, many people, today, exchange information or interact through non-direct methods. Non-direct communications require users to post communications to third parties, but not to a specific person or organization. Non-direct methods include social media, which may include websites, networks, or other communication systems. Social media can include: blogs, microblogs, RSS feeds, social media websites (such as LinkedIn, Facebook, Twitter, MySpace), and other types of social media, generally, it is not possible for contact centers to communicate with consumers through non-direct methods. As such, the contact centers may be unable to interact with consumers to offer certain types of customer service.

[0003] Further, attempting to interface with social media sites is very difficult for contact centers. The volume of data transferred in some social media sites, such as Twitter, is extremely large. As such, it becomes difficult for the contact center to filter through all of the information to glean the most important posts and respond to those posts. Further, each social media site has different data structures and presents data differently using application-specific formats. As such, the contact center may be unable to use a simple system to exchange information. Further, it is difficult to correlate different messages or information received across different social media.

SUMMARY

[0004] It is with respect to the above issues and other problems that the embodiments presented herein were contemplated. Systems and methods for conducting an interaction with customers using social media are provided herein. A communication system can include a social media gateway and a dialog system. The social media gateway can receive messages from social media and translate those messages into a form readable and usable by the dialog system. The dialog system, in turn, accepts the social media messages and associates those messages with one or more dialogs. A dialog is an automated communication scenario that allows the dialog system to automatically respond to the social media message or refer that message to an appropriate human agent. With the social media gateway and the dialog system, the communication system is operable to interact with customers across different social media.

[0005] The invention concept of the embodiments presented herein is a four part process: gather social media interactions, analyze the interactions for relevance, enable automated dialog interactions, and integrate agent and/or expert feedback for analysis improvements. The first component of the invention is the social media gateway (social media gateway). The social media gateway is responsible for gathering, monitoring, and mining social media sites and sources for social media content. Then, the social media gateway brings the content into a contact center. The social media gateway may not perform any analysis, but act as a bridge to bring content into the contact center. For Twitter, the gathering of content may require using the Twitter REST application programming interface (API) to query for information. For Facebook, the social media gateway can monitor all “friends” of the enterprise account and bring in all status posts and friend requests into the contact center. Similarly, other social media can be queried in a like manner to the two examples given above for Twitter and Facebook. The social media gateway also handles specific information queries for information from a central social media identity/account, providing a central point of contact from the enterprise to the social media accounts. Finally, the social media gateway can perform out-bound posts to various sites. For example, if an agent needs to post a Tweet as a response to a work item, the social media gateway may take the agent information and perform the post to Twitter.

[0006] Next, the system contains one or more analysis components. Various text processing and trend analysis techniques are built into the system for evaluating, classifying, and identifying trends in individual interactions and group interactions. Standard techniques for text processing may be used (Regular expression, LSI, and the like) and integrated throughout the system. Contact center applications can make use of the analysis components through dialog creation tools. Interactions are analyzed based on the application logic of the dialogs. Data is also fed to the algorithms to increase data repository for trending and other collective analysis tools. The agent interfaces also can access an analysis tools. Agents, subject matter experts, supervisors, or any other individual or group within the contact center can respond and provide feedback and/or comment on interactions or dialogs. Input from such contact center personnel are incorporated into the analysis tools for training and reinforced learning. For example: if a Tweet was classified a sales item but the agent identifies the Tweet as a service issue, that information is collected from the agent and fed to the analysis algorithms to help train and tune.

[0007] Dialog development and interaction is major differentiator of the system. All interactions brought into the contact center can be handled through some form of dialog processing. The dialog may perform simple routing functions or the dialog may perform more complex functions including automated responses. In addition, a single interaction may be processed by multiple dialog applications and/or dialogs may be chained to perform several layers of logic on the interaction. A tool similar to Avaya’s Dialer Advisor, available through Avaya Inc., may be used to develop the dialog applications.

[0008] Finally, the system can integrate agent interaction and feedback. The analysis algorithms can be tuned by feedback from Agents, subject matter experts, supervisors, and/or other contact center personnel. Such feedback is tied into the system through a programmable interface for the contact center personnel desktop. This interface may be implemented as a Web-based interface controlled and created by a Web server in conjunction with instructions from the dialog application. For example: a blog post routed to an agent may have a series of check boxes for the agent to indicate the topics covered by the post. The buttons may be configured by the dialog application when the work item is queued for agent
processing. Upon completion of the work item, the input to the buttons is sent to the analysis algorithms while any blog response would be sent to the social media gateway for submission to the blog site.

While agents, subject matter experts, supervisors, and the like are specifically named in the description above, the embodiments may be extended to engineering, marketing, maintenance, service, and support personnel, and the like, as coordinated by the contact center. The social media contact center may also be integrated with back-office processes, systems, and databases.

The phrases “at least one”, “one or more”, and “and/or” are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions “at least one of A, B, and C”, “at least one of A, B, or C”, “one or more of A, B, and C”, “one or more of A, B, or C” and “A, B, and/or C” means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B, and C together.

The term “all” or “any” entity refers to one or more of that entity. As such, the terms “all” (or “any”), “one or more” and “at least one” can be used interchangeably herein. It is also to be noted that the terms “comprising”, “including”, and “having” can be used interchangeably.

The term “automatic” and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation using material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be “material”.

The term “computer-readable medium” as used herein refers to any tangible storage that participates in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, NVRAM, or magnetic or optical disks. Volatile media includes dynamic memory, such as main memory. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, magneto-optical medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, a solid state medium like a memory card, any other memory chip or cartridge, or any other medium from which a computer can read. When the computer-readable media is configured as a database, it is to be understood that the database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Accordingly, the invention is considered to include a tangible storage medium and prior-art-recognized equivalents and successor media, in which the software implementations of the present invention are stored.

The terms “determine”, “calculate”, and “compute,” and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation, or technique.

The term “module” as used herein refers to any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software that is capable of performing the functionality associated with that element. Also, while the invention is described in terms of exemplary embodiments, it should be appreciated that individual aspects of the invention can be separately claimed.

