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COMMUNICATION SYSTEM AND COMMUNICATION CONTROL METHOD

Abstract

The present disclosure describes a communication system that includes communication circuitry and processing circuitry. The processing circuitry is configured to collect a piece of user information of a user via the communication circuitry, analyze the collected piece of user information to obtain a user preference of the user, and identify a piece of advertisement as targeting the user according to the user preference. The processing circuitry is further configured to generate a guidance message based on reason of promotion information stored in association with the piece of advertisement, transmit the guidance message to a client terminal of the user, and transmit the piece of advertisement to the client terminal. The guidance message and the piece of advertisement are to be output as vocalized speeches of a voice agent of the client terminal.

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Background/Summary

CROSS REFERENCE TO RELATED APPLICATIONS [0001] This application is a continuation of U.S. Ser. No. 18/969,517 filed Dec. 5, 2024, which is a continuation of U.S. Ser. No. 17/473,861 filed 10 Sep. 13, 2021, which is a continuation of U.S. Ser. No. 15/770,297 filed Apr. 23, 2018, which is a National Stage of PCT/JP2016/081987 filed Oct. 28, 2016 and claims the benefit of Japanese Priority Patent Application JP 2016-011663 filed Jan. 25, 2016. The entire contents of each of U.S. Ser. Nos. 18/969,517, 17/473,861, and 15/770,297 are incorporated herein by reference.

TECHNICAL FIELD
[0002] The present disclosure relates to a communication system and a communication control method.
BACKGROUND ART
[0003] In recent years, with the development of communication technologies, messages have frequently been exchanged via networks. Users can use information processing terminals such as smartphones, mobile phone terminals, and tablet terminals to confirm messages transmitted from other terminals and transmit messages.
[0004] In addition, with information processing terminals, agent systems that perform automatic responses to messages of users have been proposed. With regard to such systems, for example, Patent Literature 1 discloses that an agent of a navigation device mounted in a vehicle performs automatic information exchange with an agent of a portable communication terminal of a passenger to reproduce preferred music of the passenger or reproduce preferred music written in profile data of the passenger.
[0005] In addition, Patent Literature 2 discloses a mutual extension system in which one electronic device shares and utilizes learned content in a case in which a plurality of electronic devices are connected to each other in a wireless or wired manner.
[0006] In addition, Patent Literature 3 discloses a system in which a certain agent device stores a learned preference of a user in a recording medium (an SD card) and another agent device can read and use a preference of the user learned by the other agent device from the recording medium when the recording medium is inserted into the other agent device.
CITATION LIST
Patent Literature
[0007] Patent Literature 1: JP 2003-22278A [0008] Patent Literature 2: JP 2005-063057A [0009] Patent Literature 3: JP 2007-279971A

DISCLOSURE OF INVENTION

Technical Problem

[0010] Herein, as one method of proposing advertisements to users on the Internet, there is a method of analyzing preferences from search histories or the like of the users and selecting and presenting advertisements to which the users are estimated to show positive responses, but an advertisement effect is not necessarily produced. That is, the preferences can be analyzed for treatment from explicit requests such as search keywords or browsed goods, but advertisements are not placed in consideration of potential preferences or requests of users.

[0011] Accordingly, the present disclosure proposes a communication system and a communication control method capable of arousing potential requests of users and presenting more effective advertisement information.

Solution to Problem

[0012] According to the present disclosure, there is provided a communication system including: a communication unit configured to collect a use situation of a service or a client terminal of a user; and a control unit configured to analyze a preference in accordance with the use situation of the user collected via the communication unit, to transmit a guidance message for arousing interest in a specific product to a client terminal of the user via the communication unit such that the guidance message is output as speech of an agent of the client terminal when at least the one user is determined to be a potential customer of the product in accordance with an analysis result of the preference, and to perform control such that an advertisement for promoting the product is transmitted to the client terminal of the user via the communication unit and the advertisement is output as speech of the agent of the client terminal at a predetermined timing after the transmission of the guidance message.

[0013] According to the present disclosure, there is provided a communication control method including: by a processor, collecting a use situation of a service or a client terminal of a user via a communication unit; analyzing a preference in accordance with the use situation of the user collected via the communication unit; transmitting a guidance message for arousing interest in a specific product to a client terminal of the user via the communication unit such that the guidance message is output as speech of an agent of the client terminal when at least the one user is determined to be a potential customer of the product in accordance with an analysis result of the preference; and performing control such that an advertisement for promoting the product is transmitted to the client terminal of the user via the communication unit such that the advertisement is output as speech of the agent of the client terminal at a predetermined timing after the transmission of the guidance message.

Advantageous Effects of Invention

[0014] According to the present disclosure described above, it is possible to arouse potential requests of users and present more effective advertisement information.

[0015] Note that the effects described above are not necessarily limitative. With or in the place of the above effects, there may be achieved any one of the effects described in this specification or other effects that may be grasped from this specification.

Description

BRIEF DESCRIPTION OF DRAWINGS

[0016] FIG. **1** is an explanatory diagram illustrating an overview of a communication control system according to an embodiment of the present disclosure.

[0017] FIG. **2** is a diagram illustrating an overall configuration of the communication control system according to the embodiment.

[0018] FIG. **3** is a block diagram illustrating an example of a configuration of a voice agent server

according to the embodiment.
[0019] FIG. **4** is a diagram illustrating an example of a configuration of a dialogue processing unit according to the embodiment.
[0020] FIG. **5** is a flowchart illustrating a conversation DB generation process according to the embodiment.
[0021] FIG. **6** is a flowchart illustrating a phoneme DB generation process according to the embodiment.
[0022] FIG. **7** is a flowchart illustrating a dialogue control process according to the embodiment.
[0023] FIG. **8** is an explanatory diagram illustrating a data configuration example of the conversation DB according to the embodiment.
[0024] FIG. **9** is a flowchart illustrating a process of updating the conversation DB according to the embodiment.
[0025] FIG. **10** is a flowchart illustrating a conversation data transition process from an individualized layer to a common layer according to the embodiment.
[0026] FIG. **11** is an explanatory diagram illustrating transition of conversation data to a basic dialogue conversation DB according to the embodiment.
[0027] FIG. **12** is a flowchart illustrating a conversation data transition process to a basic dialogue DB according to the embodiment.
[0028] FIG. **13** is a diagram illustrating an example of advertisement information registered in an advertisement DB according to the embodiment.
[0029] FIG. **14** is a flowchart illustrating an advertisement content insertion process according to the embodiment.
[0030] FIG. **15** is a diagram illustrating a configuration of a dialogue processing unit according to an application example of the embodiment.
[0031] FIG. **16** is a diagram illustrating an example of a configuration of an advertisement insertion processing unit according to the embodiment.
[0032] FIG. **17** is a flowchart illustrating a message transmission process according to the embodiment.
[0033] FIG. **18** is a flowchart illustrating a message reception process according to the embodiment.
[0034] FIG. **19** is a flowchart illustrating a process of extracting potential customers based on transmitted and received messages according to the embodiment.
[0035] FIG. **20** is a flowchart illustrating a process of extracting potential customers based on a posting history according to the embodiment.
[0036] FIG. **21** is a flowchart illustrating an advertisement output process according to the embodiment.
[0037] FIG. **22** is a flowchart illustrating an advertisement information reception process according to the embodiment.
[0038] FIG. **23** is a flowchart illustrating a guidance/reminder message reception process according to the embodiment.

MODE(S) FOR CARRYING OUT THE INVENTION

[0039] Hereinafter, (a) preferred embodiment(s) of the present disclosure will be described in detail with reference to the appended drawings. Note that, in this specification and the appended drawings, structural elements that have substantially the same function and structure are denoted with the same reference numerals, and repeated explanation of these structural elements is omitted.
[0040] In addition, the description will be made in the following order. [0041] 1. Overview of communication control system according to embodiment of the present disclosure [0042] 2. Configuration [0043] 2-1. System configuration [0044] 2-2. Server configuration [0045] 3. System operation process [0046] 3-1. Conversation data registration process [0047] 3-2. Phoneme DB generation process [0048] 3-3. Dialogue control process [0049] 3-4. Conversation DB updating

process [0050] 3-5. Advertisement insertion process [0051] 4. Advertisement insertion process [0052] 4-1. Configuration [0053] 4-2. Operation process [0054] 5. Conclusion

1. OVERVIEW OF COMMUNICATION CONTROL SYSTEM ACCORDING TO EMBODIMENT OF THE PRESENT DISCLOSURE

[0055] A communication control system according to an embodiment of the present disclosure is capable of arousing potential requests of users and presenting more efficient advertisement information. Hereinafter, an overview of the communication control system according to the embodiment will be described with reference to FIG. **1**.

[0056] FIG. **1** is an explanatory diagram illustrating the overview of the communication control system according to an embodiment of the present disclosure. A dialogue with an agent **10** can be performed via, for example, a client terminal **1** such as a smartphone owned by a user. The client terminal **1** includes a microphone and a speaker, and thus is capable of performing a dialogue with the user by voice.

[0057] The user normally carries the client terminal **1** and uses the client terminal **1** to confirm a schedule or browse message communication with friends or the Internet. At this time, the virtual agent **10** is displayed on a display screen of the client terminal **1** to perform user assistance. For example, on the basis of registered schedule information, the agent **10** informs the user that "It's almost time to leave!" by voice and performs road guidance to a destination when a time for the user to leave arrives. In addition, when the client terminal **1** receives a message from another user, the agent **10** can inform the user "Look, you have a message!" by voice and can also read out the content of the message. In this way, the agent **10** assists the user with daily use of the client terminal **1** or a service by voice and improves the value of the client terminal **1** or the service.

