SERVICE PROVIDING METHOD AND SERVICE PROVIDING SYSTEM

BACKGROUND OF THE INVENTION

Field of the Invention

[0001]

The present invention relates to a service providing method and service providing system for providing services such as business applications and information to a service receiver through a network using a portal website and the like.

[0002]

In detail, the service providing method and service providing system according to the present invention relates to a service providing method and service providing system in which a service provider gathers restaurants in the restaurant business, hotels in the lodging industry, movie theaters in the entertainment business and so on as service receivers to run portal websites, and provides a business support service (first service) related to the primary business of the service receivers by providing functions required by the service receivers, such as reservation functions (reservation services) and business systems (business SaaS).

[0003]

The configuration of the service providing system according to the present invention relates to a service providing system including a service provider (service provider device) providing

services to a service receiver (service receiver device) that users use (user terminals), and a service infrastructure provider (service infrastructure provider device) providing service infrastructures of functions required by the service provider device.

[0004]

The service providing method and service providing system according to the present invention further provides an additional service (second service) to the service provider, the service receiver or the user, based on the result of analyzing original information gathered and retained by the service receiver or the service provider and subjected to an anonymizing process.

[0005]

The definitions of the following terms used in the present specification are as follows.

"User": An individual, a group or a company using the present system, including a specified user (based on which a single individual, a single group or a single company can be specified) and an unspecified user (based on which an individual, a group or a company cannot be specified or can rarely be specified). The terminal or the like that the user uses in the present system is called a "user-side terminal". In the present invention, the term "individual" used with respect to a user can include a group and a company as the user.

"Service receiver": An entity receiving a primary business support service (first service) provided by the present system, and the device constituting the system disposed on the service receiver side is called a "service receiver device". The meaning of the term "disposed on the side" does not only refer to disposing the device within the service receiver. The same applies to the term "disposed on the side" in the following descriptions.

"Service provider": An entity providing a primary business support service (first service) according to the present system, and the device constituting the system disposed on the service provider side is called a "service provider device".

"Service infrastructure provider": An entity providing a service infrastructure to the service provider and/or the service receiver, which gathers information as needed from the service receiver device and/or the service provider device based on an agreement, processes the information, and provides the processed information to the service receiver side and/or the service provider side. The device constituting the system disposed on the service infrastructure provider side is called a "service infrastructure provider device".

"Primary business support service (first service)": A service for supporting the primary business such as a reservation function and a business SaaS that the service provider provides to the service receiver.

"Additional service (second service)": An additional service in which a processed information (anonymized user information and the like) obtained by processing original information of the user (including the information related to the service receiver or the service provider) gathered by the service receiver and/or the service provider is analyzed, and based on the analysis result, the additional service is provided to the service provider device.

"User information": A set of information related to a single or multiple users (individual, group or company), wherein the attribute of information constituting the user information includes an identifier, a sub-identifier and other information. The definitions of the terms identifier, sub-identifier and other information are based on their normally used definitions, and in short, their definitions are as follows.

"Identifier": Information capable of specifying a single user (individual, group, company) directly based thereon, which includes information such as name, address, date of birth, telephone number, and email address.

"Sub-identifier": Information that is not an identifier, but can lead to information capable of specifying a single user by being combined with other information.

"Other information": Other information related to the user. This information can include extremely high-secrecy information, or information that can be opened to the public.

"Secrecy processing (Masking or filtering)": A process performed to the user information so as to prevent high secrecy information from being opened to the public, and well-known methods can be used as the actual processing method.

"Anonymizing process": A process performed to information related to enabling specification of a user so that the data cannot be used to specify a single user based on that single data. An identifier anonymized by the anonymizing process is called an anonymized identifier. For example, an anonymized identifier can be obtained by representing an identifier via a random ID. In the present invention, the secrecy processing and the anonymizing process can be collectively called the anonymizing process.

"Processing of user information": A process performed to the user information including an anonymizing process in addition to a masking process and a filtering process.

“Execution instruction ID”: It is an ID issued in correspondence with an additional service (second service) that the service infrastructure provider provides to a service provider or a user. Further, it is an ID added to the original user information when the user having received the provided additional service (second service) performs action. In other words, the execution instruction ID is issued by the service infrastructure provider, and provided from the service infrastructure provider via the service provider to the user,

and when the user receives the additional service (second service) having the execution instruction ID added thereto and performs action, the ID is added to the original user information and provided together with the original user information from the user to the service receiver, the service provider, and then to the service infrastructure provider. Thus, the execution instruction ID goes around, for example, from the service infrastructure provider to the service provider, the user, the service receiver, the service provider and then back to the service infrastructure provider.

Description of the Related Art

[0006]

Recently, a service providing system is spreading widely for supporting the business of service receivers such as restaurants by providing a service infrastructure as an infrastructure of specific business services for a service provider providing the specific business services to the service receiver side using the Internet or Web, and providing business services based on the service infrastructure.

[0007]

Such a service providing system includes a service infrastructure provider device, a service provider device, a service receiver device and a user terminal device. The service infrastructure provider device is a system or device for providing to the service provider device a function (service)

based on the provided service infrastructure, such as a business system using a SaaS (Software as a Service) system. The service provider device is a system or device for receiving a business system (business SaaS) based on the service infrastructure provided by the service infrastructure provider device. The service provider system can further be a system or device for customizing the business system based on the requests from a service receiver (or directly from a user) and providing the same to the service receiver. The service receiver device is a device for providing the user information provided for example from the user to the service provider device-side. The user terminal device is, for example, a terminal that the user uses to enter his/her information and to provide the same to the service receiver device-side. The user terminal device can also be a device or the like capable of automatically gathering information from a portable terminal when the user holds his/her portable terminal over the device.

[0008]

For example, Patent Document 1 (Japanese Patent Application Laid-Open Publication No. 2009-93569) is aimed at reducing buried costs or loss of opportunities in changing an SaaS (software as a service) environment to an SI (system integration) environment in a business service started in an SaaS form, wherein when the service is shifted from the SaaS agent environment (company A) to the SI form environment (city

B), a service address list recording addresses of the business service is provided in the city B, and the addresses of the service address list are updated according to the shift of the business service. When business data accumulated in the company A is also shifted, data address lists recording addresses of the business data are provided in the company A and the city B, and the addresses of both the address lists are updated according to the shift of the business data. In the update of the addresses, the access method is changed so that the addresses are the same.

[0009]

Further, Non-patent Document 1 (http://www.meti.go.jp/policy/it_policy/daikoukai/igvp/contents/pdf/C-1.pdf) discloses an art titled "Technique for Anonymizing Personal Information", which teaches an anonymization technique for using gathered personal information as an asset of companies.