**BRIEF DESCRIPTION OF THE DRAWINGS**

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

**FIG. 1** is a block diagram of an embodiment of a communication system, operable to interact with persons using a social media network;

**FIG. 2A** is a block diagram of an embodiment of a social media gateway;

**FIG. 2B** is a block diagram of an embodiment of a dialog system;

**FIG. 3** is a block diagram of embodiments of a dialog data structure;

**FIG. 4** is a flow diagram of an embodiment of a process for conducting an interaction using social media;

**FIG. 5** is a flow diagram of an embodiment of a process for processing a social media message;

**FIG. 6** is a flow diagram of an embodiment of a process for responding to a social media message;

**FIG. 7** is a block diagram of an embodiment of a computing environment;

**FIG. 8** is a block diagram of an embodiment of a computer system.

In the appended figures, similar components and/or features may have the same reference label. Further, various components of the same type may be distinguished by following the reference label by a letter that distinguishes among the similar components. If only the first reference label is used in the specification, the description is applicable to any one of the similar components having the same first reference label irrespective of the second reference label.

**DETAILED DESCRIPTION**

The ensuing description provides embodiments only, and is not intended to limit the scope, applicability, or configuration of the invention. Rather, the ensuing description will provide those skilled in the art with an enabling description for implementing the embodiments. It should be understood that various changes may be made in the function and arrangement of elements without departing from the spirit and scope of the appended claims.

A communication system 100, for interacting with persons using social media is shown in FIG. 1. The communication system 100 can include a user interface 102, a network 108, and one or more types of social media networks or systems, such as social media network 112, social media network 2114, and social media network 3116. Social media networks 112, 114, and/or 116 can be any social media including, but not limited to, networks, websites, or computer enabled systems. For example, a social media network may be MySpace, Facebook, Twitter, LinkedIn, Spoke, or other similar computer enabled systems or websites. The communication system 100 can communicate with more or fewer social media networks 112, 114, and/or 116 than those shown FIG. 1, as represented by ellipses 118.

The network 108 can be any network or system operable to allow communication between the contact center
102 and the one or more social media networks 112, 114, and/or 116. The network 108 can represent any communication system, whether wired or wireless, using any protocol and/or format. The network 108 provides communication capability for the contact center 102 to communicate with sites corresponding to the one or more social media networks 112, 114, and/or 116. However, the network 108 can represent two or more networks, where each network is a different communication system using different communication protocols and/or formats and/or different hardware and software. For example, network 108 can be a wide area network, local area network, the Internet, a cellular telephone network, or some other type of communication system. The network may be described in conjunction with FIGS. 7 and 8.

[0030] A contact center 102 can be a system that can communicate with one or more persons that use social media networking sites. The contact center 102 can be hardware, software, or a combination of hardware and software. The contact center 102 can be executed by one or more servers or computer systems, as described in conjunction with FIGS. 7 and 8. The contact center 102 can include all systems, whether hardware or software, that allow the contact center 102 to receive, service, and respond to directed contacts. For example the contact center 102 can include the telephone or email system, the interface to human agents, systems to allow human agents to service and respond to received contacts, and one or more systems operable to analyze and improve the functionality of agent interaction.

[0031] The contact center 102 may include any system that communicates with one or more social media networks 104 and a social media gateway 106. While the dialog system 104 and the social media gateway 106 are shown as being a part of the contact system 102, in other embodiments, the dialog system 104 and/or the social media gateway 106 are separate systems or functions executed separately from the contact center 102 and/or executed by a third party. The dialog system 104 may process and receive messages. The social media gateway 106 can receive and translate messages from the one or more social media networks 112, 114, and/or 116. An embodiment of the dialog system 104 is described in conjunction with FIG. 2B. An embodiment of the social media gateway 106 is described in conjunction with FIG. 2A.

[0032] The contact center 102 may also communicate with one or more communication devices 110. The communication devices 110 can represent a customer's or user's cell phone, email system, personal digital assistant, laptop computer, or other device that allows the contact center 102 to interact with the customer. The contact center 102 can modify a non-direct contact, from a social media network 112, 114, and/or 116, into a directed contact by sending a response message directly to a customer's communication device 110.

[0033] An embodiment of the social media gateway 106 is shown in FIG. 2A. The social media gateway 106 can include one or more components which may include hardware, software, or combination of hardware and software. The social media gateway 106 can be executed by a computer system such as those in conjunction with FIGS. 7 and 8. However, in other embodiments, the components described in conjunction with FIG. 2A are logic circuits or other specially-designed hardware that are embodied in a field programmable gate array (FPGA).

[0034] Herein, the social media gateway 106 can include one or more content filters 202a, 202b, and/or 202c. A content filter 202 can receive all of the messages for the contact center 102 from a social media network 112, 114, and/or 116 and eliminate or delete those messages that do not require a response. For example, a message between two friends on a Facebook page, if not pertaining to a product or a service of the company operating the contact center 102, may not need a response. As such, the content filter 202 can filter out or delete that non-suitable message from the messages that are received by social media network application programming interface (API) 1204a, social media network API 1204b, and/or social media network API 3 204c. With the content filter 202, the social media network API 204 only needs to translate those messages that should be received by the dial system 104. Translation typically requires the conversion of the message into a different format.

[0035] The content filter 202 is provided with one or more heuristics for filter rules from a filter database (not shown). These filter rules can be created by the external customer or internal user (e.g. agent or administrator) of the communication system 100. Thus, the user or customer of the communication system 100 can customize the filtering of messages from social media networks 112, 114, and/or 116. Further, different rules may be applied to different social media networks, as some social media networks may have different types of messages or postings than other types of social media networks.

[0036] While the content filter 202 is shown as part of the social media gateway 106, it is to be appreciated that the content filter 202 may be a part of the social media network API 204. The content filter 202 may correspond to the query terms used by the social media network API 204. The content filter 202 or query terms are an argument to the social media network API 204 call. The social media network API 204 can be an application that the social media network 112, 114, and/or 116 provides to access the site. Thus, the social media network API 204 is called and connects the social media gateway 106 to the social media network 112, 114, and/or 116. Any suitable filter criteria may be employed. Examples include content of source, address field, destination or recipient address fields, time stamp field, subject matter field, and message body field. For example, an obvious searchable content is the name of the business entity running the contact center 102 and/or products or services of the enterprises.

[0037] The social media gateway 106 can include one or more social media network API 204. As shown in FIG. 2A, the social media gateway 106 may include a social media network API 204 for each social media network 112, 114, and/or 116. As such, the social media gateway 106 can interact with each social media network 112, 114, and/or 116 in the particular (often unique) format or protocol used by the social media network 112, 114, and/or 116. Further, when new social media networks are created, the social media gateway 106 can easily be expanded to interact with those social media networks by adding another social media network API 204. Where social media networks 112 are more standardized, or use substantially similar formats or protocols, a single social media network API can be shared by multiple such social media networks 112-116.