[0058] The communication control system according to the embodiment helps the user in his or her daily life using the agent **10**, as described above, and determines whether the user is a potential customer of a predetermined product, that is, whether the user is a customer who expresses interest in the predetermined product. Then, in a case in which the user is a potential customer, an advertisement effect can be improved by causing the agent **10** to output a guidance message and encourage the user to purchase a product.

[0059] For example, in the example illustrated in FIG. **1**, in a case in which it is determined that the user is a potential customer of a "crab hot pot" (hot pot cooking in which crab is used), the agent **10** can say "Now is the good season for hot pot dishes!" as illustrated in FIG. **1**, to induce interest in the advertised product (in this example, "crab hot pot") or can present an image (for example, an image of a crab or an image of a coupon) related to the advertised product in the background of the agent **10** so that a potential interest of the user can be aroused. Then, after the interest of the user is aroused in this way, the advertised product is presented again at a predetermined timing.

[0060] In this way, by guiding the user so that his or her interest is aroused with dialogue with the agent **10** that regularly assists the user and then presenting an advertised product, compared to an Internet advertisement method of presenting advertisement information to the user at the beginning through a popup advertisement or an advertisement banner displayed while the user browses a web site, a potential request of the user can be aroused naturally, and thus an improvement in the advertisement effect is expected.

[0061] In addition, the communication control system (agent system) according to the embodiment is not limited to a voice agent that performs a response by voice, and a text treatment agent that performs a response on a text basis may be used in the client terminal **1**.

2. CONFIGURATION

2-1. System Configuration

[0062] Next, an overall configuration of the above-described communication control system according to the embodiment will be described with reference to FIG. **2**. FIG. **2** is a diagram illustrating an overall configuration of the communication control system according to the embodiment.

[0063] As illustrated in FIG. **2**, the communication control system according to the embodiment includes the client terminal **1** and an agent server **2**.
[0064] The agent server **2** is connected to the client terminal **1** via a network **3** and transmits and receives data. Specifically, the agent server **2** generates response voice to spoken voice collected and transmitted by the client terminal **1** and transmits the response voice to the client terminal **1**. The agent server **2** includes a phoneme database (DB) corresponding to one or more agents and can generate response voice through the voice of a specific agent. Herein, the agent may be a character of a cartoon, an animation, a game, a drama, or a movie, an entertainer, a celebrity, a historical person, or the like or may be, for example, an average person of each generation without specifying an individual. In addition, the agent may be an animal or a personified character. In addition, the agent may be a person in whom the personality of the user is reflected or a person in whom the personality of a friend, a family member, or an acquaintance of the user is reflected.
[0065] In addition, the agent server **2** can generate response content in which the personality of each agent is reflected. The agent server **2** can supply various services such as management of a schedule of the user, transmission and reception of messages, and supply of information through dialogue with the user via the agent.
[0066] The client terminal **1** is not limited to the smartphone illustrated in FIG. **2**. For example, a mobile phone terminal, a tablet terminal, a personal computer (PC), a game device, a wearable terminal (smart eyeglasses, a smart band, a smart watch, or a smart necklace) may also be used. In addition, the client terminal **1** may also be a robot.
[0067] The overview of the communication control system according to the embodiment has been described above. Next, a configuration of the agent server **2** of the communication control system according to the embodiment will be described specifically with reference to FIG. **3**.

2-2. Agent Server **2**

[0068] FIG. **3** is a block diagram illustrating an example of the configuration of the agent server **2** according to the embodiment. As illustrated in FIG. **3**, the agent server **2** includes a voice agent interface (I/F) **20**, a dialogue processing unit **30**, a phoneme storage unit **40**, a conversation DB generation unit **50**, a phoneme DB generation unit **60**, an advertisement insertion processing unit **70**, an advertisement DB **72**, and a feedback acquisition processing unit **80**.
[0069] The voice agent I/F **20** functions as an input and output unit, a voice recognition unit, and a voice generation unit for voice data. As the input and output unit, a communication unit that transmits and receives data to and from the client terminal **1** via the network **3** is assumed. The voice agent I/F **20** can receive the spoken voice of the user from the client terminal **1**, process the voice, and convert the spoken voice into text through voice recognition. In addition, the voice agent I/F **20** processes answer sentence data (text) of the agent output from the dialogue processing unit **30** to vocalize answer voice using phoneme data corresponding to the agent and transmits the generated answer voice of the agent to the client terminal **1**.
[0070] The dialogue processing unit **30** functions as an arithmetic processing device and a control device and controls overall operations in the agent server **2** in accordance with various programs. The dialogue processing unit **30** is realized by, for example, an electronic circuit such as a central processing unit (CPU) or a microprocessor. In addition, the dialogue processing unit **30** according to the embodiment functions as a basic dialogue processing unit **31**, a character A dialogue processing unit **32**, a person B dialogue processing unit **33**, and a person C dialogue processing unit **34**.
[0071] The character A dialogue processing unit **32**, the person B dialogue processing unit **33**, and the person C dialogue processing unit **34** realize dialogue specialized for each agent. Herein, examples of the agent include a “character A,” a “person B,” and a “person C” and the embodiment is, of course, not limited thereto. Each dialogue processing unit realizing dialogue specialized for many agents may be further included. The basic dialogue processing unit **31** realizes general-purpose dialogue not specialized for each agent.

[0072] Herein, a basic configuration common to the basic dialogue processing unit **31**, the character A dialogue processing unit **32**, the person B dialogue processing unit **33**, and the person C dialogue processing unit **34** will be described with reference to FIG. **4**.
[0073] FIG. **4** is a diagram illustrating an example of a configuration of the dialogue processing unit **300** according to the embodiment. As illustrated in FIG. **4**, the dialogue processing unit **300** includes a question sentence retrieval unit **310**, an answer sentence generation unit **320**, a phoneme data acquisition unit **340**, and a conversation DB **330**. The conversation DB **330** stores CONVERSATION data in which question sentence data and answer sentence data are paired. In the dialogue processing unit specialized for the agent, conversation data specialized for the agent is stored in the conversation DB **330**. In a general-purpose dialogue processing unit, general-purpose data (that is, basic conversation data) not specific to the agent is stored in the conversation DB **330**.
[0074] The question sentence retrieval unit **310** recognizes question voice (which is an example of spoken voice) of the user output from the voice agent I/F **20** and retrieves question sentence data matching the question sentence converted into text from the conversation DB **330**. The answer sentence generation unit **320** extracts the answer sentence data stored in association with the question sentence data retrieved by the question sentence retrieval unit **310** from the conversation DB **330** and generates the answer sentence data. The phoneme data acquisition unit **340** acquires phoneme data for vocalizing an answer sentence generated by the answer sentence generation unit **320** from the phoneme storage unit **40** of the corresponding agent. For example, in the case of the character A dialogue processing unit **32**, phoneme data for reproducing answer sentence data through the voice of the character A is acquired from the character A phoneme DB **42**. Then, the dialogue processing unit **300** outputs the generated answer sentence data and the acquired phoneme data to the voice agent I/F **20**.
[0075] The phoneme storage unit **40** stores a phoneme database for generating voice of each agent. The phoneme storage unit **40** can be realized by a read-only memory (ROM) and a random access memory (RAM). In the example illustrated in FIG. **3**, a basic phoneme DB **41**, a character A phoneme DB **42**, a person B phoneme DB **43**, and a person C phoneme DB **44** are stored. In each phoneme DB, for example, a phoneme segment and a prosodic model which is control information for the phoneme segment are stored as phoneme data.
[0076] The conversation DB generation unit **50** has a function of generating the conversation DB **330** of the dialogue processing unit **300**. For example, the conversation DB generation unit **50** collects assumed question sentence data, collects answer sentence data corresponding to each question, and subsequently pairs and stores the question sentence data and the answer sentence data. Then, when a predetermined number of pieces of conversation data (pairs of question sentence data and answer sentence data: for example, 100 pairs) are collected, the conversation DB generation unit **50** registers the conversation data as a set of conversation data of the agent in the conversation DB **330**.
[0077] The phoneme DB generation unit **60** has a function of generating the phoneme DB stored in the phoneme storage unit **40**. For example, the phoneme DB generation unit **60** analyzes voice information of predetermined read text, decomposes the voice information into the phoneme segment and the prosodic model which is control information, and performs a process of registering a predetermined number or more of pieces of voice information as phoneme data in the phoneme DB when the predetermined number or more of pieces of voice information are collected.
[0078] The advertisement insertion processing unit **70** has a function of inserting advertisement information into dialogue of the agent. The advertisement information to be inserted can be extracted from the advertisement DB **72**. In the advertisement DB **72**, advertisement information (for example, information such as advertisement content of text, an image, voice, or the like, an advertiser, an advertisement period, and an advertisement target person) requested by a supply side such as a company (a vendor or a supplier) is registered.
[0079] The feedback acquisition processing unit **80** has a function of inserting a question for