[Citation List]

[Patent Document]

[0010]

[Patent Document 1]

Japanese Patent Application Laid-Open Publication No. 2009-93569

[Non Patent Document]

[0011]

[Non Patent Document 1]

http://www.meti.go.jp/policy/it_policy/daikoukai/igvp/contents/pdf/C-1.pdf

[0012]

According to the above-described service providing system, the service infrastructure provider can support the business of service providers. Further, the service provider can support the business of service receivers. Using these business support systems, the business of the whole system can have improved efficiency, which leads to the improvement of business efficiency.

[0013]

However, since the service providing system according to the prior art includes an independent system of the service provider side and an independent system of the service receiver side, the relationship between the service infrastructure provider-side and the service provider-side is mutually a one-way relationship.

[0014]

In other words, the service infrastructure provider-side provides a business SaaS or SI (System Integration) of the service infrastructure to the service provider-side unidirectionally, and the service provider-side provides a service based on a service infrastructure provided from the service infrastructure provider to the service receiver-side unidirectionally.

[0015]

Further, the service provider-side manages the user information of specified users (individual users, group users and company users) acquired from the user of that service, that is, the service receiver-side, in a state capable of specifying a single individual beyond regulations such as agreements or laws related to the protection of personal information (Personal Information Protection Law), and the management is performed per service provider or service receiver so that the information is not leaked to the service infrastructure provider, other service provider-side or other service receivers. The user information stored in the service receiver-side includes original information of many unspecified users such as information regarding searches performed by users who did not perform user login, and this information is useful information for the service receiver and the service receiver for carrying out business, so that unnecessary leakage of such information must be prevented.

[0016]

Therefore, according to the prior art service providing system, regarding information gathered and obtained by the service receiver side or the service provider side, there are no considerations on the system for enabling the service infrastructure provider-side to arbitrarily acquire consumer information (information related to consuming action) gathered and obtained as user information of specified users by the

service receiver-side or the service provider-side, and there are no considerations on the system for using such user information to provide a service different from the reservation function or the business SaaS as a second service (service based on information related to user information obtained from specific users) for specified users to the service receiver-side.

[0017]

Non-patent document 1 discloses an anonymization technique for anonymizing the user information and providing the same to other entities, but the flow of information is only unidirectional.

SUMMARY OF THE INVENTION

[0018]

Therefore, the present invention aims at providing a service providing system capable of providing a service that differs from the primary business support service (first service) such as the reservation function or the business SaaS that the service provider primarily provides (a second service that differs from the first service, performed based on anonymized user information obtained by anonymizing the original user information of specified users and unspecified users) to the service provider-side or the service receiver-side.

[0019]

Further, the service providing system according to the present invention is a system capable of enabling a rightful managing entity of personal information to specify the individual of the anonymized user information based on the provided user information subjected to anonymizing process.

[0020]

In order to solve the above-mentioned problems, the present invention includes an information processing means for processing as anonymized user information the information such as identifiers and sub-identifiers which may directly lead to directly specifying a specified user out of the original user information of the service receiver or the specified user (including an unspecified user) utilizing the service provider device so that a specific user cannot be easily specified, an information analysis means for analyzing the anonymized user information, and a means for providing a second service to be provided targeting anonymized users and an advertising action instruction for anonymized users.

[0021]

The present invention includes the information processing means for processing the original user information of a specified user so that the information can be opened to the public, wherein the information processing means subjects information that cannot be opened to the public to filtering or masking so that the information can be subjected to information

analysis, and subjects an identifier capable of specifying a single specified user and a sub-identifier that cannot specify a single specified user when used alone but can lead to specifying a single specified user when combined with other information to anonymizing process, to create an anonymized user information based on which a single specified user cannot be specified.

[0022]

The information analysis means has an analysis processing unit for analyzing the anonymized user information. The analysis processing unit uses the anonymized user information, and if the anonymized user is an individual, analyzes the purchase history, the action history, the preference and so on of the anonymized user, and if the anonymized user is a group or a company, analyzes the product purchase history, the annual sales, the advertising expenses and the like of the anonymized user, so as to gather and analyze the information that may lead to sales promotion for specified users. Then, the analyzed result by the analysis unit (analyzed information) is output to a sales promotion support unit.

[0023]

In order to realize support of sales promotion to specified users based on the analysis of information such as sales history of the anonymized user, it is necessary to prepare and store a correspondence table showing the correspondence between specified users and anonymized users in some location. The

correspondence table storing the correspondence between specified users and anonymized users is stored and managed as extremely high-secrecy information.

[0024]

According to the present embodiment, a processing unit for performing filtering or masking and an identifier - sub-identifier processing unit are disposed on the service provider device-side, and the original user information of a specified user is subjected to processes such as anonymization on the service provider device-side. However, it is possible to dispose the processing unit on the service infrastructure provider-side, and to perform processing of the original user information on the service infrastructure provider device-side. In that case, an agreement from each user to enable personal information to be handled by the service infrastructure provider device-side is necessary. If this is possible, both the processing and information analyzing process of the original user information can be performed at the service infrastructure provider-side, but this processing of original user information can be performed prior to or after the analysis performed by the information analysis unit. When information is to be processed after the analysis, the analysis performed by the information analysis unit analyzes the non-anonymized user information (original user information itself).

[0025]

The device in which the means for performing filtering or masking is located in the location of the processing unit of user information is extremely important from the viewpoint of protecting sales secrets, and though it depends on various cases, it cannot be handled similarly as locating the means for performing the anonymizing process.

[0026]

The service infrastructure provider device has a product planning - sales promotion support unit as a means for performing an additional service action instruction, such as an advertising action instruction, for specified users as an example of the second services. The product planning - sales support unit directly provides to the service provider a service for providing analyzed information as a result of information analysis as a second service with respect to a specified user having been anonymized based on the above-mentioned analyzed result. At the same time, it provides an advertising action directly to an anonymized user, or outputs an advertising action instruction to the service provider. During this advertising action instruction, an execution instruction ID related to the second service is issued. The service provider device having received the advertising action instruction refers to the correspondence table between anonymized users and specified users, and performs a direct advertising action to a user corresponding to the anonymized user, or performs an

advertisement execution instruction to the service receiver-side (instruction to execute advertisement to a specified user).