[0038] The social media network API 204 can receive messages from and send messages corresponding to the social media network 112, 114, and/or 116. The social media network API 204 can translate a message received from a social media network 112, 114, and/or 116 and send the translated message to a message filter 206. The social media network API 204 can translate the received message into a standard formatted file. For example, the translated message may be
represented by an extensible mark-up language (XML) file or other file having a general format. As such, each specific and particular social media network message can be translated into a standard format for use by the dialog system 104. Further, the social media network API 204 can receive a generally or standard format response message, from the dialog system 104 and translate that response into a particular or specifically formatted response message that can be posted to the corresponding social media network 112, 114, and/or 116.

[0039] Messages to the contact center 102 are addressed to the contact center 102. For example, a customer may become a “friend” of the contact center 102 on a social media network 114, such as Facebook. The customer may then address a message to the contact center 102 on Facebook. This non-direct contact is a message that is not sent directly to the contact center 102 but to the contact center’s Facebook page. In other embodiments, the contact center 102 receives messages not addressed to the contact center 102. For example, the contact center 102 can receive tweets from Twitter that are “broadcast” rather than addressed to the contact center 102. The contact center 102 may also search for message or content on the social media network 112, 114, and/or 116. Exemplary search criteria include customer name, customer profession, customer home address, customer business address, customer employer name, customer educational or professional background, customer hobby, personal or business interests, customer family profile, and the like. Thus, the social media gateway 106 of the contact center 102 can query, gather, or connect to a live feed of data from a social media network 112, 114, and/or 116 and then apply a filter to the indirect information.

[0040] The translated messages from the social media network API 204 can be received by a message filter 206. A message filter 206 can perform some or all of the functions of the content filter 202 and eliminate messages before being sent to the dialog system 104. For example, in other embodiments, the message filter 206 eliminates from within the messages before the trimmed messages are sent to the dialog system 104. For example, a message from a social media network 112 may have three or four interactions between two parties not associated with the contact center 102. Only one of the several postings may be pertinent to the dialog system 104. As such, the message filter 206 can eliminate or delete at least a portion of the other messages for the dialog system 104. Thus, the dialog system 104 receives a message where some of the content of the message has been deleted. The message filter 206 can retrieve heuristics or filter rules from a filter database (not shown), similar to the content filter 202. A substantial difference between the content and message filters 202 and 206 is that the content filter 202 is specific to a particular message format associated with a corresponding social media network 112-116, while the message filter 206 is applied to a standardized or universal format and is therefore common to multiple social media networks 112-116. One skilled in the art will understand the type of rules that may be used to filter information from messages such that only pertinent questions, facts, requests, or information is sent to the dialog system 104.

[0041] A message aggregator 208 may also be included with the social media gateway 106. A message aggregator 208 can, in contrast to the message filter 206, combine two or more messages into a packet or grouping that is sent to the dialog system 104. Therefore, the message aggregator 208 can inter-relate or combine messages based on different information within the messages. For example, two messages may be combined based on any of the message fields referenced above, such as the person that posted the message, the subject, the request or question asked, the person the message was sent to, or other information that may be pertinent to the dialog system 104. Thus, the dialog system 104 may be able to respond concurrently to two or more messages based on a grouping provided by the message aggregator 208. If the messages are aggregated or not aggregated, each message can be sent from the social media gateway 106 to the dialog system 104.

[0042] The social media gateway 106 can also send responses back to the social media networks 112, 114, and/or 116. A response from an agent in the contact center 102 can be sent to the social media gateway 106. The response may be in a general format and translated. The translated response may then be posted to the appropriate social media network 112, 114, and/or 116 by the social media gateway 106. In other embodiments, the agent may post the response directly to the social media network 112, 114, and/or 116 without sending the response to the social media gateway 106.

[0043] An embodiment of the dialog system 104 is shown in FIG. 2B. The dialog system 104 can include one or more components which may hardware, software, or combination of hardware and software. The dialog system 104 can be executed by a computer system such as those described in conjunction with FIGS. 7 and 8. However, in other embodiments, the components described in conjunction with FIG. 2B, are logic circuits or other specially-designed hardware that are embodied in a field programmable gate array (FPGA) or application specific integrated circuit (ASIC). The components contained within the dialog system 104 can include a dialog core 210 that is communication with a message history database 222, an agent interface 234, and a heuristic rules and dialogs database 218. Further, the heuristic rules and dialogs database 218 can be in communication with a dialog creator 220.

[0044] The dialog core 210 can include one or more sub-components. For example, the dialog core 210 includes a trend analysis component 212, a text processing component 214, and an analysis tools component 216. These components, similar to the components for the dialog system 104, can be hardware, software, or combination of hardware and software. The dialog core 210 steps through the states of a dialog data structure. A dialog is a set of inputs and associated actions that can be taken which allow for the automatic and structured response to social media requests or messages. For example, if a user asks for a manual, the input of the text word “manual” can cause the dialog system 104 to send information about one or more manuals. In turn, the receiver of the response may respond, in kind, with the selection of a certain user manual. In which case, the dialog data structure may then automatically send the user to a website where the user can retrieve an electronic version of the manual. As such, the dialog data structure allows the dialog core 210 to automate the interaction between the contact center 102 and a person. This automation eliminates the need for agent involvement, in some situations, and makes the contact center 102 more efficient and more effective. Further, the automation expands the contact center’s ability to answer numerous messages from the plethora of postings on the numerous social media networks 112, 114, and/or 116.
[0045] The dialog creator 220 will create a dialog data structure 300 that steps through various states for each social media message that comes into the contact center 102. The first step might be to send the social media message to the trend analysis component 212, then to the text processing component 214, and then execute a query of a Customer Relationship Management (CRM) system and a CRM database 232 to find out if this user has an existing order. A CRM database 232 can store information about customers or other data related to customer relations. Finally, the dialog data structure might decide that the social media message should be sent to a human agent 228 for processing. The states or node transitions are in the dialog core 210 and make use of many different components that the dialog creator 220 combines in any way the user desires to handle the social media messages. The dialog core 210 can make use of the trend analysis component 212, text processing component 214, or other systems. The dialog core 210 may also interface with a CRM system and/or CRM database 232, external databases, social media user information (e.g., followers, friends, past history, etc.), and other systems.