acquiring feedback into dialogue of the agent and obtaining the feedback from the user.
[0080] The configuration of the agent server **2** according to the embodiment has been described specifically above. Note that the configuration of the agent server **2** according to the embodiment is not limited to the example illustrated in FIG. **3**. For example, each configuration of the agent server **2** may be achieved by another server on a network.
[0081] Next, a basic operation process of the communication control system according to the embodiment will be described with reference to FIGS. **5** to **14**.
3. SYSTEM OPERATION PROCESS
3-1. Conversation Data Registration Process
[0082] FIG. **5** is a flowchart illustrating the conversation DB generation process **330** according to the embodiment. As illustrated in FIG. **5**, the conversation DB generation unit **50** first stores assumed question sentences (step S**103**).
[0083] Subsequently, the conversation DB generation unit **50** stores answer sentences corresponding to (paired with) the question sentences (step S**106**).
[0084] Subsequently, the conversation DB generation unit **50** determines whether a predetermined number of pairs of question sentences and answer sentences (also referred to as conversation data) are collected (step S**109**).
[0085] Then, in a case in which the predetermined number of pairs of question sentences and conversation sentences are collected (Yes in step S**109**), the conversation DB generation unit **50** registers the data sets formed of many pairs of question sentences and answer sentences in the conversation DB **330** (step S**112**). As examples of the pairs of question sentences and answer sentences, for example, the following pairs are assumed.
[0086] Examples of pairs of question sentences and answer sentences [0087] Pair 1 [0088] Question sentence: Good morning. [0089] Answer sentence: How are you doing today? [0090] Pair 2 [0091] Question sentence: How's the weather today? [0092] Answer sentence: Today's weather is OO.
[0093] The pairs can be registered as conversation data in the conversation DB 330.
3-2. Phoneme DB Generation Process
[0094] FIG. **6** is a flowchart illustrating a phoneme DB generation process according to the embodiment. As illustrated in FIG. **6**, the phoneme DB generation unit **60** first displays an example sentence (step S**113**). In the display of the example sentence, for example, an example sentence necessary to generate phoneme data is displayed on a display of an information processing terminal (not illustrated).
[0095] Subsequently, the phoneme DB generation unit **60** records voice reading the example sentence (step S**116**) and analyzes the recorded voice (step S**119**). For example, voice information read by a person who takes charge of the voice of an agent is collected by the microphone of the information processing terminal. Then, the phoneme DB generation unit **60** receives and stores the voice information and further performs voice analysis.
[0096] Subsequently, the phoneme DB generation unit **60** generates a prosodic model on the basis of the voice information (step S**122**). The prosodic model extracts prosodic parameters indicating prosodic features of the voice (for example, a tone of the voice, strength of the voice, and a speech speed) and differs for each person.
[0097] Subsequently, the phoneme DB generation unit **60** generates a phoneme segment (phoneme data) on the basis of the voice information (step S**125**).
[0098] Subsequently, the phoneme DB generation unit **60** stores the prosodic model and the phoneme segment (step S**128**).
[0099] Subsequently, the phoneme DB generation unit **60** determines whether a predetermined number of the prosodic models and the phoneme segments are collected (step S**131**).
[0100] Then, in a case in which the predetermined number of prosodic models and phoneme segments are collected (Yes in step S**131**), the phoneme DB generation unit **60** registers the

prosodic models and the phoneme segments as a phoneme database for a predetermined agent in the phoneme storage unit **40** (step S**134**).

3-3. Dialogue Control Process

[0101] FIG. **7** is a flowchart illustrating a dialogue control process according to the embodiment. As illustrated in FIG. **7**, the voice agent I/F **20** first confirms whether question voice and an agent ID of a user are acquired (step S**143**). The agent ID is identification information indicating a specific agent such as the character A, the person B, or the person C. The user can purchase phoneme data of each agent. For example, an ID of the agent purchased in a purchase process is stored in the client terminal **1**.

[0102] Subsequently, when the question voice and the agent ID of the user are acquired (Yes in step S**146**), the voice agent I/F **20** converts the question voice into text through voice recognition (step S**149**). The voice agent I/F **20** outputs the question sentence converted into text to the dialogue processing unit of the specific agent designated with the agent ID. For example, in the case of "agent ID: agent A" the voice agent I/F **20** outputs the question sentence converted into text to the character A dialogue processing unit **32**.

[0103] Subsequently, the dialogue processing unit **30** retrieves a question sentence matching the question sentence converted into text from the conversation DB of the specific agent designated with the agent ID (step S**152**).

[0104] Subsequently, in a case in which there is a matching question (Yes in step S**155**), the character A dialogue processing unit **32** acquires answer sentence data corresponding to (paired with and stored) the question from the conversation DB of the specific agent (step S**158**).

[0105] Conversely, in a case in which there is no matching question (No in step S**155**), a question sentence matching the question sentence converted into text is retrieved from the conversation DB of the basic dialogue processing unit **31** (step S**161**).

[0106] In a case in which there is a matching question sentence (Yes in step S**161**), the basic dialogue processing unit **31** acquires the answer sentence data corresponding to (paired with and stored) the question from the conversation DB of the basic dialogue processing unit **31** (step S**167**).

[0107] Conversely, in a case in which there is no matching question (No in step S**164**), the basic dialogue processing unit **31** acquires answer sentence data (for example, an answer sentence "I don't understand the question") in a case in which there is no matching question sentence (step S**170**).

[0108] Subsequently, the character A dialogue processing unit **32** acquires phoneme data of the character A for generating voice of the answer sentence data with reference to the phoneme DB (herein, the character A phoneme DB **42**) of the specific agent designated with the agent ID (step S**173**).

[0109] Subsequently, the acquired phoneme data and answer sentence data are output to the voice agent I/F **20** (step S**176**).

[0110] Then, the voice agent I/F **20** vocalizes the answer sentence data (text) (voice synthesis) using the phoneme data and transmits the answer sentence data to the client terminal **1** (step S**179**). The client terminal **1** reproduces the answer sentence through the voice of the character A.

3-4. Conversation DB Updating Process

[0111] Next, a process of updating the conversation DB **330** of each dialogue processing unit **300** will be described. In the embodiment, it is possible to extend the conversation DB **330** by a conversation with a user.

[0112] First, a data configuration example of the conversation DB **330** will be described supplementarily with reference to FIG. **8**. FIG. **8** is an explanatory diagram illustrating a data configuration example of the conversation DB **330** according to the embodiment. As illustrated in FIG. **8**, each conversation DB **330** includes two layers, an individualized layer **331** and a common layer **332**. For example, in the case of a character A conversation DB **330**A, conversation data in which personality or a feature of the character A is reflected is retained in the common layer **332**A.

On the other hand, in an individualized layer **331**A, conversation data customized only for a user through a conversation with the user is retained. That is, the character A phoneme DB **42** and the character A dialogue processing unit **32** are supplied (sold) as a set to users. Then, certain users X and Y perform dialogues with the same character A at first (conversation data retained in the common layer **332**A is used). However, as the dialogues continue, conversation data customized only for each user is accumulated in the individualized layer **331**A for each user. In this way, it is possible to supply the users X and Y with dialogues with the character A in accordance with preferences of the users X and Y.

[0113] In addition, even in a case in which the agent "person B" is an average person of each generation who has no specific personality such as the character A, the conversation data can be customized only for the user. That is, for example, in a case in which the "person B" is a "person in his or her twenties," average conversation data of his or her twenties is retained in the common layer **332**B and dialogue with the user is continued so that the customized conversation data is retained in the individualized layer **331**B of each user. As dialogues with the user continue, customized conversation data is retained in the individualized layer **331**B for each user. In addition, the user can also select favorite phoneme data such as "male," "female," "high-tone voice," or "low-tone voice" as the voice of the person B from the person B phoneme DB **43** and can purchase the favorite phoneme data.

[0114] A specific process at the time of the customization of the conversation DB **330** will be described with reference to FIG. **9**. FIG. **9** is a flowchart illustrating a process of updating the conversation DB **330** according to the embodiment.

[0115] As illustrated in FIG. **9**, the voice agent I/F **20** first acquires (receives) question voice of the user from the client terminal **1** and converts the question voice into text through voice recognition (step S**183**). The data (question sentence data) converted into text is output to the dialogue processing unit (herein, for example, the character A dialogue processing unit **32**) of the specific agent designated by the agent ID.

[0116] Subsequently, the character A dialogue processing unit **32** determines whether the question sentence data is a predetermined command (step S**186**).

[0117] Subsequently, in a case in which the question sentence data is the predetermined command (Yes in step S**186**), the character A dialogue processing unit **32** registers answer sentence data designated by the user as a pair with the question sentence data in the individualized layer **331**A of the conversation DB **330**A (step S**189**). The predetermined command may be, for example, a word "NG" or "Setting." For example, the conversation DB of the character A can be customized in accordance with a flow of the following conversation. [0118] User: "Good morning" [0119] Character A: "Good morning" [0120] User: "NG. Answer to fine do your best" [0121] Character A: "Fine do your best"

[0122] In the flow of the foregoing conversation, "NG" is the predetermined command. After "NG" is spoken by the user, the character A dialogue processing unit **32** registers answer sentence data "Fine do your best" designated by the user as a pair with the question sentence data "Good morning" in the individualized layer **331**A of the conversation DB **330**A.

[0123] Conversely, in a case in which the question sentence data is not the predetermined command (No in step S**186**), the character A dialogue processing unit **32** retrieves the answer sentence data retained as the pair with the question sentence data from the character A conversation DB **330**A. In a case in which the answer sentence data retained as the pair with the question sentence data is not retained in the character A conversation DB **330**A, that is, a question of the user is a question with no answer sentence (Yes in step S**192**), the character A dialogue processing unit **32** registers the answer sentence data designated by the user as a pair with the question sentence in the individualized layer **331**A (step S**195**). For example, in a flow of the following conversation, the conversation DB of the character A can be customized. [0124] User A: "Fine?" [0125] Character A: "I can't understand the question" (answer data example in case in which there is no corresponding

answer) [0126] User: “When I questions “Fine?,” answer to “Fine today”” [0127] Character A: “Fine today”

[0128] In the flow of the foregoing conversation, since there is no answer sentence data maintained to be paired with “Fine?,” “I can't understand the question” which is an example of the answer data in the case in which there is no corresponding answer is acquired by the character A dialogue processing unit **32**, is output along with corresponding phoneme data of the character A to the voice agent I/F **20**, and is reproduced in the client terminal **1**. Subsequently, when the answer sentence “Fine today” designated by the user is input, the character A dialogue processing unit **32** registers “Fine today” as the pair with the question sentence data “Fine?” in the individualized layer **331**A.