[0027]

A service providing method according to the present invention provides an additional service as a second service using a service providing system composed of a service provider device of a plurality of service providers targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device; wherein the service providing method includes the following steps:

Step 1: an original user information gathering step of gathering user information of the plurality of specified users as original user information including an identifier, a sub-identifier and other information, and further having an execution instruction ID added thereto;

Step 2: a secrecy processing step of the original user information for subjecting information having high secrecy out of the original user information of the plurality of specified users having been gathered in the original user information gathering step to a masking process and/or a filtering process;

Step 3: an anonymizing process step of performing an anonymizing process to an identifier and a sub-identifier

included in the original user information subjected to the secrecy processing step so that a single user cannot be specified;

Step 4: a step of storing the information of the anonymized user having been subjected to the anonymizing process as anonymized user information;

Step 5: a step of storing a correspondence between the anonymized user and the specified user;

Step 6: an anonymized user information analysis step of analyzing an action characteristics of the anonymized user using the anonymized user information;

Step 7: an analyzed result output step of achieving an analyzed result through analysis of the action characteristics of the anonymized user using the anonymized user information;

Step 8: an action instruction step of outputting an action instruction with respect to a specified anonymized user based on the analyzed result achieved by the analyzed result output step, simultaneously as issuing the execution instruction ID;

Step 9: an analyzed result providing step of providing the analyzed result to the service provider device of the plurality of service providers;

Step 10: a step of executing the additional service as the second service with respect to a specified user corresponding to the anonymized user by referring to the already stored correspondence between the anonymized user and the specified

user when the action instruction is output with respect to the specified anonymized user;

Step 11: a step of detecting the execution instruction ID added to the original user information when the specified user executes the additional service, and measuring the utilization level of the analyzed result based on the ID.

[0028]

Actually, the service providing system according to the present invention has almost all processes executed by the service infrastructure provider device, wherein the service infrastructure provider device performs filtering or masking process, anonymizing process, storage of correspondence data between anonymized users and specified users, information analysis, and execution of a second service.

[0029]

Therefore, the service providing system according to the present invention has a service provider device of a service provider targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device; the service provider device including: a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means; the service

provider-side computing means including: an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user as original user information via the interface means, and having an execution instruction ID added thereto; and a communication execution processing unit for outputting the specified user information as original user information via the interface means to the service infrastructure provider device; the service provider-side storage means including: an original user information storage unit for recording the original user information of the plurality of specified users; the service infrastructure provider device including: a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means; the service infrastructure provider-side computing means including: an original user information gathering unit for gathering the original user information transmitted from the service provider device via the interface means; a secrecy processing unit for subjecting information having high secrecy out of the original user information to a masking process and/or a filtering process; an anonymizing process unit for converting an identifier and a sub-identifier of the specified user included in the secrecy-processed user information as an information of an anonymized user so that a

specified user cannot be specified; an information analysis unit for analyzing the anonymized user information; and an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an execution instruction of an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction with respect to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID; the service infrastructure provider-side storage means including: a secrecy-processed user information storage unit for storing the secrecy-processed user information; an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified user; and a data utilization level measurement unit for detecting the execution instruction ID added to the original user information when the specified user executes the additional service, and measuring the utilization level of the analyzed result by the user based on the detection of the ID; wherein the service infrastructure provider device executes an additional service as a second service with respect to the specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence

storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

[0030]

Further, the service providing system according to the present invention has a portion of the processes performed by the service provider device and other processes executed by the service infrastructure provider device, wherein the service provider performs the filtering or masking process, while the service infrastructure provider device performs anonymizing process, storage of correspondence data between the anonymized users and specified users, information analysis, and execution of the second service.

[0031]

Therefore, the service providing system according to the present invention has a service provider device of a plurality of service providers targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device; the service provider device including: a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means; the

service provider-side computing means including: an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user as original user information via the interface means, and further having an execution instruction ID added thereto; a secrecy processing unit for performing a masking process and/or a filtering process to information having high secrecy out of the specified user information; and an output unit for outputting the information subjected to the secrecy processing as execution instruction secrecy-processed user information via the interface means to the service infrastructure provider device; the service provider-side storage means including: an original user information storage unit for recording the original user information of the plurality of specified users; the service infrastructure provider device including: a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means; the service infrastructure provider-side computing means including: a secrecy-processed user information gathering unit for gathering the secrecy-processed user information transmitted from the service provider device via the interface means; an anonymizing process unit for converting an identifier and a sub-identifier of the specified user included in the secrecy-processed user

information as an information of an anonymized user so that a specified user cannot be specified; an information analysis unit for analyzing the anonymized user information; an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID; and a data utilization level measurement unit for detecting the execution instruction ID added to the original user information when the specified user executes the additional service, and measuring the utilization level of the analyzed result by the user based on the detection of the ID; wherein the service infrastructure provider-side storage means including: a secrecy-processed user information storage unit for storing the secrecy-processed user information provided via the interface means from the service provider device; an anonymized user information storage unit for storing the anonymized user information; and an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified user; wherein the service infrastructure provider device executes an additional service as a second service to a

specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

[0032]

Further, the service providing system according to the present invention has the major portion of the processes executed by the service provider device, and has other processes executed by the service infrastructure provider device, wherein the service provider executes the filtering and masking, the anonymizing process, and the storage of correspondence data between anonymized users and specified users, and the service infrastructure provider device performs information analysis and executes the second service.

[0033]

Therefore, the service providing system according to the present invention has a service provider device of a plurality of service providers targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the

service provider device; the service provider device including: a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means; the service provider-side computing means including: an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user as original user information via the interface means, and further having an execution instruction ID added thereto; a secrecy processing unit for performing a masking process and/or a filtering process to information having high secrecy out of the specified user information; an anonymizing process unit for converting an identifier and a sub-identifier of a specified user included in the secrecy-processed user information as an anonymized user information so that a specified user cannot be specified; and an output unit for outputting the information subjected to the anonymizing process as the anonymized user information via the interface means to the service infrastructure provider device; the service provider-side storage means including: an original user information storage unit for recording the original user information of the plurality of specified users; an anonymized user information storage unit for storing the anonymized information as an anonymized user information; and an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified

user; the service infrastructure provider device including: a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means; the service infrastructure provider-side computing means including: an anonymized user information gathering unit for gathering the anonymized user information transmitted from the service provider device via the execution instruction interface means; an information analyzing unit for analyzing the gathered anonymized user information; an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an execution instruction of an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction with respect to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID; and a data utilization level measurement unit for detecting the execution instruction ID added to the original information when the specified user executes the additional service, and measuring the utilization level of the analyzed result by the user based on the detection of the ID; wherein the service infrastructure provider-side storage means including: an anonymized user information storage unit for storing the anonymized user information provided via

the interface means from the service provider device; wherein the service infrastructure provider device executes an additional service as a second service with respect to a specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

[0034]

Furthermore, the service providing system according to the present invention characterizes in that the additional service as the second service is an advertising action instruction with respect to a specified user corresponding to an anonymized user, and based on an instruction from the additional service action instruction unit, a product planning - sales promotion support unit transmits an advertisement for the specified user corresponding to an anonymized user via the interface means.