[0046] The trend analysis component 212 is operable to analyze trends that occur between two or more messages received by the social media networks 112, 114, and/or 116. The two messages can be from different social media networks, so that the trend analysis component 212 can identify trends across several different social media networks 112, 114, and/or 116. Trends can include multiple occurrences of the same word or phrase, multiple occurrences of a customer identity, product name or service, or multiple occurrences of some other information that might indicate a trend. Further, the trend analysis component 212 may be able to identify escalations in the occurrences of particular text, or identities, or other information, or may identify multiple occurrences over a period of time. The trend analysis component 212 may also be able to apply one or more different algorithms to occurrences of information within the social media networks. For example, the trend analysis component 212 can match the number of occurrences of a phrase or word over a period of time and apply analysis to determine if the occurrences are increasing or decreasing over the period of time.

[0047] The text processing component 214 is operable to analyze one or more messages from social media networks 112, 114, or 116. Some possible methods for text processing can include Regular Expression, Latent Semantic Indexing (LSI), text part of speech tagging, text clustering, N-Gram document analysis, etc. In addition, for possibly longer documents, (such as, blogs or emails), the text processing component 214 may execute one or more methods of document summarization. The summarization may occur if the social media message will be sent an agent 228 of the contact center 102; the summarization can reduce the amount of information that the agent may manage. The text processing rules or models may be stored in and/or retrieved from a text processing rules database 230. The text processing rules database 230 can be a database as described in conjunction with FIGS. 7 and 8 that stores rules or models used by the text processing component 214.

[0048] The text processing component 214 can identify one or more occurrences of a particular text, such as using one or more of the message fields referenced above, in order to associate that social media message with one or more dialog data structures in the heuristic rules and dialog database 218. For example, the text processing component can look for the word “manual,” in the social media message. If the word “manual” is found, the text processing component 214 may retrieve a dialog from the heuristic rules and dialogs database 218, which communicates with the customer about one or more owner’s manuals, repair manuals, or other types of manuals. In another example, if the social media message includes the words, “buy,” “sell,” “price,” “discount” or other types of words that may indicate the user or customer wishes to buy a product, the text processing component 214 can retrieve one or more dialogs from the heuristic rules and dialogs database 218 that can assist the customer in purchasing products or services from the enterprise.

[0049] The analysis tools component 216 is operable to analyze response messages received back from an agent interface 224. In analyzing the agent’s responses, the analysis tools component 216 can determine if the dialog data structure 300 (FIG. 3) originally retrieved by the text processing component 214 met the needs of the customer. In the analysis, the agent may enter one or more items of information, for the analysis tools component 216, about the response and about how the response matched with the dialog data structures 300. The analysis tools component 216 can review the response and determine if it was similar to the response provided by the dialog data structure 300. Thus, the analysis tools component 216 can provide information to the dialog core 210 or the dialog creator 220 to improve the dialog data structures 300 (FIG. 3) that are included in the heuristic rules and dialogs database 218.

[0050] The message history database 222 can be any database or data storage system as described in conjunction with FIGS. 7 and 8. Thus, the message history database 222 can store data in data fields, objects, or other data structures to allow other systems to retrieve that information at a later time. The message history database 222 can store previous messages or information about previous messages. Thus, for example, if the trend analysis component 212 is analyzing several messages over a period of time, the trend analysis component 212 can retrieve information about previous messages associated with the current analysis from the message history database 222. As such, the trend analysis component 212 can better detect trends occurring at the social media networks 112, 114, and/or 116. The data stored by the message history database 222 can include the entire message or only a portion of the message, and in some circumstances, include metadata about the message(s).

[0051] The heuristic rules and dialogs database 218 can be any type of database or data storage system as described in conjunction with FIGS. 7 and 8. The heuristic rules and dialogs database 218 can store information and data fields, data objects, and/or any other data structures. An example of information stored within the heuristic rules and dialogs database 218 is described in conjunction with FIG. 6. The heuristic rules and dialogs database 218 stores rules and dialogs that automate responses to received social media messages. The dialogs control the interaction between the dialog core 210 and the social media network 112, 114, and/or 116. The dialogs or heuristic rules can be created by a dialog creator 220. Thus, the dialog creator 220 can interface with the user input 226 to receive information about dialogs. The user input 226 is then used to form the states and responses for a dialog.

[0052] An agent interface 224 is a communication system operable to send action items to contact center agents, in the contact center 102. An agent can be a person or other system that is operable to respond to certain questions or requests.
from a customer. For example, the agent can be a person that has specialized expertise in a topic area, such as technical support. The agent interface 224 can format the social message into an action item and forward that message to one or more agents 228. The agent interface 224 can also receive response(s) back from the agents 228. The information provided by the agent may be used by the dialog core 210 to generate a response to the social media message. For example, the information may classify the social media message (e.g., sales, service, etc.). In other embodiments, the response is a complete response to the social media message that can be posted to the social media network 112, 114, and/or 116.

[0053] An embodiment of a dialog data structure 300 is shown in FIG. 3. The dialog data structure 300 can be stored in several different forms of databases, such as relational databases, flat files, object-oriented databases, etc. Thus, while the term “data field” or “segment” is used, the data may be stored in an object, an attribute of an object, or some other form of data structure. Further, the dialog data structure 300 can be stored, retrieved, sent, or received during the processing of dialogues by the dialog core 210 or the dialog creator 220. The dialog data structure 300 stores one or more items of information in one or more data fields. The numeric identifiers (e.g., 302, 304, etc.) shown in FIG. 3 can identify, in one or more fields or segments, either the data field or segment or the data stored in the data field or segment.

[0054] The dialog data structure 300 can include one or more input segments, such as, input segment 1 302 and input segment 2 304, a rules segment 306, and/or a dialog script segment 308. Input segments 302 and 304 each include one or more fields comprising the one or more inputs that may be required to associate a social media message with the dialog data structure 300. The inputs segments 302 and 304 may include a customer identity, a respective customer type, a text word, a phrase, or other information that indicates that the dialog data structure 300 is associated with the social media messages. The input segments 302 and 304 may also include certain trends that the trend analysis component 212 can identify. As such, if a trend is identified and associated with the inputs 302 and/or 304, the dialog data structure 300 can be retrieved and used by the dialog core 210. While there are only two input segments shown in FIG. 3, there may be more or fewer input segments associated with the dialog data structure 300, as indicated by ellipses 310.