[0129] Conversely, in a case in which the question of the user is a question for which there is an answer sentence (No in step S**192**), the character A dialogue processing unit **32** acquires the answer sentence data and outputs the answer sentence data along with the corresponding phoneme data of the character A to the voice agent I/F **20**. Then, the answer sentence is reproduced through the voice of the character A in the client terminal **1** (step S**198**).

[0130] Next, conversation data transition from an individualized layer to a common layer will be described with reference to FIG. **10**. FIG. **10** is a flowchart illustrating conversation data transition process from an individualized layer to a common layer according to the embodiment. Herein, for example, the conversation data transition process from the individualized layer **331**A to the common layer **332**A of the character A dialogue processing unit **32** will be described.

[0131] As illustrated in FIG. **10**, the character A dialogue processing unit **32** first searches the individualized layer **331**A for each user periodically (step S**203**) and extracts conversation pairs with substantially the same content (the pair of question sentence data and answer sentence data) (step S**206**). For the conversation pairs with the substantially same content, for example, a pair of question sentence “Fine?” and answer sentence “Fine today!” and a pair of question sentence “Are you fine?” and answer sentence “Fine today!” can be determined to be the conversation pairs with substantially the same content because the question sentences are different only in a polite expression or not.

[0132] Subsequently, when a predetermined number or more of conversation pairs are extracted from the individualized layer **331**A for each user (Yes in step S**209**), the character A dialogue processing unit **32** registers the conversation pairs in the common layer **332**A (for each user) (step S**212**).

[0133] In this way, when the conversation pairs with substantially the same content in the individualized layer **331** for each user transition to the common layer **332**, the common layer **332** can be extended (the conversation pairs can be expanded).

[0134] In addition, in the embodiment, the conversation data can transition from the conversation DB (specifically, the common layer) of the specific agent to the basic dialogue conversation DB, and thus the basic dialogue conversation DB can also be extended. FIG. **11** is an explanatory diagram illustrating transition of conversation data to the basic dialogue conversation DB **330**F according to the embodiment. For example, in a case in which the users X and Y each select (purchase) the agent “character A” and a user Z selects (purchases) the agent “person B,” as illustrated in FIG. **11**, a character A conversation DB **330**A-X of the user X, a character A conversation DB **330**A-Y of the user Y, and a person B conversation DB **330**-Z of the user Z can be in the dialogue processing unit **30**. In this case, in individualized layers **331**A-X, **331**A-Y, and **331**B-Z, unique (customized) conversation pairs are gradually registered in accordance with dialogues with the users X, Y, and Z (see FIG. **9**). Subsequently, when substantially the same conversation pairs in the same individualized layers **331**A-X and **331**A-Y become a predetermined number, substantially the same conversation pairs are registered in common layers **332**A-X, **332**A-Y for the users, respectively (see FIG. **10**).

[0135] Then, in a case in which a predetermined number or more of substantially same conversation pairs are extracted from the common layers **332**A-X, **332**A-Y, and **332**B-Z of the

plurality of agents (which may include different agents), the dialogue processing unit **30** causes the conversation pairs to transition to a high-order basic dialogue conversation DB **330**F. The basic dialogue conversation DB **330**F is a conversation DB included in the basic dialogue processing unit **31**. Thus, it is possible to extend the basic dialogue conversation DB **330**F (expand the conversation pairs). The data transition process will be described specifically with reference to FIG. **12**. FIG. **12** is a flowchart illustrating the conversation data transition process to the basic dialogue DB **330**F according to the embodiment.

[0136] As illustrated in FIG. **12**, the dialogue processing unit **30** first searches the plurality of common layers **332** of the conversation DBs **330** periodically (step S**223**) and extracts substantially the same conversation pairs (step S**226**).

[0137] Subsequently, when the predetermined number or more of substantially same conversation pairs are extracted from the plurality of common layers **332** (Yes in step S**229**), the dialogue processing unit **30** registers the conversation pairs in the basic dialogue conversation DB **330**F (step S**232**).

[0138] In this way, by causing the conversation pairs with substantially the same content in the common layers **332** of the conversation DBs **330** in the plurality of agents to transition to the basic dialogue conversation DB **330**F, it is possible to extend the basic dialogue conversation DB **330**F (expand the conversation pairs).

3-5. Advertisement Output Process

[0139] Next, an advertisement information insertion process by the advertisement insertion processing unit **70** will be described with reference to FIGS. **13** and **14**. In the embodiment, the advertisement insertion processing unit **70** can insert advertisement information stored in the advertisement DB **72** into speech of an agent. The advertisement information can be registered in advance in the advertisement DB **72**. FIG. **13** is a diagram illustrating an example of advertisement information registered in the advertisement DB **72** according to the embodiment.

[0140] As illustrated in FIG. **13**, advertisement information **621** includes, for example, an agent ID, a question sentence, advertisement content, a condition, and a probability. The agent ID designates an agent speaking advertisement content, the question sentence designates a question sentence of a user which serves as a trigger and into which advertisement content is inserted, and the advertisement content is an advertisement sentence inserted into dialogue of an agent. In addition, the condition is a condition on which advertisement content is inserted and the probability indicates a probability at which advertisement content is inserted. For example, in an example illustrated in the first row of FIG. **13**, in a case in which a word “chocolate” is included in a question sentence from a user who is 30 years old or less in dialogue with the agent “character A,” advertisement content “chocolate newly released by “BB company is delicious because milk is contained much” is inserted into the question sentence. In addition, when the advertisement content is inserted every time at the time of speaking the question sentence serving as a trigger, the user feels troublesome. Therefore, in the embodiment, a probability at which the advertisement is inserted may be set. The probability may be decided in accordance with advertisement charges. For example, the probability is set to be higher as the advertisement charges are higher.

[0141] The advertisement content insertion process will be described specifically with reference to FIG. **14**. FIG. **14** is a flowchart illustrating the advertisement content insertion process according to the embodiment.

[0142] As illustrated in FIG. **14**, the advertisement insertion processing unit **70** first monitors dialogue (specifically, a dialogue process by the dialogue processing unit **30**) between the user and the agent (step S**243**).

[0143] Subsequently, the advertisement insertion processing unit **70** determines whether a question sentence with the same content as a question sentence registered in the advertisement DB **72** appears in the dialogue between the user and the agent (step S**246**).

[0144] Subsequently, in a case in which the question sentence with the same content appears (Yes

in step S**246**), the advertisement insertion processing unit **70** confirms the condition and the probability of the advertisement insertion associated with the corresponding question sentence (step S**249**).
[0145] Subsequently, the advertisement insertion processing unit **70** determines whether a current state is an advertising state on the basis of the condition and the probability (step S**252**).
[0146] Subsequently, in a case in which the current state is the advertising state (Yes in step S**252**), the advertisement insertion processing unit **70** temporarily interrupts the dialogue process by the dialogue processing unit **30** (step S**255**) and inserts the advertisement content into the dialogue (step S**258**). Specifically, for example, the advertisement content is inserted into an answer sentence of the agent for the question sentence of the user.
[0147] Then, the dialogue (conversation sentence data) including the advertisement content is output from the dialogue processing unit **30** to the voice agent I/F **20**, is transmitted from the voice agent I/F **20** to the client terminal **1**, and is reproduced through voice of the agent (step S**261**). Specifically, for example, the advertisement content can be presented as a speech of the character A to the user, for example, in the following conversation. [0148] User: “Good morning” [0149] Character A: “Good morning!How are you doing today?” [0150] User: “Fine. I want to eat some delicious food” [0151] Character A: “I heard that grilled meat at CC store is delicious”
[0152] In the conversation, the corresponding answer sentence “Good morning!How are you doing today?” retrieved from the conversation DB of the character A is first output as voice in response to the question sentence “Good Morning” of the user. Subsequently, since the question sentence “I want to eat some delicious food” serving as the trigger of the advertisement insertion is included in the question sentence “Fine. I want to eat some delicious food” of the user (see second row of FIG. **13**), the advertisement insertion processing unit **70** performs the advertisement insertion process and outputs the answer sentence with the advertisement content “I heard that grilled meat at CC store is delicious” through the voice of the character A.
[0153] The conversation data registration process, the phoneme DB generation process, the dialogue control process, the conversation DB updating process, and the advertisement insertion process have been described above as the basic operation processes of the communication control system according to the embodiment.
(Supplement)
[0154] Note that the configuration of the dialogue processing unit **300** according to the embodiment is not limited to the example illustrated in FIG. **4**. FIG. **15** is a diagram illustrating a configuration of a dialogue processing unit **300**′ according to an application example of the embodiment. As illustrated in FIG. **15**, the dialogue processing unit **300**′ is different from the configuration example illustrated in FIG. **4** in that a language analysis unit **311** is further included. The language analysis unit **311** performs language analysis of question sentence data of the user converted into text through the voice agent I/F **20** to analyze a command. The answer sentence generation unit **320** generates answer sentence data in accordance with the command analyzed by the language analysis unit **311**. In addition, in response to the command analyzed by the language analysis unit **311**, the dialogue processing unit **300**′ controls each configuration of the agent server **2** such that a process in accordance with the command is performed. For example, in the case of a command to transmit a message, the dialogue processing unit **300**′ generates answer sentence data in response to a request for transmitting a message from the user and further outputs the message to be transmitted to a predetermined destination to the voice agent I/F in accordance with a messenger function performed by a message transmission and reception control unit **701** to be described below.
[0155] In addition, the advertisement insertion process according to the embodiment is not limited to the above-described example. The advertisement insertion processing unit **70** according to the embodiment can arouse a potential request of the user and present more effective advertisement information. Hereinafter, the advertisement insertion process will be described specifically with

reference to FIGS. **16** to **23**.