Advantageous Effects of Invention

[0035]

According to the present invention, the service provider device performs an anonymizing process of original user information of specific users that the service provider gathers from the service receiver so that a specific user cannot be

specified, or the service infrastructure provider device performs the anonymizing process of original user information of specific users that the service provider gathers from the service receiver so that a specific user cannot be specified, and using the anonymized user information after the processing or the original user information prior to processing, the information related to the anonymized user corresponding to a specified user or the specified user, such as actions and preferences, are analyzed, and based on the result, the analyzed information (service) can be provided to the service provider device together with an appropriate action instruction, such as an advertising action instruction, with respect to a specified user. In other words, the service infrastructure provider as a third party can freely analyze the user information (anonymized user information) from the service provider device, and to provide appropriate sales promotion support service based on the analyzed information.

[0036]

Further, since the original user information is processed on the side of the service provider device or the service infrastructure provider device, even if the processed information is leaked from the service infrastructure provider device, it becomes possible to prevent the specified user from being specified based on the processed information.

[0037]

Problems, configurations and effects other than those described above will become apparent from the following description of preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0038]

Fig. 1 is a view showing the overall processing steps according to a service providing method of the present invention;

Fig. 2 is a view showing an overall outline of a service providing system according to the present invention;

Fig. 3 is a configuration diagram of a server for a service provider of a service provider device;

Fig. 4 is a configuration diagram of a server for a service infrastructure provider of a service infrastructure provider device;

Fig. 5 is a functional block diagram illustrating one example of an information processing unit;

Fig. 6 is a view illustrating one example of a corresponding relationship between an original user information of a specified user and an anonymized user information (processed information) of an anonymized individual user obtained by processing the original user information;

Fig. 7 is a functional block diagram illustrating one example of an information analysis unit of a server for a service infrastructure provider;

Fig. 8 is a view showing one example of a result of analysis by an information analysis unit of the server for the service infrastructure provider;

Fig. 9 is a view showing another example of the result of analysis by the information analysis unit of the service infrastructure provider;

Fig. 10 is a view showing a processing sequence for registering member IDs per service provider before the user of the service providing system starts using services; and

Fig. 11 is a view showing a processing sequence when the user of the service providing system is using the services.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0039]

Now, the preferred embodiments of the present invention will be described with reference to the drawings. At first, we will describe a service providing system for supporting the business of service receivers.

[0040]

The service providing system is composed of a service infrastructure provider system or device (hereinafter referred to as service infrastructure provider device) for providing

application services and SI, in other words, services such as a reservation function or a business SaaS (first service) to the service provider side, and a service provider system or device (hereinafter referred to as service provider device) for customizing the first service in response to the requests from a service receiver (such as a restaurant) and providing the same to the service receiver. The service receiver (such as a restaurant) provides foods, drinks or foodstuff to the users (customers) and receives user information (original information) from the users.

[0041]

The service infrastructure provider device can be a device providing services other than the SaaS, such as a PaaS (Platform as a Service) that rents platforms including OS, or an ASP (Application Service Provider) service, for example.

[0042]

Now, we will mainly describe the restaurant business (restaurants), the service provider and the service infrastructure provider related thereto.

[0043]

At first, we will describe the outline of the service providing system. The service infrastructure provider device of the service providing system has an application server (hereinafter referred to as server for service infrastructure

provider) for providing a reservation management service (application service) or the like to the service provider device.

[0044]

The service provider device has an application server (hereinafter referred to as server for service provider) capable of customizing the reservation management service based on the requests from the service receiver, and receiving and managing reservation information of the users (customers) from the service receiver.

In other words, the service infrastructure provider device and the service provider device cooperate to support the business of the service receiver.

[0045]

This type of system generally responds to individual cases for each service receiver. Accordingly, the service infrastructure provider device provides a first service to the service provider device, the service provider device provides a customized first service (service start) to the service receiver, and merely manages the user information (original information) based on the provided first service.

[0046]

One example of such service providing method is, for example, a SaaS. A SaaS is an ICT application environment that enables the service provider or the service receiver to use the function (first service) provided by the information system

(software) via the network without having to construct or introduce a new system.

[0047]

Generally, the SaaS has a merit of enabling necessary services to be used promptly when necessary without having to construct special systems. Further, SaaS does not require a special environment to be prepared within the company, so that the operation of the function (service) can be started at an early stage, and the related costs can be reduced. It requires the use of the Internet or a WAN, but a similar operation as using an internal system is enabled by the technical revolution of networks and browsers.

Further, the service provider device or the service receiver using the SaaS, the SI and the operation and maintenance provided by the service infrastructure provider can expect reduced costs and increased sales.

[0048]

Each service provider device is designed to individually manage the original information of a specified user (original user information) related to the user (including individuals, groups or companies) gathered from the service receiver.

[0049]

There was no system aimed at actively providing services for promoting sales to specified users using the original user

information. In other words, no consideration was given to actively utilizing the original user information.

[0050]

One reason for this is because the original user information that the respective service provider devices gather from the service receivers includes personal information and the like for specifying the individuals, groups and companies of the specified users.

[0051]

Accordingly, it has previously been possible to send and receive original user information among the service infrastructure providers and the service providers based on agreements, however, it was generally not possible to provide original user information including personal information from the service provider devices to service infrastructure provider devices or other service provider devices as third parties.

[0052]

In other words, the respective service provider devices are restricted by the Personal Information Protection Law or the like in Japan, and since the service infrastructure provider and the service provider are composed to function individually and independently, it was impossible to mutually utilize the original user information legally gathered and managed by the respective service provider devices among the service providers and the service infrastructure providers.

[0053]

The present invention considers this problem, and aims at providing a service providing system having an execution unit that processes the original user information gathered from service receivers or users thereof into anonymized user information, analyzes the anonymized user information, and executes a second service (action, preference and the like) provided to an anonymized user according to the analyzed result and action (such as an advertisement action) to the anonymized user, such as a product planning - sales promotion support means for outputting an instruction via a communication means such as an email or the Web.

[0054]

A second service is, for example, a prediction of action of anonymized users, popular menus and advertising expenses using the anonymized user information, or instruction of such action (such as instructing an advertising action).

[0055]

According to such system, it becomes possible to construct a service providing system via a common service infrastructure in correspondence to various fields of business, gather and analyze the specified user information (including data) acquired from the various fields of business in the service infrastructure, and create a second service (new value) capable of contributing to the sales promotion in the various fields of

business. Based on this second service, it becomes possible to construct a service providing system expected to contribute to sales promotion for the service provider devices of various fields of business.