[0055] The rules segment 306 can include one or more heuristic rules that either help with the association of the respective dialog data structure 300 with the social media message or control the interaction between the dialog core 210 and the social media customer. For example, the rule segment 306 can state that the dialog data structure 300 applies only if the social media message includes input segment 1 302 but not input segment 2 304. One skilled in the art will be able to identify other types of rules that may govern the association of the dialog data structure 300 with the social media message. In other embodiments, the rules segment 306 states that if the social media message includes inputs 302 and/or 304, then the dialog core 210 should respond with a certain type of action.

[0056] Generally, a dialog script segment 308 includes a script of actions or responses that direct one or more other components, such as the dialog core 210 (FIG. 2B), to conduct the actions or send the responses. The dialog script segment 308 can include the one or more responses required by the dialog core 210. If the dialog script segment 308 applies (that is, if the social media message is requesting a certain type of information), the dialog script segment 308 may include the one or more responses that the dialog core 210 should communicate to respond to that social media message. The dialog script segment 308 can also include a response and a pointer to another dialog script segment 308 or another dialog data structure 300. The dialog script segment 308 may have one or more actions that may be taken by another component after a secondary response is received by a customer. Thus, the dialog script segment 308 can allow an interaction to continue with a social media user over a period of time and several interactions between the user and the contact center 102.

[0057] It should be noted that the dialog script segment 308 can reference one or more other dialog data structures 300. Thus, the dialog script segment 308 can direct the dialog core 210 to reference at least one other dialog data structure 300 to further act on the social media message. Further, the social media message can be subject of two or more dialog script segments 308, and direct the dialog core 210 to complete two dialog script segments at the same time. Also, any dialog script segments 308 may not be associated with a response but direct the dialog core 210 to complete other actions, such as populating databases or gathering information.

[0058] An embodiment of a process or method 400 for completing an interaction between a customer communicating through a social media network 112 and a contact center 102 is shown in FIG. 4. Generally, the method 400 begins with a start operation 402 and terminates with an end operation 418. While a general order for the steps of the method 400 are shown in FIG. 4, the method 400 can include more or fewer steps or arrange the order of the steps differently than those shown in FIG. 4. The method 400 can be executed as a set of computer-executable instructions executed by a general or special purpose computer system and encoded or stored on a computer readable medium. Hereinafter, the method 400 shall be explained with reference to the systems, components, modules, software, data structures, etc. described in conjunction with FIGS. 1-3.

[0059] A contact center 102 receives a first message from a social media network 112, in step 404. The social media gateway 106 can receive the first message. The social media gateway 106 can receive two or more messages. One of the messages may be filtered and deleted by the content filter 202, and the remaining message or messages passed to the social media network API 1 204a. The social media network API 1 204a can process the first message or send the first message to the message filter 206 for processing, in step 406. An embodiment of a method for processing the first message, in step 406, is shown in FIG. 5. The first message, after processing, may be passed to the message aggregator 208 to be combined with one or more other messages and then sent to the dialog system 104.

[0060] The dialog system 104 may further process the message, in step 406. Further, the dialog system 104 can determine a dialog data structure 300 associated with the first message, in step 408. The dialog core 210 analyzes the content or the information included in the first message to determine a dialog data structure 300 that is associated with that information in the first message. For example, the text processing component 214 can determine an input segment 302 and/or 304 that is associated with the social media message.
Upon locating one or more dialog data structures 300 that are associated with the content of the first message, the text processing component 214 can retrieve the dialog data structures 300 from the heuristic rules and dialog database 218. The text processing component 214 may then provide the one or more dialog data structures 300 to the dialog core 210.

[0061] The dialog core 210 may then execute the dialog script segment 308 in step 410. The dialog core 210 may send a response or automatically respond to the first message according to the information in the dialog script segment 308, in the dialog data structure 300. In other embodiments, the dialog core 210 determines if an agent action is required, in step 412. Agent interaction may be required if an agent needs to converse with the customer who sent the first message. If the agent interaction is necessary, as indicated in the dialog script segment 308, the step 412 flows “YES” to step 414. If no agent interaction is required, the step 412 flows “NO” back to step 408. If there is no agent interaction required, the dialog script segment 308 provides an automated response that can be sent by the dialog core 210.

[0062] The automated response includes information for the dialog core 210 to formulate one or more messages and then send the messages to the social media gateway 106. The social media gateway 106 may then receive the response message in a message aggregator 208, which may combine one or more responses into fewer messages. The combined messages may be sent to a message filter 206. The message filter 206 may filter out one or more items of information from the response messages. From there, the message filter 206 may send the response back to the original social media network API 1 204a that received the first message, but may also send the message to other social media network APIs 204b and 204c, such that the single response can be sent in response to one or more messages that are associated with the first message. The social media network API 204 then translates the responses and posts the responses to the social media networks 112, 114, and/or 116.

[0063] If agent interaction is required, the agent interface 224 converts the first message into an action item for a human agent, in the contact center 102. The agent interface 224 then refers the action item to the agent 226, in step 414. The work item may be processed in the contact center 102, similar to other work items associated with the user skilled in the art will understand. The human agent may then respond and send the response back to the agent interface 224. The agent interface 224 can convert the work item into a response for the dialog core 210, which may then proceed to send the response as described above.

[0064] If there is no agent response or after the agent response, the dialog core 210 can determine if the dialog core 210 needs to process more steps in the dialog data structure 300 or in another dialog data structure, in step 416. For example, the dialog core 210 can determine if there are steps in another dialog script segment 308 that are associated with the social media message. In other embodiments, other steps in the present dialog script segment 308 still need to be acted upon. If there are more steps to process, the step 416 flows YES to determine the dialog data structure 300 that has further steps to be acted upon, in step 408.

[0065] An embodiment of one or more actions taken to process a first message is shown in FIG. 5. Generally, the method 500 begins with a start operation 502 and terminates with an end operation 516. While a general order for the steps of the method 500 are shown in FIG. 5, the method 500 can include more or fewer steps or arrange the order of the steps differently than those shown in FIG. 5. The method 500 can be executed as a set of computer-executable instructions executed by a computer system and encoded or stored on a computer readable medium. Hereinafter, the method 500 shall be explained with reference to the systems, components, modules, software, data structures, etc. described in conjunction with FIGS. 1-3.