4. ADVERTISEMENT INSERTION PROCESS

4-1. Configuration

[0156] FIG. **16** is a diagram illustrating an example of a configuration of the advertisement insertion processing unit **70** according to the embodiment. As illustrated in FIG. **16**, the advertisement insertion processing unit **70** includes a message transmission and reception control unit **701**, a browsing history acquisition unit **702**, a posting history acquisition unit **703**, a schedule management unit **704**, a social graph analysis unit **705**, a language analysis unit **706**, a potential customer extraction unit **707**, an advertisement matching unit **708**, an advertisement information output control unit **709**, a user information DB **720**, a schedule DB **721**, a social graph DB **722**, a potential customer DB **723**, and an advertisement progress status DB **724**.

[0157] The message transmission and reception control unit **701** realizes the messenger function and controls transmission and reception of a message between the client terminal **1** of the user and another device (for example, the client terminal **1** of another user). The message transmission and reception control unit **701** requests the dialogue processing unit **30** to give a response of the agent related to transmission and reception of the message, and answer voice related to the transmission and reception of the message is generated by the agent designated by the user in the dialogue processing unit **30** and the voice agent I/F and is reproduced in the client terminal **1**. Control of the transmission and reception of the message will be described with reference to FIGS. **17** and **18**.

[0158] The browsing history acquisition unit **702** acquires a browsing history of the Internet. For example, when the user requests the agent to browse the Internet with the client terminal **1**, dialogue with the agent is controlled by the agent server **2**. The browsing history acquisition unit **702** can monitor the dialogue processing unit **30** and acquire the browsing history of the Internet of the user.

[0159] The posting history acquisition unit **703** acquires a posting history of an image, voice, and text of the user on the Internet. For example, when the user performs posting (posting on SNS or the like) on the Internet with the client terminal **1** by giving a request to the agent, the dialogue with the agent is controlled by the agent server **2**. The posting history acquisition unit **703** can monitor the dialogue processing unit **30** and acquire the posting history of the user on the Internet. Note that the posting history acquisition unit **703** can also access an SNS server and acquire the posting history.

[0160] The schedule management unit **704** manages schedule information of the user. Schedule information of each user is stored in the schedule DB **721**. For example, when the user requests the agent to register and confirm a schedule with the client terminal **1**, the dialogue with the agent is controlled by the agent server **2**. The schedule management unit **704** manages the schedule of the user on the basis of the registration request or the confirming request for the schedule output from the dialogue processing unit **30**.

[0161] Note that the message transmission and reception control unit **701**, the browsing history acquisition unit **702**, the posting history acquisition unit **703**, the schedule management unit **704**, and the schedule DB **721** described above may each be realized by an external independent server system.

[0162] The user information DB **720** extracts and accumulates user information (the use situation of the service or the client terminal of the user) such as the transmission and reception of the message by the user, the Internet browsing history of the user, the posting history of the user, and the schedule information of the user from the message transmission and reception control unit **701**, the browsing history acquisition unit **702**, the posting history acquisition unit **703**, and the schedule DB **721**. The user information can be accumulated daily.

[0163] The social graph analysis unit **705** analyzes an interaction relation of the user on the basis of the user information accumulated in the user information DB **720** and stores an analysis result (a social graph) in the social graph DB **722**.

[0164] The language analysis unit **706** analyzes language analysis of the posting content and the message transmitted and received by the user from the user information DB **720** and analyzes preferences of the users.
[0165] The potential customer extraction unit **707** extracts potential customers (determines whether the users are the potential customers) on the basis of the preferences of the users analyzed through the language analysis by the language analysis unit **706**. Then, the potential customer extraction unit **707** stores the information regarding the extracted potential customer in the potential customer DB **723**.
[0166] The advertisement matching unit **708** performs matching of the potential customer information retained in the potential customer DB **723** with the advertisement information stored in the advertisement DB **72** and decides an advertisement to be presented to the potential customers. At this time, in a case in which usefulness of products is hit simultaneously by a plurality of users and goods gain popularity for the first time (for example, the goods are used in a group or joint purchase is set as a condition), the advertisement matching unit **708** can also confirm relation of the potential customers (whether there is interaction) with reference to the social graph DB **722** and perform matching of the plurality of potential customers with the advertisement information. In addition, the advertisement matching unit **708** registers a matching result in the advertisement progress status DB **724**.
[0167] The advertisement information output control unit **709** performs control such that the advertisement information matched by the advertisement matching unit **708** is presented to the user. At this time, the advertisement information output control unit **709** first requests the dialogue processing unit **30** to reproduce a guidance message for arousing interest in the matched advertisement information as a speech of the agent through voice of the user with the client terminal **1**. The advertisement information output control unit **709** updates a status of the advertisement progress status DB **724** in a case in which the guidance message is produced. Thereafter, the advertisement information output control unit **709** requests the dialogue processing unit **30** to present the advertisement information to the user through the voice of the agent at an appropriate timing. In this way, in the embodiment, since the guidance message is inserted into the dialogues of the agents of the potential customers of the advertised product and interest of the user in the advertised product is aroused, it is assumed that a hit rate of the advertisement can be raised by inserting the advertisement information into the dialogues of the agents for presentation. In addition, the advertisement information output control unit **709** updates the status of the advertisement progress status DB **724** even in a case in which the advertisement information is sent.
[0168] The configuration of the advertisement insertion processing unit **70** according to the embodiment has been described specifically above. Next, an operation process according to the embodiment will be described specifically with reference to FIGS. **17** to **23**.

4-2. Operation Process

(4-2-1. Message Transmission and Reception Process)

[0169] FIG. **17** is a flowchart illustrating a message transmission process according to the embodiment. The message transmission process is performed through the dialogue processing unit **30** by the message transmission and reception control unit **701**. The dialogue processing unit **30** controls dialogue of the agent such that transmission and reception of a message is assisted under the control of the message transmission and reception control unit **701**.
[0170] Specifically, as illustrated in FIG. **17**, the voice agent I/F **20** of the agent server **2** first receives a spoken voice of the user X (for example, a message to the user Y) from the client terminal **1** of the user X (hereinafter referred to as a client terminal **1***x*) (step S**303**).
[0171] Subsequently, the voice agent I/F **20** performs the voice recognition to convert a spoken voice (question sentence data) of the user X into text (step S**306**).
[0172] Subsequently, the voice agent I/F **20** outputs the question sentence data converted into text

to the dialogue processing unit (for example, the character A dialogue processing unit **32**) of the specific agent designated with the agent ID and the language analysis unit **311** of the dialogue processing unit **32** performs language analysis (command analysis: generation of the message) (step S**309**).

[0173] Subsequently, the answer sentence generation unit **320** generates an answer sentence data (for example, "A message to the user Y is generated.") in response to the command (step S**312**).

[0174] Subsequently, the phoneme data acquisition unit **340** acquires the phoneme data of the specific agent (for example, the character A) for vocalizing the answer sentence data) and outputs the phoneme data and the answer sentence data to the voice agent I/F **20** (step S**315**). The voice agent I/F **20** vocalizes the answer sentence data and transmits the answer sentence data to the client terminal **1***x*, and the answer sentence data is reproduced through the voice of the specific agent in the client terminal **1***x*.

[0175] Subsequently, the voice agent I/F **20** receives a transmission message voice (for example, "I really enjoyed myself today. Transmit.") input to the client terminal **1***x* by the user X from the client terminal **1***x* (step S**318**).

[0176] Subsequently, the voice agent I/F **20** performs voice recognition on the voice (the question sentence data) of the user X received from the client terminal **1***x* (converts voice into text) (step S**321**). The question sentence data converted into text is output to the dialogue processing unit (for example, the character A dialogue processing unit **32**) of the specific agent.

[0177] Subsequently, the language analysis unit **311** performs language analysis (command analysis: transmission of the message) (step S**324**).

[0178] Subsequently, the answer sentence data (for example, "the message 'I really enjoyed myself today' is transmitted") in accordance with the command is generated (step S**327**).

[0179] Subsequently, the phoneme data of the specific agent (for example, the character A) for vocalizing the answer sentence data is acquired and the phoneme data and the answer sentence data are output to the voice agent I/F **20** (step S**330**). The voice agent I/F **20** vocalizes the answer sentence data and transmits the answer sentence data to the client terminal **1***x*, and the answer sentence data is reproduced through the voice of the specific agent in the client terminal **1***x*.

[0180] Subsequently, the voice agent I/F **20** transmits the message (for example, "I really enjoyed myself today") converted into text and destined for the user Y to the client terminal **1** of the user Y (hereinafter referred to as a client terminal **1***y*) under the control of the message transmission and reception control unit **701** (step S**333**).

[0181] Next, an operation process in a case in which a message is received will be described with reference to FIG. **18**. FIG. **18** is a flowchart illustrating a message reception process according to the embodiment.