[0056]

At first, we will describe a service providing method according to the present invention. The service providing method according to the present invention is a service providing method that uses a service providing system composed of a service provider device of a service provider targeting a plurality of service receivers utilized by a plurality of specified users, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers via the service provider device, to provide an additional service as a second service, wherein the method is composed of the following steps.

Step 1: an original user information gathering step of gathering user information of the plurality of specified users as original user information including an identifier, a sub-identifier and other information, and further having an execution instruction ID added thereto;

Step 2: a secrecy processing step of the original user information for subjecting information having high secrecy out of the original user information of the plurality of specified

users having been gathered in the original user information gathering step to a masking process and/or a filtering process;

Step 3: an anonymizing process step of performing an anonymizing process to an identifier and a sub-identifier included in the original user information subjected to the secrecy processing step so that a single user cannot be specified;

Step 4: a step of storing the information of the anonymized user having been subjected to the anonymizing process as anonymized user information;

Step 5: a step of storing a correspondence between the anonymized user and the specified user;

Step 6: an anonymized user information analysis step of analyzing an action characteristics of the anonymized user using the anonymized user information;

Step 7: an analyzed result output step of achieving an analyzed result through analysis of the action characteristics of the anonymized user using the anonymized user information;

Step 8’: a step of automatically executing product planning support or sales promotion support for a service provider and receiver based on the analyzed result (contents of analysis) in the analyzed result step;

Step 8: an action instruction step of outputting an action instruction with respect to a specified anonymized user based on

the analyzed result achieved by the analyzed result output step, simultaneously as issuing the execution instruction ID;

Step 9: a step of executing an additional service execution instruction as the second service with respect to a specified user corresponding to the anonymized user by referring to the already stored correspondence between the anonymized user and the specified user when the action instruction is output with respect to the specified anonymized user;

Step 10: a step of detecting the execution instruction ID added to the original user information when the specified user executes the additional service according to step 9;

Step 11: a data utilization level measurement step of measuring the utilization level of the analyzed result by the user based on the detection of the execution instruction ID; and

Step 12: a step of performing billing, compensating, clearing or the like based on the data utilization level measurement.

Now, in step 6, regarding the analysis of the anonymized user information, if the information of the analyzed result is provided only to the service provider device-side user being the information providing source, it is desirable to perform an action - preference analysis corresponding to the individual companies. If the information of the analyzed result is provided also to the service provider device-side user as third party other than the information providing source, in other

words, if the information is opened to third parties, it is desirable to perform an action - analysis corresponding to opened information. If the information of the analyzed result is to be opened to third parties, it may be preferable to determine whether the information is opened to the public or opened to a specific target.

Further, in step 6, in order to analyze the action characteristics of an anonymized user based on anonymized user information, it is desirable to perform analysis utilizing a plurality of anonymized users gathered from the plurality of service providers as described hereafter. The procedure is as follows.

At first, each user of service provider A is denoted by reference numbers A1 through An (A1, A2, A3, A4, A5 ... A8, A9, ... A15 through An), and the user information of each user is denoted by reference numbers a1 through an (a1, a2, a3, a4, a5, ... a8, a9, ... a15 through an'). Thereafter, these users and user information are converted via the device of the service provider A to anonymized users XA1 through XAn (XA1, XA2, XA3, XA4, XA5 ... XA8, XA9, ... XA15 through XAn) and anonymized user information xa1 through xan (xa1, xa2, xa3, xa4, xa5 ... xa8, xa9, ... xa15 through xan).

Further, each user of service provider B is denoted by reference numbers B1 through Bn (B1, B2, B3, B4, B5 ... B8, B9, ... B15 through Bn), and the user information of each user

is denoted by reference numbers b1 through bn (b1, b2, b3, b4, b5, ... b8, b9, ... b15 through bn’). Thereafter, these users and user information are converted via the device of the service provider A to anonymized users XB1 through XBn (XB1, XB2, XB3, XB4, XB5 ... XB8, XB9, ... XB15 through XBn) and anonymized user information xb1 through xbn (xb1, xb2, xb3, xb4, xb5 ... xb8, xb9, ... xb15 through xbn).

Next, for example, if analysis is performed based on the plurality of anonymized user information (xa1, xa4, xa8, xa9, xa15) from the device of service provider A as action analysis xa that "males in their twenties prefer action movies", and if analysis is performed based on the plurality of anonymized user information (xb2, xb7, xb20) from the device of service provider B as action analysis xb that "males in their twenties prefer to eat steaks at Shibuya", the records of anonymized user information (xa1, xa4, xa8, xa9, xa15) from the device of service provider A or of anonymized user information (xb2, xb7, xb20) from the device of service provider B used for the analysis are used to create a list of anonymized users as described below.

Anonymized user lists

xa-corresponding user: "anonymized user information of service provider A: xa1, xa4, xa8, xa9, xa15"; and

xb-corresponding user: "anonymized user information of service provider B: xb2, xb7, xb20".

Then, in the action instruction of step 8, the service infrastructure provider outputs an action instruction to the service provider using any of the lists of the anonymized users (corresponding list), based on the user of the service provider to which the action instruction should be sent to.

For example, the users who "reserved a seat for an action movie in a cinema complex in Shibuya" out of users A1 through An of service provider A are selected, and an instruction is output to the service provider to issue coupons for a steakhouse to those users.

Further, the service provider A having received such instruction executes an action of such service corresponding to the instruction from the service infrastructure provider as a second service to the original users (A1, A15) corresponding to the anonymized users (XA1, XA15), in other words, to the users prior to anonymization. For example, the service provider A performs an advertisement action to "introduce a steakhouse close to Shibuya station".

As described, upon analyzing the anonymized user information, a more effective analysis result can be achieved by analyzing the plurality of user information from a plurality of service provider devices, and as a result, precise service can be provided efficiently to users. Especially, it is effective to have the analysis result provided to each user of the plurality of service provider devices.

In addition, as a step prior to step 8, it is possible to provide a step (step 8′) for automatically supporting product planning or supporting sales promotion of the service providers based on the analyzed result (contents of analysis). In this case, as a result of the analysis, it is possible to execute product planning support or sales promotion support of the service provider if the number of people within a specific area exceeds a predetermined number (for example, 1000). According to this process, service can be provided precisely and the effect of the service can be enhanced.

Embodiment 1

[0057]

The present embodiment illustrates an example of the service providing system mainly taking a service provider device of a restaurant business as an example.

[0058]

Fig. 2 is a configuration diagram illustrating an overall outline of the service providing system according to the present embodiment.

A service providing system includes a service provider device 2 storing a service receiver such a restaurant 1, service provider devices 2', 2'' and 2''' storing other service receivers, a service infrastructure provider system 3, and a communication network connecting the same.