[0066] The steps shown in FIG. 5 may be completed or executed by one or more components of the social media gateway 106 and/or dialog system 104. For example, filtering messages, in step 504, may be completed by a content filter 202. Filtering messages may include receiving two or more messages from a social media network 112. The content filter 202 can retrieve rules or other heuristics that analyze the messages. One of the messages may not include information pertinent for response by the contact center 102. As such, the content filter 202 may delete this message and not send the message on to the social media network API 204. The social media network API 204 can translate the message into a standard format such as an XML file or other standard format file. The general format file may require that the message be parsed, in step 506. Parsing the message can include analyzing the message for certain components. For example, the social media network API 204 can determine an identity of the sender of the message, such as a phone number, email address, or name. The social media network API 204 can also identify certain key words within the text or a subject of the first message, can identify the origination source, such as the social media network 112, can determine the time that the message was sent, can determine the date the message was sent, and/or can identify other pertinent information. The information may be parsed by the social media network API 204 and sent to the message filter 206 in a similar manner for every message.

[0067] The message filter 206 may then filter the message, in step 508. Filtering the message describes eliminating one or more items from the message. For example, the message filter 206 can eliminate superficial text, such that the dialog core 210 need not analyze all of the text within the message. For example, if the post on the social media network site included a conversation between two or more people, one or more of the posts from another party may be unrelated to the information that is required by the dialog core 210. As such, the message filter 206 can delete or filter the information associated from the message before sending the message to the dialog core 210. The filtered message may then be sent to the message aggregator 208.

[0068] The message aggregator 208 may interrelate messages, in step 510. Interrelating messages may include identifying common elements between two or more messages. For example, two messages may have the same sender or may have the same subject. If there are one or more elements of the messages that are similar or the same, the message aggregator 208 can interrelate the messages. If the messages are interrelated, the message aggregator 208 may then aggregate the messages, in step 512. Aggregating the messages may include combining the messages into a group or a single message. For example, the text of a second message may be copied and placed into the first message, or both messages may be sent as a group with a common identifier. In this way, the message aggregator 208 can eliminate the dialog core 210 from
answering the same question more than once. The interrelated, aggregated messages may then be sent to the dialog core 210.

[0069] The dialog core 210 can determine if there are trends related to the message(s) with the trend analysis component 212. Further, the text processing component 214 can determine if the message needs to be referred to an agent, in step 514. For example, if the dialog script segment 308 of the dialog data structure 300 requires that a human agent review the message, the text processing component 214 can refer the message to an agent interface 224. The referral may then be sent to an agent 228.

[0070] An embodiment of a method 600 for processing a response to a message from the social media network site is shown in FIG. 6. Generally, the method 600 begins with a start operation 602 and terminates with an end operation 618. While a general order for the steps of the method 600 are shown in FIG. 6, the method 600 can include more or fewer steps or arrange the order of the steps differently than those shown in FIG. 6. The method 600 can be executed as a set of computer-executable instructions executed by a computer system and encoded or stored on a computer readable medium. Hereinafter, the method 600 shall be explained with reference to the systems, components, modules, software, data structures, etc. described in conjunction with FIGS. 1-3.

[0071] An agent interface 224 of a dialog system 104 can receive a response from an agent 228, in step 604. The response may be associated with a first message received from a social media network 112. The agent interface 224, dialog core 210, or one or more components of a social media gateway 106 may then process the response, in step 606. For example the agent interface 224 may convert the response from a work item into a response that is processed by the dialog core 210. For example, the work item may be formatted in a particular standard, as used by the contact center 102. However, the dialog core 210 may only process responses in a standard format such as an XML file. As such the agent interface 224 can convert the work item into a standard format response. Once received by the dialog core 210, the standard format response, can be analyzed by the text processing component 214. The text processing component 214 can determine the message associated with the response, in step 608. For example, the response may indicate to some identifier or some other identifier which associates the response with a certain message. Using the message identifier, the text processing component 214 can then determine to which social media network API 204a in the social media gateway 106 should receive the response message.

[0072] The response message may then be sent to the social media gateway 106 and processed by the message aggregator 208 and message filter 206, to either combine the response with other responses or filter certain superfluous information from the response. The aggregated and filtered response may then be sent to the social media network API 204a to format the response for posting on the social media network 112, in step 610. For example, the social media network API 204a may take the standard format response message and translate the response into a format specific to the social media network 112. Thus, the response may then be posted to the social media network 112 without any error. The social media network API 1204a posts the response, in step 612.

[0073] In parallel or subsequent to receiving and/or posting a response message, the dialog core 210 may also analyze the response, in step 614. In embodiments, the analysis tools component 216 analyzes the response received by the agent. The response is compared to the dialog script segment 308 in the dialog data structure 300. If the dialog script segment 308 can be changed to automate the response or to better format the response in the dialog script segment 308, then the analysis tool 316 can record information about the differences between the agent response and the dialog script segment 308. The analysis allows for the improvement of the dialog data structures 300 in the heuristic rules and dialog database 218. The improvement information may be sent either to the dialog core 210 to correct the dialog script segment 308 or to a dialog creator 220. The dialog creator 220 may receive the information allowing a user to provide user input 226 to modify the dialog script segment 308 in the dialog data structure 300 and dialog database 218. Once the user corrects the dialog script segment 308, the dialog data structure 300 response may be automated for future messages. The dialog creator may then correct the dialog data structure 300 in the heuristic rules and dialog database 218, in step 616.

[0074] FIG. 7 illustrates a block diagram of a computing environment 700 that may perform as servers, computers, or other systems providing services herein. The environment 700 includes one or more user computers 705, 710, and 715. The user computers 705, 710, and 715 may be general purpose personal computers (including, merely by way of example, personal computers, and/or laptop computers running various versions of Microsoft Corp.’s Windows™ and/or Apple Corp.’s Macintosh™ operating systems) and/or workstation computers running any of a variety of commercially-available UNIX™ or UNIX-like operating systems. These user computers 705, 710, 715 may also have any of a variety of applications, including for example, database client and/or server applications, and web browser applications. Alternatively, the user computers 705, 710, and 715 may be any other electronic device, such as a thin-client computer, Internet-enabled mobile telephone, and/or personal digital assistant, capable of communicating via a network 720 and/or displaying and navigating web pages or other types of electronic documents. Although the exemplary computer environment 700 is shown with three user computers, any number of user computers may be supported.

[0075] Environment 700 further includes a network 720. The network 720 may be any type of network familiar to those skilled in the art that can support data communications using any of a variety of commercially-available protocols, including without limitation SIP, TCP/IP, SNA, IPX, AppleTalk, and the like. Merely by way of example, the network 720 may be a local area network (“LAN”), such as an Ethernet network, a Token-Ring network and/or the like; a wide-area network; a virtual network, including without limitation a virtual private network (“VPN”); the Internet; an intranet; an extranet; a public switched telephone network (“PSTN”); an infra-red network; a wireless network (e.g., a network operating under any of the IEEE 802.11 suite of protocols, the Bluetooth™ protocol known in the art, and/or any other wireless protocol); and/or any combination of these and/or other networks. The network 720 may be the same or similar to network 108.