[0182] As illustrated in FIG. **18**, the client terminal **1***y* of the user Y first receives a message from the user X via the agent server **2** (step S**343**). At this time, the message may be displayed on the client terminal **1***y* on a text basis. When the message is reproduced in a dialogue format of the agent, the following process is performed in the agent server **2**.

[0183] Specifically, the answer sentence generation unit **320** of the dialogue processing unit (for example, the character A dialogue processing unit **32**) of the agent ID designated by the user Y in the agent server **2** generates answer sentence data (for example, "A message has arrived from the user X") for notifying that the message is transmitted from the user X (step S**346**).

[0184] Subsequently, the answer sentence data is output along with the phoneme data of the specific agent from the dialogue processing unit **30** to the voice agent I/F **20** (step S**349**). The voice agent I/F **20** vocalizes the answer sentence data using the phoneme data of the specific agent and transmits the answer sentence data to the client terminal **1***y*. In the client terminal **1***y*, "A message has arrived from the user X" is reproduced through the voice of the specific agent.

[0185] Subsequently, the voice agent I/F **20** of the agent server **2** receives the spoken voice (for example, "Read the message") of the user Y from the client terminal **1***y* (step S**352**).

[0186] Subsequently, the voice agent I/F **20** converts the spoken voice (the question sentence data) of the user Y into text through the voice recognition and outputs the spoken voice to the dialogue processing unit **30** (step S**355**).
[0187] Subsequently, the language analysis unit **311** of the dialogue processing unit (herein, the character A dialogue processing unit **32**) of the specific agent performs the language analysis (command analysis: reading of the message) on the question sentence data converted into text (step S**358**).
[0188] Subsequently, the answer sentence generation unit **320** generates the answer sentence data (for example, “I will read the message. “I really enjoyed myself today””) in accordance with the analyzed command (step S**361**).
[0189] Subsequently, the generated answer sentence data is output along with the phoneme data of the specific agent to the voice agent I/F **20** (step S**364**). The voice agent I/F **20** vocalizes the answer sentence data and transmits the amasser sentence data to the client terminal **1***y*, and the answer sentence data is reproduced through the voice of the specific agent in the client terminal **1***y*.
[0190] The above-described message transmission and reception process can be controlled by the message transmission and reception control unit **701** on the background and the content of the message can be stored in the user information DB **720**.
(4-2-2. Process of Extracting Potential Customers)
[0191] Next, a process of extracting potential customers by the advertisement insertion processing unit **70** will be described with reference to FIGS. **19** and **20**. FIG. **19** is a flowchart illustrating a process of extracting potential customers based on transmitted and received messages.
[0192] As illustrated in FIG. **19**, when the message is received from a message designated from one user to another user (step S**373**), the message transmission and reception control unit **701** first transmits the message to the other user (step S**376**). The case in which the transmission and the reception of the message is realized by the dialogue of the specific agent (the control via the dialogue processing unit **30**) has been described above with reference to FIGS. **17** and **18**. In addition, the content of the transmitted and received message is registered in the user information DB **720**.
[0193] Subsequently, the social graph analysis unit **705** analyzes the transmission and reception history of the message registered in the user information DB **720** and recognizes that there is interaction between both the users who have exchanged the message (step S**379**).
[0194] Subsequently, the social graph analysis unit **705** stores the recognized interaction relation (analysis result) in the social graph DB **722**.
[0195] Subsequently, the language analysis unit **706** analyzes the message registered in the user information DB **720** and analyzes a preference of the user (step S**385**). Herein, the preference of the user includes a potential preference and vague desire can be ascertained. For example, in a message with a friend, the “vague desire” such as “I want to go somewhere,” “I want to eat delicious food,” “I want to see beautiful scenery,” or “I want to do something amusing” can be ascertained from a sentence indicating desires for which a designation or a behavior is not limited to one designation or behavior. For example, “vague desires” including various desires such as “I want to go a mountain,” “I want to go to an amusement park,” and “I want to go to Hawaii” can be determined from a sentence such as “I want to go somewhere.”
[0196] Subsequently, the potential customer extraction unit **707** extracts a user whose vague desire is ascertained by the language analysis unit **706** as a potential customer (step S**388**).
[0197] Subsequently, in a case in which the potential customer can be extracted (Yes in step S**392**), the potential customer extraction unit **707** registers information (including the “vague desire”) of the potential customer in the potential customer DB **723** (step S**395**).
[0198] The extraction of the potential customer according to the embodiment is not limited to the case based on the above-described message. The potential customer can be extracted on the basis of various kinds of user information such as a browsing history, a posting history, and schedule

information. Herein, extraction of a potential customer based on a posting history will be described with reference to FIG. **20**.

[0199] FIG. **20** is a flowchart illustrating a process of extracting potential customers based on a posting history according to the embodiment. As illustrated in FIG. **20**, the social graph analysis unit **705** first acquires the posting history from the user information DB **720** (step S**403**), performs the language analysis of the posting content (step S**406**), and extracts a user whose vague desire is ascertained as a potential customer (step S**409**).

[0200] Subsequently, in a case in which the potential customer can be extracted (Yes in step S**412**), the potential customer extraction unit **707** registers information (including the "vague desire") regarding the potential customer in the potential customer DB **723** (step S**415**).

[0201] The extraction of the potential customer based on the posting history has been described above. When the potential customer is extracted on the basis of the browsing history and a browsing destination is a web site including keywords such as "special trip report" and "I want to go somewhere," vague desire such as "I want to go" is ascertained on the basis of the browsing history acquired from the user information DB **720**. When the browsing destination is a web site including the keywords "special food report" and "I want to eat delicious food," vague desire such as "I want to eat" can be ascertained.

[0202] In addition, in the above-described embodiment, it is assumed that the transmission, reception history of the message or the posting history, and the like are stored in the user information DB **720**, but the embodiment is not limited thereto. The social graph analysis unit **705** may acquire various kinds of user information from other servers (a message history server, a posting history server, a schedule server, and the like) via the communication unit of the agent server **2**.

(4-2-3. Advertisement Output Process)

[0203] Next, an advertisement output process will be described with reference to FIG. **21**. FIG. **21** is a flowchart illustrating the advertisement output process according to the embodiment.

[0204] As illustrated in FIG. **21**, the advertisement matching unit **708** first compares the "vague request of the potential customer" accumulated in the potential customer DB **723** with an advertisement type of the advertisement information stored in the advertisement DB **72** (step S**423**). Herein, an example of the advertisement information stored in the advertisement DB **72** is shown in the following Table 1.

TABLE-US-00001 TABLE 1 Adver- Number tisement Advertisement of Good-value Goods ID Name type people reason Target content 1 Okinawa Trip 2 or A tip to Friend Okinawa eating Eating spree more Okinawa is Family trip spree inexpensive member trip now 2 Soft Seasonal 10 or Disposal of Unspecified Quilt down goods more excessive quilt stock 3 Hawaii Trip 2 or Occurrence Friend Hawaii trip more of Family trip cancellation member 4 Hair Seasonal 20 or Arrival of Unspecified Hair crab big goods more hair crab crab service Eating spree season 5 Piano Lesson 1 or Free Null Piano lesson more admission Lesson fee . . . . . .

[0205] The advertisement DB **72** is included in the agent server **2** in the example illustrated in FIG. **3**, but may also be an external independent server. In the advertisement DB **72**, a distributor or an advertiser of a company can register advertisement information via an information processing device. When an advertisement is registered, a name of an advertisement target product, an advertisement type, the number of target people, a reason why the goods are good, a target person, goods content, and the like are input. Herein, an advertisement in which agreement of a plurality of people is advantageous to an advertiser and customers of an advertisement target product is also included. For example, a group trip and a joint purchase are assumed. In the group trip, it is possible to go out for a trip at a low price when friends accompany. In the joint purchase, it is possible to buy products at a low price when an unspecified large number of people are attracted. In addition, the embodiment is not limited to a plurality of human targets and an advertisement targeting one or more people is also, of course, included.

[0206] The advertisement matching unit **708** compares the advertisement type included in the advertisement information with the "vague request of a potential customer" accumulated in the potential customer DB **723**. Herein, an example of a comparison table is shown in the following Table 2.

TABLE-US-00002 TABLE 2 Vague desire Advertisement type I want to go Trip I want to eat Eating spree I want to see Trip, Show I want to do Trip, Lesson Season, I want to buy Seasonal goods

[0207] As shown in the foregoing Table 2, for example, "I want to go" is compared with a trip, "I want to eat" is compared with eating spree, "I want to see" is compared with a trip, and "I want to do" is compared with an advertisement type such as a trip or a hobby. Note that, for example, the advertisement such as "Okinawa eating spree trip" is compared as a corresponding advertisement even when the vague desire is "I want to go" and "I want to eat."

[0208] Subsequently, in a case in which an advertisement corresponding to the vague desire of the potential customer is discovered through the comparison (Yes in step S**426**), the advertisement matching unit **708** associates the user ID of the potential customer and the advertisement ID and registers advertisement progress status=1 in the advertisement progress status DB **724** (step S**429**). For example, in a case in which the vague desire such as "I want to go somewhere" of the user X is registered, the advertisement matching unit **708** determines that Okinawa eating spree trip of the advertisement ID: 1 and Hawaii trip of the advertisement ID: 3 are corresponding advertisements because "advertisement type: trip" corresponds to the desire such as "I want to go somewhere" of the user X, and then registers advertisement progress status 1 in the advertisement progress status DB **724** by associating the advertisement ID with the ID of the user X. In addition, in a case in which the vague desire such as "I want to eat delicious food" of the user Y is registered, the advertisement matching unit **708** determines that Okinawa eating spree trip of the advertisement ID: 1 and Hair crab of the advertisement ID: 4 are corresponding advertisements because "advertisement type: food" corresponds to the desire, and then similarly registers the advertisement progress status 1 in the advertisement progress status DB **724**. The advertisement progress statuses registered in this way are shown in the following Table 3.