[0059]

The restaurant 1 is a store providing foods or drinks and/or products to a plurality of specified users (consumers: individuals, groups, companies and the like), and has a terminal such as a personal computer including an input and output device 11 for entering user information IO related to a specified user, such as original information (hereinafter referred to as original user information) such as reservation information I1 and meal information I2.

[0060]

The original user information of a user 111 includes a primary information which is an identifier for specifying the user (such as name and address), and a secondary information which is a sub-identifier (such as age and sex).

Further, the original user information of the restaurant (service receiver) 1 itself includes a primary information which is an identifier for specifying the restaurant 1 (such as the name) or a secondary information which is a sub-identifier (such as a branch name of a restaurant for specifying the location).

In the present example, the original user information of the user 111 is taken as an example for simplifying the description.

[0061]

A personal computer on the side of the restaurant 1 can utilize a reservation function (first service) provided from a

service infrastructure provider 3 via a service provider device 2.

[0062]

Accordingly, input of original user information (such as a meal information) related to the specified user can be performed through the input and output device 11.

It is described that the input of original user information (such as the meal information) related to the specified user is performed via the input and output device 11, but it is possible to adopt a configuration in which a user can enter his/her own information via a dedicated device installed in the restaurant 1 when the user visits the restaurant 1.

The reservation utilizing the reservation function can be performed via a personal computer on the service receiver side using a reservation page 22′ in a restaurant page of a service provider's Web site provided by the service provider 2.

Further, when the specified user executes the additional service (second service), an execution instruction ID is added to the original user information. The means for adding the execution instruction ID can be realized, as described hereafter, for example by embedding a parameter to the URL section within an advertisement mail or a banner display.

[0063]

A service provider device 2 (company A) is a sales promotion support company for a service receiver (restaurant

business), and includes a server 21 for a server provider. The service provider of service provider device 2 (company A) will be the service receiver of a service infrastructure provider device 3.

[0064]

Then, the service provider device 2 has a function to customize a reservation function S1 (first service) provided by the service infrastructure provider device 3, for example, according to the requests from the restaurant 1 (service receiver), and to provide the same to the restaurant 1.

[0065]

Further, the service provider device 2 has a function to gather a reservation information I1 (such as a member ID, a store ID, a menu ID, date and time, number of people (configuration), and execution instruction ID) based on the reservation function of the restaurant 1 and a meal information (such as the member ID, the store ID, the menu ID, date and time, number of people (configuration), and execution instruction ID) I2 entered through the input and output device 11 disposed in the restaurant 1, and to store the reservation information I1, the meal information I2 and the execution instruction ID as original user information to a storage means (DB) 212 for management.

[0066]

Further, the service provider device 2 has a function to transfer an order data or a requisition data from the restaurant 1 (such as foodstuff, producer, quantity, suggested price and the like) I5 to the service infrastructure provider device 3, and to transfer foodstuff production information (such as foodstuff, producer, production quantity, suggested price and the like) I6 from the service infrastructure provider device 3 to the restaurant 1.

[0067]

The server 21 for a service provider has a storage means 212 for storing the original user information of the specified users or an anonymized user information described later (processed information/data), and an information processing unit 2112 of a computing means 211 (refer to Fig. 3) for a server 21 of a service provider.

In the present embodiment, the information from the restaurant 1 side based on the reservation function S1 provided to the service receiver (restaurant 1) from the service provider device 2 is referred to as original user information I1 and I2, but the information of the service provider device 2 side such as the information related to the service provider itself not related to the reservation function S1, such as annual sales and advertising expenses, can be set as the original user information.

[0068]

The information processing unit 2112 has a function to process the original user information such as the reservation information I1 and the meal information I2 gathered from the restaurant 1 so that the place of origin of the information, in other words, the specified user, cannot be specified, and to output the processed information (processed information of reservation information and meal information) I1 and I2 to the service infrastructure provider device 3.

The details of these units including the information processing unit 2112 will be described later.

[0069]

A service provider device 2’ (company B) is a device for a sales promotion support company (Web advertisement, marketing business) for a service receiver, such as an advertisement agency placing a Web advertisement to customers 111' and the like for the service receiver.

[0070]

A service provider device 2’’ (company C) is a device for a sales promotion support company for a service receiver (entertainment business) including hotels, movie theaters and other amusement facilities. Although not shown, it includes information processing units and the like, similar to the service provider device 2.

[0071]

In other words, although not shown, the service provider device 2'' has a function to provide to the service infrastructure provider device 3 information (such as information including member ID + location + date and time as a set) I3 having processed the original user information (such as a visitor information and reservation information) of a specified user of a restaurant (service receiver) via processes such as anonymization, similar to the service provider device 2.

[0072]

According to the present embodiment, the service infrastructure provider device 3 provides a business system (business SaaS) to the service provider device 2''.

[0073]

A service provider device (company D) 2''' is a producer platform, having a function to provide to the service infrastructure provider device 3 a foodstuff production information (such as foodstuff, producer, and suggested price) I6 from a producer (such as farmer and food processing maker) 111''', and to provide to the producer 111''' order data and requisition data (such as foodstuff, producer, quantity and suggested price) I5 from the service infrastructure provider device 3.

[0074]

A service infrastructure provider device (company H) 3 is a device for a sales promotion support company for service providers (service backbone business).

The service infrastructure provider device 3 has a function to provide a first service such as a reservation function (reservation service) to the service provider device 2, and to provide a business system (business SaaS) to the service provider device 2'' (company C).

[0075]

The service infrastructure provider device 3 has a function to provide service infrastructures such as a reservation function S1 and a business system S1'' to service provider devices 2 and 2'.

It also has a function to provide necessary service infrastructures to other service providers 2'' and 2'''.

[0076]

In order to execute the above functions, the service infrastructure provider device 3 includes an information analysis unit 3112 of anonymized user information from the service provider devices 2 and 2' and a computing means for analyzing the anonymized user information and the anonymized user information, a product planning - sales promotion support unit 3113, a storage means 312 for storing the analyzed information obtained through analysis performed via the information analysis unit 3112, and so on.

[0077]

Moreover, the service infrastructure provider device 3 has a product planning - sales promotion support unit 3113 for executing functions as described below, independently from the function for providing a reservation function (first service) S1 to the service provider device 2 side. In other words, the product planning - sales promotion support unit 3113 is an additional service action instruction unit that outputs an advertisement action instruction as an additional service (second service), for example.

[0078]

In other words, the above-described function analyzes the action prediction, the preference and the like of the anonymized user information using the anonymized user information such as the reservation information I1′ and the meal information I2′ processed by the service provider device 2 side, and outputs an advertisement action instruction to the service provider device 2 based on the analyzed result.

[0079]

The function further provides information S2′ such as a popular menu information or an action prediction information based on the analyzed results to the service provider device 2′ of the advertisement agency.