[0076] The system may also include one or more server 725, 730. In this example, server 725 is shown as a web server and server 730 is shown as an application server. The web server 725, which may be used to process requests for web pages or other electronic documents from user computers 705, 710, and 715. The web server 725 can be running an
operating system including any of those discussed above, as well as any commercially-available server operating systems. The web server 725 can also run a variety of server applications, including SQL servers, HTTP servers, FTP servers, CGI servers, database servers, Java servers, and the like. In some instances, the web server 725 may publish operations available to operations as one or more web services.

0077 The environment 700 may also include one or more file and/or application servers 730, which can, in addition to an operating system, include one or more applications accessible by a client running on one or more of the user computers 705, 710, 715. The server(s) 730 and/or 725 may be one or more general purpose computers capable of executing programs or scripts in response to the user computers 705, 710 and 715. As one example, the server 730, 725 may execute one or more web applications. The web application may be implemented as one or more scripts or programs written in any programming language, such as Java™, C, C++, or C#, and/or any scripting language, such as Perl, Python, or TCL, as well as combinations of any programming/scripting languages. The application server(s) 730 may also include database servers, including without limitation those commercially available from Oracle, Microsoft, Sybase™, IBM™, and the like, which can process requests from database clients running on a user computer 705.

0078 The web pages created by the server 725 and/or 730 may be forwarded to a user computer 705 via a web (file) server 725, 730. Similarly, the web server 725 may be able to receive web page requests, web services invocations, and/or input data from a user computer 705 and can forward the web page requests and/or input data to the web (application) server 730. In further embodiments, the web server 730 may function as a file server. Although for ease of description, FIG. 6 illustrates as separate web server 725 and file/application server 730, those skilled in the art will recognize that the functions described with respect to server 730 may be performed by a single server and/or a plurality of specialized servers, depending on implementation-specific needs and parameters. The computer systems 705, 710, and 715, web (file) server 725 and/or web (application) server 730 may function as the system, devices, or components described in FIGS. 1-3.

0079 The environment 700 may also include a database 735. The database 735 may reside in a variety of locations. By way of example, database 735 may reside on a storage medium local to (and/or resident in) one or more of the computers 705, 710, 715, 725, 730. Alternatively, it may be remote from any or all of the computers 705, 710, 715, 725, 730, and in communication (e.g., via the network 720) with one or more of these. The database 735 may reside in a storage area network (“SAN”) familiar to those skilled in the art. Similarly, any necessary files for performing the functions attributed to the computers 705, 710, 715, 725, 730 may be stored locally on the respective computer and/or remotely, as appropriate. The database 735 may be a relational database, such as Oracle 10i™, that is adapted to store, update, and retrieve data in response to SQL-facilitated commands.

0080 FIG. 8 illustrates one embodiment of a computer system 800 upon which the servers, computers, or other systems or components described herein may be deployed and executed. The computer system 800 is shown comprising hardware elements that may be electrically coupled via a bus 855. The hardware elements may include one or more central processing units (CPUs) 805, one or more input devices 810 (e.g., a mouse, a keyboard, etc), and one or more output devices 815 (e.g., a display device, a printer, etc). The computer system 800 may also include one or more storage devices 820. By way of example, storage device(s) 820 may be disk drives, optical storage devices, solid-state storage devices such as a random access memory (“RAM”) and/or a read-only memory (“ROM”), which can be programmable, flash-updateable and/or the like.

0081 The computer system 800 may additionally include a computer-readable storage media reader 825, a communications system 830 (e.g., a modem, a network card (wireless or wired), an infra-red communication device, etc.), and working memory 840, which may include RAM and ROM devices as described above. The computer system 800 may also include a processing acceleration unit 855, which can include a DSP, a special-purpose processor, and/or the like.

0082 The computer-readable storage media reader 825 can be further connected to a computer-readable storage medium, together (and, optionally, in combination with storage device(s) 820) comprehensively representing remote, local, fixed, and/or removable storage devices plus storage media for temporarily and/or more permanently containing computer-readable information. The communications system 830 may permit data to be exchanged with the network 720 (FIG. 7) and/or any other computer described above with respect to the computer system 800. Moreover, as disclosed herein, the term “storage medium” may represent one or more devices for storing data, including read only memory (ROM), random access memory (RAM), magnetic RAM, core memory, magnetic disk storage mediums, optical storage mediums, flash memory devices and/or other machine-readable mediums for storing information.

0083 The computer system 800 may also comprise software elements, shown as being currently located within a working memory 840, including an operating system 845 and/or other code 850. It should be appreciated that alternate embodiments of a computer system 800 may have numerous variations from that described above. For example, customized hardware might also be used and/or particular elements might be implemented in hardware, software (including portable software, such as applets), or both. Further, connection to other computing devices such as network input/output devices may be employed.

0084 In the foregoing description, for the purposes of illustration, methods were described in a particular order. It should be appreciated that in alternate embodiments, the methods may be performed in a different order than that described. It should also be appreciated that the methods described above may be performed by hardware components or may be embodied in sequences of machine-executable instructions, which may be used to cause a machine, such as a general-purpose or special-purpose processor or logic circuits programmed with the instructions to perform the methods. These machine-executable instructions may be stored on one or more machine readable mediums, such as CD-ROMs or other type of optical disks, floppy diskettes, ROMs, RAMs, EPROMs, EEPROMs, magnetic or optical cards, flash memory, or other types of machine-readable mediums suitable for storing electronic instructions. Alternatively, the methods may be performed by a combination of hardware and software.

0085 Specific details were given in the description to provide a thorough understanding of the embodiments. However, it will be understood by one of ordinary skill in the art that the
embodiments may be practiced without these specific details. For example, circuits may be shown in block diagrams in order not to obscure the embodiments in unnecessary detail. In other instances, well-known circuits, processes, algorithms, structures, and techniques may be shown without unnecessary detail in order to avoid obscuring the embodiments.

Also, it is noted that the embodiments were described as a process which is depicted as a flowchart, a flow diagram, a data flow diagram, a structure diagram, or a block diagram. Although a flowchart may describe the operations as a sequential process, many of the operations can be performed in parallel or concurrently. In addition, the order of the operations may be re-arranged. A process is terminated when its operations are completed, but could have additional steps not included in the figure. A process may correspond to a method, a function, a procedure, a subroutine, a subprogram, etc. When a process corresponds to a function, its termination corresponds to a return of the function to the calling function or the main function.