TABLE-US-00003 TABLE 3 User ID Advertisement ID Status X 1 1 X 3 1 Y 1 1 Y 4 1 . . . . . .

[0209] Herein, the meanings of the registered advertisement progress statuses are as follows:

[0210] status 1: a target is decided; [0211] status 2: the number of people is complete; [0212] status 3: guided; and [0213] status 4: an advertisement is delivered.

[0214] Subsequently, the advertisement matching unit **708** confirms whether a predetermined number of people of the advertisement target is gathered with reference to the advertisement progress status DB **724** (step S**432**). For example, in the example shown in the foregoing Table 3, in a case in which the user X and the user Y are both registered in Okinawa eating spree trip of the advertisement ID: 1 targeting two or more friends or family members and the social graph DB **722** can ascertain that both the users are in a friend relation with the social graph DB **722**, the advertisement matching unit **708** determines that the target person condition of the advertisement ID: 1 is satisfied.

[0215] Subsequently, in a case in which the number of people is complete (Yes in step S**432**), the advertisement matching unit **708** updates the advertisement progress status to "status 2; the number of people is complete" (step S**435**). The updated advertisement progress status is shown in the following Table 4. Thus, the user X and the user Y are considered to be targets of the advertisement target pair of the advertisement ID: 1.

TABLE-US-00004 TABLE 4 User ID Advertisement ID Status X 1 2 X 3 1 Y 1 2 Y 4 1 . . . . . .

[0216] Subsequently, in a case in which "status 2" is registered with reference to the advertisement progress status DB **724**, the advertisement information output control unit **709** performs control such that a guidance message is output to the target person (step S**438**). In a case in which the guidance message is output, the advertisement progress status is updated to "status 3: guided" (step

S**441**).
[0217] For example, the advertisement information output control unit **709** may generate the guidance message using "Good-value reason" included in the advertisement information. For example, since the good-value reason of the advertisement ID: 1 is "A tip to Okinawa is inexpensive now," a guidance message "I heard that a tip to Okinawa is inexpensive now!" is generated and output to the dialogue processing unit **30**. The dialogue processing unit **30** acquires phoneme data of the specific agent of each user corresponding to this guidance message and outputs the phoneme data to the voice agent I/F **20**. The voice agent I/F **20** vocalizes the guidance message of each specific agent and transmits the guidance message to the client terminals **1***x* and **1***y*. In the client terminals **1***x* and **1***y*, "I heard that a tip to Okinawa is inexpensive now!" is spoken through the voice of each specific agent and interest in Okinawa is aroused. At this time point, both the users have not yet receive the advertisement information, but obtain the knowledge indicating that a tip to Okinawa is inexpensive now.
[0218] Subsequently, the advertisement information output control unit **709** outputs the advertisement at a predetermined timing (step S**444**) and updates the advertisement progress status to "status 4: an advertisement is delivered" (step S**447**). The predetermined timing may also be, for example, one day after from the output of the guidance message. As the guidance message, the advertisement is vocalized through the voice of the specific agent through the dialogue processing unit **30** through the voice agent I/F **20** to be reproduced in each client terminal **1**.
[0219] Then, the advertisement information output control unit **709** may further output a reminder message (step S**429**). For example, in a case in which the user X who has interest in Okinawa because of the guidance message by the agent shows interest in Okinawa eating spree suggested later from the agent and tabs and browses a link of the advertisement displayed on the client terminal **1***x*, the paired user B is notified of a reminder message "the user X also has interest in "Okinawa eating spree trip" introduced some time ago!." Thus, the interest of the user Y can be further aroused. Note that in a case in which the user Y tabs and browses the link of the advertisement, the advertisement information output control unit **709** may notify the user X that the user Y shows the interest. Thus, the user X and the user Y who are friends originally have different vague desires "I want to go" and "I want to eat," but the users are known to have the interest in the same product (Okinawa eating spree trip) and the users are induced to keep in touch with each other and purchase the product.
[0220] The advertisement output process according to the embodiment has been described above. Note that the advertisement output process of the advertisement ID: 1 has been described in the above-described example. An advertisement output process of a joint purchase goods (advertisement ID: 2) targeting an unspecified large number of people (also including strangers) will also be described as an example.
[0221] For example, in a case in which it is ascertained that the user Z posts "I want shopping for winter" on SNS and has vague desire "I want to buy seasonal product," the advertisement matching unit **708** compares the advertisement information shown in the foregoing Table 1 and associates the advertisement ID: 2 "quilt" and the advertisement ID: 4 "hair crab" with each other. Here, it is assumed that for the advertisement ID: 4, the user Y has already been targeted and other 10 users are also targeted. An example of the advertisement statuses of this case is shown in the following Table 5.
TABLE-US-00005 TABLE 5 User ID Advertisement ID Status X 1 1 X 3 1 Y 1 1 Y 4 1 Z 2 1 Z 4 1 . . . . . .
[0222] In addition, the advertisement matching unit **708** ascertains that the user Y, the user Z, and the other 10 peoples (not shown) who are the targets of the advertisement ID: 4 are not stored as friends (that is, strangers) with reference to the social graph DB **722**. The advertisement matching unit **708** determines that a target person condition is satisfied since the target person condition of the advertisement ID: 4 is "the unspecified large number of peoples equal to or more than 10," and

thus updates the advertisement progress status to “status 2: the number of people is complete.”
[0223] Subsequently, the advertisement information output control unit **709** generates a guidance message using the good-value reason “Arrival of hair crab season” of the advertisement ID: 4 for the target person of the advertisement ID: 4 updated to “status 2” and notifies the target person of the guidance message. “Hair crab season arrives!” is spoken through the voice of each specific agent in the client terminal **1** of each target person and each user obtains the knowledge of the hair crab season. At this time, the advertisement progress status is updated to “status 3: guided.”
[0224] Then, for example, one day after from the notification of the guidance message, the advertisement information output control unit **709** notifies each user who is a target of the advertisement ID: 4 of the advertisement information of the advertisement ID: 4. In the client terminal **1** of each user, the advertisement information is read out by each specific agent. At this time, the advertisement progress status is updated to “status 4: an advertisement is delivered.”
[0225] Subsequently, in a case in which several people who have interest in the hair crab season by the previous guidance message among the users have interest in the notified advertisement and tab and browse a link of the advertisement, the advertisement information output control unit **709** notifies users who have not yet tab the link of the advertisement of a reminder message “Seven people have interest in the earlier advertisement!.” In this way, even in a case of the joint purchase targeted by the strangers, it is possible to prompt the purchase of the product by notifying the users of the number of people who show the interest using the reminder message.
(4-2-4. Advertisement Information Reception Process)
[0226] Next, an operation process by the client terminal **1** receiving the above-described advertisement information will be described with reference to FIG. **22**. FIG. **22** is a flowchart illustrating an advertisement information reception process according to the embodiment.
[0227] As illustrated in FIG. **22**, the client terminal **1** receives the advertisement information from the agent server **2** (step S**463**). Herein, for example, the advertisement information (text data) and the phoneme data (the phoneme data of the specific agent) are assumed to be received.
[0228] Subsequently, the client terminal **1** vocalizes the received advertisement information using the phone data through the voice of the specific agent (generates an advertisement voice) (step S**466**) and reproduces the advertisement voice from the speaker of the client terminal **1** (step S**469**). Note that the client terminal **1** can also receive the advertisement voice vocalized through the voice agent I/F **20** and reproduce the advertisement voice from the speaker without change.
Guidance/Reminder Message Reception Process)
[0229] Next, an operation process by the client terminal **1** receiving the above-described guidance/reminder message will be described with reference to FIG. **22**. FIG. **23** is a flowchart illustrating a guidance/reminder message reception process according to the embodiment.
[0230] As illustrated in FIG. **23**, the client terminal **1** receives the guidance/reminder message from the agent server **2** (step S**473**). Herein, for example, the guidance/reminder message (text data) and the phoneme data (the phoneme data of the specific agent) are assumed to be received.
[0231] Subsequently, the client terminal **1** vocalizes the received guidance/reminder message using the phoneme data through the voice of the specific agent (generates a message voice) (step S**476**) and reproduces the guidance/reminder message from the speaker of the client terminal **1** (step S**479**). Note that the client terminal **1** can also receive the guidance/reminder message voice vocalized through the voice agent I/F **20** and reproduces the guidance/reminder message voice from the speaker without change.
5. CONCLUSION
[0232] As described above, in the communication control system according to the embodiment of the present disclosure, it is possible to arouse potential requests of users and present more effective advertisement information.
[0233] Thus, it is possible to extract potential customers from vague desires of the users and obtain the effective advertisement effect. In addition, with regard to use in a group or joint purchases,