The configurations and detailed functions of these units will be described later.

[0080]

Further, the service infrastructure provider device 3 has a data utilization level measurement unit 3115 that executes a function to measure the utilization level of anonymized user information and the analyzed results thereof, and to provide an advertisement effectiveness performance (including execution instruction ID) information S3 to the service provider device 2′ of the advertisement agency. The advertisement effectiveness result information can be obtained by detecting the execution instruction ID transmitted together with the original information provided from the user side, counting the number of accesses to the ID, and setting the same as the advertisement performance. The execution instruction data utilization level measurement unit 3115 has a function to detect the execution instruction ID. Further, it has a function to measure the utilization level of the analyzed result (second service) based on the frequency of use thereof (such as the number of times or the level of value of the service) by detecting the ID. This utilization level can also be used to perform billing, compensating, clearing or the like according to the utilization level.

[0081]

Fig. 3 is a view showing a configuration of a server 21 for a service provider of a service provider device 2. The server 21 includes a computing means 211, a storage means (storage

device including a DB) 212, and an interface means (communication interface) 213. The computing means 211 includes an original user information gathering unit 2111, an information processing unit 2112, and an action executing unit (such as an information communicating unit using email) 2113.

[0082]

An original information gathering unit 2111 gathers original user information (such as the reservation information, meal information I1 and I2) from the restaurant 1 via an interface means (communication interface) 213.

[0083]

The information processing unit 2112 aims at processing information so that the place of origin of the original user information cannot be specified, according to which desired processes are provided to the original user information and the information is output as anonymized user information. The details will be described later.

[0084]

If an agreement related to confidentiality or the like is made between the service provider side and the service infrastructure provider side, the original user information can be transmitted as it is to the service infrastructure provider device 3 side from the service provider device 2 side.

In that case, there is no need to provide an information processing unit 2112 to the service provider device 2 side.

[0085]

A communication execution processing unit 2113 transmits the processed anonymized user information to the service infrastructure provider device 3 via the interface means 213. Further, it includes an information communication unit 2113 for receiving analyzed results (such as popular menu information and action prediction information) from the service infrastructure provider device 3 and receiving an instruction to perform advertisement action and to output an advertisement execution instruction via the interface means 213 to the user of the restaurant 1-side. The information communication unit 2113 outputs the advertisement execution instruction via an email or a browser.

[0086]

The storage means 212 includes DBs 2121, 2122 and 2123 of various storage units storing tables and the like showing the original user information I1 and I2, anonymized user information I1' and I2', and the association between anonymized users and specified users.

The DB 2122 of the storage means 212 (refer to Fig. 6) associates the service member IDs (such as a service member ID 12345 of specified user A, service member ID 67890 of specified user B), and anonymized user ID having been anonymized, such as anonymized ID xxxxx of anonymized user X, or anonymized ID yyyyy of anonymized user Y) for specifying the user 111, and stores

the same. The DB 2123 stores a secrecy-processed user information described later and anonymized user information. These information can be recorded respectively in independent DBs. Thus, it becomes possible to determine the correspondence between the anonymized user and the specified user. The interface means 213 is a communication interface for transmitting and receiving various information, data and emails between the restaurant 1 and the service infrastructure provider device 3.

[0087]

Fig. 4 is a view showing a configuration of a server 31 for a service infrastructure provider of the service infrastructure provider device 3. The server 31 includes a computing means 311, a storage means (storage device including a DB) 312, and an interface means (communication interface) 313.

[0088]

The computing means 311 includes a processed information gathering unit 3111 for gathering anonymized user information, an information analysis unit 3112, and a product planning - sales promotion support unit 3113.

[0089]

The processed information gathering unit 3111 gathers anonymized user information (such as processed reservation information I1' and meal information I2') of the service provider device 2.

The information analysis unit 3112 analyzes the trend, the preferences and the like of the anonymized user using anonymized user information.

[0090]

The product planning - sales promotion support unit 3113 (including additional service action instruction unit) outputs an analyzed information (such as a popular menu, an action prediction information and the like) and an advertisement action instruction (including advertisement control ID) S2 to the service provider device 2 in response to the analyzed result of the information analysis unit 3112.

[0091]

Further, the product planning - sales promotion support unit 3113 can provide information (such as popular menu, action prediction information and the like) S2' of the analyzed result to the service provider device 2'.

[0092]

One means for providing the advertisement action instruction or an analyzed result of the product planning - sales promotion support unit 3113 to the service provider devices 2 and 2' can utilize emails or direct mails for directly transmitting the same to the service provider devices 2 and 2'. Other methods such as indirectly alerting the devices 2 and 2' through a browser or the like can be adopted. Basically, any

means can be adopted as long as data can be provided using known methods.

[0093]

The storage means 312 includes DB 3122 and 3123 for storing anonymized user information I1′ and I2′ and analyzed results (analyzed result information) S2 and S2′, in addition to the DB 3121 storing the first service. The analyzed information storage DB 3123 can be omitted if necessary.

[0094]

An interface means 313 is a communication interface for transmitting and receiving anonymized user information and the like among service providers 2 through 2′′′.

[0095]

Fig. 5 is a view showing one configuration example of an information processing unit 2112 of the server 21 for a service provider. The information processing unit 2112 includes an original user information input unit 21120, a filtering or masking unit 21121, an information classification processing unit 21122, an anonymizing process unit 21123, and an anonymized user information output unit 21124.

[0096]

The filtering or masking unit 21121 performs filtering or masking to only the portion of data of the original user information that must not be opened to public, so as to prevent the leaking of data.

[0097]

The information classification processing unit 21122 includes various classification units 21122a through 21122c for classifying the original user information entered to the original user information input unit 21121 and output from the filtering or masking unit 21121 into classifications such as identifiers (name, member ID, email address, address and so on), sub-identifiers (sex, age and so on), and other information (meal information, reservation information, visitor information and so on).

[0098]

The reason for classifying the original user information is that there are many types of information included in the original user information such as reservation information I1 and meal information I2, information that can be used by itself to directly specify a specified user (identifiers such as name, member ID, email address and address), information that cannot be used by itself to directly specify a specified user but the combination with other information can lead to indirectly specifying the specified user (sub-identifiers such as sex and age), and information that should preferably not be opened to the public (other information). The classification is performed so as to perform efficient and accurate anonymizing process of these identifiers, sub-identifiers and other information that

should not be opened to the public by the anonymizing process unit 21123 described later.

[0099]

As described, classifying the original user information into identifiers, sub-identifiers and other information is effective in processing the information via the processing unit 21123.

[0100]

A sub-anonymizing process unit 21123a of the anonymizing process unit 21123 converts multiple specified users, such as the identifier of specified user A (ID 12345), to anonymized identifiers (ID xxxxx).