Furthermore, embodiments may be implemented by hardware, software, firmware, middleware, microcode, hardware description languages, or any combination thereof. When implemented in software, firmware, middleware or microcode, the program code or code segments to perform the necessary tasks may be stored in a machine readable medium such as storage medium. A processor(s) may perform the necessary tasks. A code segment may represent a procedure, a function, a subprogram, a program, a routine, a subroutine, a module, a software package, a class, or any combination of instructions, data structures, or program statements. A code segment may be coupled to another code segment or a hardware circuit by passing and/or receiving information, data, arguments, parameters, or memory contents. Information, arguments, parameters, data, etc. may be passed, forwarded, or transmitted via any suitable means including memory sharing, message passing, token passing, network transmission, etc.

While illustrative embodiments of the invention have been described in detail herein, it is to be understood that the inventive concepts may be otherwise variously embodied and employed, and that the appended claims are intended to be construed to include such variations, except as limited by the prior art.

What is claimed is:

1. A method for the method comprising:
a processor in a contact center receiving a first message from a social media network;
the processor processing the first message;
based on the processing of the first message, the processor determining a set of rules to be applied to the first message; and
the processor executing the set of rules.

2. The method as defined in claim 1, further comprising:
before receiving the first message, filtering a second message from a group of messages including the first message and the second message.

3. The method as defined in claim 1, wherein in the determining step, the processor identifying a dialog data structure associated with the first message, the dialog data structure mapping the set of rules against an input parameter identified during the processing step and, further comprising:
in response to executing the dialog data structure, the processor determining if agent action is required; and
the processor referring the first message to an agent.

4. The method as defined in claim 3, further comprising:
the processor receiving a response to the first message from the agent;
the processor processing the response;
the processor determining the social media network associated with the first message;
the processor formatting the response for the determined social media network; and
the processor posting the formatted response to the social media network.

5. The method as defined in claim 4, wherein in the determining step, the processor identifying a dialog data structure associated with the first message, the dialog data structure mapping the set of rules against an input parameter identified during the processing step and further comprising:
the processor employing information, in the response from the agent, to further complete the dialog data structure.

6. The method as defined in claim 1, wherein the processing the first message comprises at least one of a group consisting of filtering the first message, parsing the first message, interrelating the first message, aggregating the first message, and referring the first message.

7. The method as defined in claim 1, wherein in the determining step, the processor identifying a dialog data structure associated with the first message, the dialog data structure mapping the set of rules against an input parameter identified during the processing step and further comprising:
the processor receiving a second message;
the processor determining that the first message and the second message are part of a trend; and
the processor determining a second dialog data structure associated with the trend.

8. The method as defined in claim 7, wherein the dialog data structure includes an automated response to the first message.

9. A computer readable medium having stored thereon instructions that cause a computing system to execute a method for conducting an interaction between a social media network and a contact center, the instructions comprising:
instructions to receive a first message from the social media network;
instructions to process the first corresponding message;
instructions to determine based on at least one characteristic in the first message identified during the first message processing, a set of rules to serve and/or further process the first message; and
instructions to execute the set of rules;
in response to executing the set of rules, instructions to invoke at least one of the following:
instructions to refer the first message to an agent;
instructions to receive a response to the first message from the agent;
instructions to process further the response;
instructions to determine a social media network associated with the first message;
instructions to format the response for the determined social media network; and
instructions to post the formatted response to the social media network.

10. The computer readable medium as defined in claim 9, wherein the instructions to process the first message comprises at least one of a group consisting of filtering the first
message, parsing the first message, interrelating the first message, aggregating the first message, and referring the first message.

11. The computer readable medium as defined in claim 9, further comprising:
   instructions to receive a second message;
   instructions to determine that the first message and the second message are part of a trend; and
   instructions to determine a dialog associated with the trend.

12. The computer readable medium as defined in claim 9, wherein the dialog includes an automated response to the first message.

13. The computer readable medium as defined in claim 9, further comprising:
   instructions to analyze the response; and
   in response to analyzing the response, instructions to correct the dialog.

14. The computer readable medium as defined in claim 9, further comprising: before receiving the first message, instructions to filter a second message from a group of messages including the first message and the second message.

15. A communication system comprising:
   a social media gateway in communication with a social media network, the social media gateway operable to receive a first message from the social media network and send a first response to the social media network;
   a dialog system in communication with the social media gateway, the dialog system to process the first message and determine a set of rules based on content of the first message, operable to execute the set of rules, and, in response to executing the dialog, operable to create the first response; and
   a contact center in communication with the dialog system, the contact center operable to provide an agent to assist in formulating the first response.

16. The communication system as defined in claim 15, wherein the social media gateway and the dialog system are part of the contact center.

17. The communication system as defined in claim 15, wherein the social media gateway comprises:
   a social media network API in communication with a social media network, the social media network API operable to receive the first message from the social media network and operable to send the first response to the social media network;
   a message filter in communication with the social media network API, the message filter operable to filter the first message before sending the first message to the dialog system; and
   a message aggregator in communication with the message filter, the message aggregator operable to combine the first message with a second message as a group for processing by the dialog system.

18. The communication system as defined in claim 17, further comprising a content filter in communication with a social media network, the content filter operable to prevent the first message from being received by the social media network API.

19. The communication system as defined in claim 15, wherein the dialog system comprises:
   a dialog core in communication with the social media gateway, the dialog core operable to process the first message according to the dialog and operable to process the first response;
   a heuristic rules and dialogs database in communication with the dialog core, the heuristic rules and dialogs database operable to store the dialog;
   a dialog creator in communication with the heuristic rules and dialogs database, the dialog creator operable to create a dialog and operable to store the dialog into the heuristic rules and dialogs database;
   a message history database in communication with the dialog core, the message history database operable to store an interaction history associated with the first message; and
   an agent interface in communication with the dialog core and an agent associate with the contact center, the agent interface operable to send the first message to an agent and operable to receive the first response to the first message from the agent.

20. The communication system as defined in claim 19, wherein the dialog core comprises:
   a trend analysis component operable to analyze a trend associated with the first message and a second message;
   a text processing component operable to determine automatically text associated with the dialog and operable to retrieve automatically the dialog associated with the text; and
   an analysis tools component operable to analyze the first response and operable to modify the dialog in response to the analysis.

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