target people can be effectively matched and a purchase hit rate can be raised.
[0234] The preferred embodiment(s) of the present disclosure has/have been described above with reference to the accompanying drawings, whilst the present disclosure is not limited to the above examples. A person skilled in the art may find various alterations and modifications within the scope of the appended claims, and it should be understood that they will naturally come under the technical scope of the present disclosure.
[0235] For example, it is possible to also generate a computer program causing hardware such as the CPU, the ROM, and the RAM contained in the client terminal **1** or the agent server **2** described above to realize the function of the client terminal **1** or the agent server **2**. In addition, a computer-readable storage medium that stores the computer program is also provided.
[0236] In addition, in the above-described embodiment, the configuration in which various functions are realized by the agent server **2** on the Internet has been described, but the embodiment is not limited thereto. At least a part of the configuration of the agent server **2** illustrated in FIG. **3** may be realized in the client terminal **1** (a smartphone, a wearable terminal, or the like) of the user. In addition, the whole configuration of the agent server **2** illustrated in FIG. **3** may be installed in the client terminal **1** so that the client terminal **1** can perform all the processes.
[0237] Further, the effects described in this specification are merely illustrative or exemplified effects, and are not limitative. That is, with or in the place of the above effects, the technology according to the present disclosure may achieve other effects that are clear to those skilled in the art from the description of this specification.
[0238] Additionally, the present technology may also be configured as below.
(1)
[0239] A communication system including: a communication unit configured to collect a use situation of a service or a client terminal of a user; and a control unit configured to analyze a preference in accordance with the use situation of the user collected via the communication unit, to transmit a guidance message for arousing interest in a specific product to a client terminal of the user via the communication unit such that the guidance message is output as speech of an agent of the client terminal when at least the one user is determined to be a potential customer of the product in accordance with an analysis result of the preference, and to perform control such that an advertisement for promoting the product is transmitted to the client terminal of the user via the communication unit and the advertisement is output as speech of the agent of the client terminal at a predetermined timing after the transmission of the guidance message.
(2)
[0240] The communication system according to (1), [0241] in which, when a plurality of users are determined to be potential customers of a specific product in accordance with an analysis result of preferences, the control unit transmits a guidance message for arousing interest in the product to client terminals of the plurality of users via the communication unit such that the guidance message is output as speech of agents of the client terminals, and [0242] the control unit performs control such that an advertisement for promoting the product is transmitted to the client terminals of the plurality of users via the communication unit at a predetermined timing after the transmission of the guidance message and the advertisement is output as the speech of the agents of the client terminals.
(3)
[0243] The communication system according to (2), [0244] in which, when a condition according to an attribute of the specific product is satisfied, the control unit performs control such that the guidance message is transmitted to the client terminals of the plurality of users via the communication unit.
(4)
[0245] The communication system according to (3), [0246] in which the specific product becomes purchasable when a certain number of customers or more are attracted.

(5)
[0247] The communication system according to any one of (2) to (4), [0248] in which the control unit estimates a social graph indicating a relation between users in accordance with the use situation of the service of the user, and [0249] when the plurality of users who are the potential customers of the specific product are determined to be acquaintances on a basis of the social graph, the control unit performs control such that the guidance message is transmitted to the client terminals of the plurality of users via the communication unit.
(6)
[0250] The communication system according to any one of (2) to (5), [0251] in which, when the number of the plurality of users who are the potential customers of the specific product reaches a target number of people, the control unit performs control such that the guidance message is transmitted to the client terminals of the plurality of users via the communication unit.
(7)
[0252] The communication system according to any one of (2) to (5), [0253] in which, after the control unit transmits the advertisement for promoting the product via the communication unit at a predetermined timing, the control unit performs control such that information indicating that an acquaintance is also expressing interest in the advertisement is transmitted to the client terminals of the plurality of users on a basis of a social graph indicating a relation between the users estimated in accordance with the use situation of the service of the user, and the information is output as speech of the agents of the client terminals.
(8)
[0254] The communication system according to any one of (2) to (7), [0255] in which, after the control unit transmits the advertisement for promoting the product via the communication unit at a predetermined timing, the control unit performs control such that information indicating a number of users expressing interest in the advertisement is transmitted to the client terminals of the plurality of users and the information is output as speech of the agents of the client terminals.
(9)
[0256] A communication control method including: by a processor, [0257] collecting a use situation of a service or a client terminal of a user via a communication unit; [0258] analyzing a preference in accordance with the use situation of the user collected via the communication unit; [0259] transmitting a guidance message for arousing interest in a specific product to a client terminal of the user via the communication unit such that the guidance message is output as speech of an agent of the client terminal when at least the one user is determined to be a potential customer of the product in accordance with an analysis result of the preference; and [0260] performing control such that an advertisement for promoting the product is transmitted to the client terminal of the user via the communication unit such that the advertisement is output as speech of the agent of the client terminal at a predetermined timing after the transmission of the guidance message.
REFERENCE SIGNS LIST
[0261] **1** client terminal [0262] **2** agent server [0263] **30** dialogue processing unit [0264] **300** dialogue processing unit [0265] **310** question sentence retrieval unit [0266] **320** answer sentence generation unit [0267] **330** conversation DB [0268] **340** phoneme data acquisition unit [0269] **31** basic dialogue processing unit [0270] **32** character A dialogue processing unit [0271] **33** person B dialogue processing unit [0272] **34** person C dialogue processing unit [0273] **40** phoneme storage unit [0274] **41** basic phoneme DB [0275] **42** character A phoneme DB [0276] **43** person B phoneme DB [0277] **44** person C phoneme DB [0278] **50** conversation DB generation unit [0279] **60** phoneme DB generation unit [0280] **70** advertisement insertion processing unit [0281] **701** message transmission and reception control unit [0282] **702** browsing history acquisition unit [0283] **703** posting history acquisition unit [0284] **704** schedule management unit [0285] **705** social graph analysis unit [0286] **706** language analysis unit [0287] **707** potential customer extraction unit **707** [0288] **708** advertisement matching unit [0289] **709** advertisement information output control

unit [0290] **720** user information DB [0291] **721** schedule DB [0292] **722** social graph DB [0293] **723** potential customer DB [0294] **724** advertisement progress status DB [0295] **72** advertisement DB [0296] **80** feedback acquisition processing unit [0297] **3** network [0298] **10** agent

Claims

1. An information processing system, comprising: processing circuitry configured to set a voice agent from a plurality of voice agents having different voices and personalities based on a selection input from a user, receive a first piece of text information converted from a speech input from the user, process the first piece of text information using language analysis to determine an interpretation of the first piece of text information, and transmit a second piece of text information for generating vocalized speech data based on the interpretation of the first piece of text information, user preferences, and a personality corresponding to the voice agent.
2. The information processing system according to claim 1, wherein the user preferences are generated based on analysis of messages associated with the user.
3. The information processing system according to claim 1, wherein the processing circuitry is further configured to insert a question sentence into a dialogue session to obtain feedback from the user.
4. The information processing system according to claim 1, wherein the processing circuitry is further configured to generate the vocalized speech data based on the second piece of text information.
5. The information processing system according to claim 1, wherein when the interpretation of the first piece of text information includes an identification of question sentence data, the second piece of text information includes answer data corresponding to the question sentence data.
6. The information processing system according to claim 1, wherein the processing circuitry is further configured to determine whether content of a dialogue session matches a question sentence stored in a storage.
7. The information processing system according to claim 6, wherein the processing circuitry is further configured to transmit answer sentence data stored in the storage and corresponding to the question sentence for generating the vocalized speech data.
8. The information processing system according to claim 1, wherein the processing circuitry is further configured to identify a command in the first piece of text information using the language analysis.
9. An information processing method, comprising: setting, by processing circuitry, a voice agent from a plurality of voice agents having different voices and personalities based on a selection input from a user; receiving, by the processing circuitry, a first piece of text information converted from a speech input from the user; processing, by the processing circuitry, the first piece of text information using language analysis to determine an interpretation of the first piece of text information; and transmitting, by the processing circuitry, a second piece of text information for generating vocalized speech data based on the interpretation of the first piece of text information, user preferences, and a personality corresponding to the voice agent.
10. The information processing method according to claim 9, further comprising generating the user preferences based on analysis of messages associated with the user.
11. The information processing method according to claim 9, further comprising inserting a question sentence into a dialogue session to obtain feedback from the user.
12. The information processing method according to claim 9, further comprising generating the vocalized speech data based on the second piece of text information.
13. The information processing method according to claim 9, wherein when the interpretation of the first piece of text information includes an identification of question sentence data, the second piece of text information includes answer data corresponding to the question sentence data.

14. The information processing method according to claim 9, further comprising determining whether content of a dialogue session matches a question sentence stored in a storage.
15. The information processing method according to claim 14, further comprising transmitting answer sentence data stored in the storage and corresponding to the question sentence for generating the vocalized speech data.
16. The information processing method according to claim 9, wherein the processing the first piece of text information includes identifying a command in the first piece of text information using the language analysis.
17. A non-transitory computer-readable storage medium storing a program which when executed by processing circuitry of an apparatus causes the apparatus to perform a method, the method comprising: setting a voice agent from a plurality of voice agents having different voices and personalities based on a selection input from a user; receiving a first piece of text information converted from a speech input from the user; processing the first piece of text information using language analysis to determine an interpretation of the first piece of text information; and transmitting a second piece of text information for generating vocalized speech data based on the interpretation of the first piece of text information, user preferences, and a personality corresponding to the voice agent.
18. The non-transitory computer-readable storage medium according to claim 17, wherein the user preferences are generated based on analysis of messages associated with the user.
19. The non-transitory computer-readable storage medium according to claim 17, wherein the method further comprises inserting a question sentence into a dialogue session to obtain feedback from the user.
20. The non-transitory computer-readable storage medium according to claim 17, wherein when the interpretation of the first piece of text information includes an identification of question sentence data, the second piece of text information includes answer data corresponding to the question sentence data.