By this conversion, it will not be possible for the service infrastructure provider 3 or other service provider devices 2′ through 2′′′, which do not have a table showing the corresponding relationship between identifiers, to specify the specified user A, even if they receive the original user information of an anonymized user.

[0101]

Further, a sub-anonymizing process unit 21122a processes the sub-identifier (such as Address: Street address, Totsuka-ku, Yokohama-shi, Age: 62, Sex: male), for example as shown in Fig. 6, so that the specified user A cannot be specified based on the sub-identifier (such as 60s, male, living in Yokohama).

A method called k-anonymization method should be referred to as the method for anonymizing information (data). The k-anonymization method is well known, as taught for example in the website of The National Institute of Advanced Industrial Science and Technology (http://www.aist.go.jp), so detailed description thereof will be omitted.

[0102]

Fig. 6 is a view showing one example of a table (DB table) representing the corresponding relationship between original users and anonymized users on the side of the service provider device 2 (or the service infrastructure provider device 3).

[0103]

For example, the information of specified user A includes, as original user information, identifiers (such as name, ID, email address and address), sub-identifiers (such as sex and age), and other information (such as meal information - reservation information *1 and visitor information - reservation information *2). Further, the information of anonymized user X includes, as anonymized user information, identifiers (such as name, ID, email address and address), sub-identifiers (such as sex and age), and other information (such as meal information - reservation information *1 and visitor information - reservation information *2).

[0104]

The identifiers are sub-identified by anonymizing the identifiers. For example, an ID is converted to a different ID so that the user cannot be specified by outsiders (ID 12345 is converted to ID xxxxx).

The sub-identifiers are processed to a certain level so that the user cannot be specified (Address: Street address, Totsuka-ku, Yokohama-shi, Age: 62, Sex: male is processed to 60s, male, living in Yokohama).

[0105]

Fig. 7 is a block diagram showing one configuration example of an information analysis unit 3112 of the service infrastructure provider device 3.

[0106]

The information analysis unit 3112 includes a processed information / anonymized user information input unit 31121, a processed information gathering - analyzing unit 31122, an analyzed information generating unit 31123, and an analyzed result information output unit 31124.

[0107]

The processed information gathering - analyzing unit 31122 includes, for example, an information gathering - analyzing unit 31122a related to the action of users, an information gathering - analyzing unit 31122b related to the preference, and an information gathering - analyzing unit 31122c related to

companies and company employees, such as annual sales and advertising expenses.

[0108]

The information gathering - analyzing unit 31122a regarding the actions of users gathers and analyzes the information related to action, such as date, time and location, from the anonymized user information entered to the anonymized user information input unit 31121.

[0109]

The information gathering - analyzing unit 31122b regarding preferences gathers and analyzes the information related to preferences, such as stores and menu IDs, from the anonymized user information entered to the anonymized user information input unit 31121.

[0110]

The information gathering - analyzing unit 31122c related to companies and company employees, such as annual sales and advertising expenses, gathers and analyzes the information related to sales, such as annual sales, types of businesses, advertising expenses, date and time, location and so on, from the anonymized user information entered to the anonymized user information input unit 31121.

[0111]

The analyzed information generating unit 31123 includes an action predicting unit 31123a of an anonymized user, a popular

menu specifying unit 31123b corresponding to preferences of the anonymized user, and an information specifying unit 31123c corresponding to the company information.

[0112]

The action predicting unit 31123a of the anonymized user predicts the actions of anonymized users based on the analyzed information (analyzed information regarding action) from the anonymized user information gathering - analyzing unit 31122, and outputs an action prediction information as the result of analyzing action.

[0113]

The popular menu specifying unit 31123b specifies a popular menu of an anonymized user based on the analyzed information (analyzed information related to menus and the like) from the anonymized user information gathering - analyzing unit 31122, and outputs a popular menu information as the result of analyzing preferences.

[0114]

The information specifying unit 31123c specifies the information according to the requests from each company (each user) based on the analyzed information (analyzed information related to the company) from the anonymized user information gathering - analyzing unit 31122, and outputs the following information, for example: "manufacturers having annual sales of 10 to 20 billion yen spend one million yen per month on

advertising expenses", or "company employees in their 40s who work for major companies having an annual sales of 100 billion yen or higher often dine out on Wednesdays".

[0115]

The analyzed result (analyzed information) output unit 31124 outputs information based on the respective analyzed results generated via the analyzed information generating unit 31123 to the product planning - sales promotion support unit 3113 (refer to Fig. 2) that follows.

[0116]

Figs. 8 and 9 show examples of the analyzed result by the analyzed information generating unit 31123, which show the relationship between the anonymized user information 1001 and 1101 having processed the original user information and the respective information of analyzed results 1002 and 1102.

[0117]

In other words, Fig. 8 shows examples of generating "action prediction information", "popular menu information" and the like as analyzed result information based on various information such as the meal information, reservation information and other information obtained by processing the original user information.

[0118]

Based on the above information, Fig. 9 shows an example of generating information such as "manufacturers having annual sales of 10 to 20 billion yen spend one million yen per month on

advertising expenses" or "company employees in their 40s who work for major companies having an annual sales of 100 billion yen or higher often dine out on Wednesdays" as analyzed result information.

[0119]

Next, a processing sequence of a service providing system according to the present invention will be described.

Fig. 10 is a flowchart showing a service member ID registration processing sequence prior to starting use of services of the service providing system.

[0120]

At first, in step S001, the service infrastructure provider device 3 of the service providing system reads a service infrastructure, which is a first service S1 such as a reservation function or a business SaaS, from a reservation function and business SaaS DB which is a first service storage DB 3121, and provides the same to the service provider device 2. In step S002, the service provider device 2 side customizes the first service such as the reservation function, and provides the same to the restaurant 1 side.

[0121]

In step S003, the user 111 using the restaurant 1 performs an operation to register the starting of use. That is, the user enters user information (including the email address) using the reservation function of the restaurant 1.

[0122]

Then, in step S004, this user information is transmitted from the restaurant 1 as original user information to the service provider device 2.

[0123]

The service provider devices 2 receives this original user information, and in step S005, performs a process to record the original user information, and stores the original user information in the DB (original user information storage DB) 2121 of the storage means 212. Further, in step S006, a member ID per service provider is issued, and this ID is transmitted in step S007 via the restaurant 1 to the user 111.

[0124]

Further, in step S008, the service provider device 2 registers a member ID per service provider (service member ID for specifying user 111) as the member ID per service provider to a DB (anonymized user - specified user correspondence information storage DB) 2122 of the storage means 212.

[0125]

Further, in step S009, the processing, that is, the anonymizing process of the original user information, is performed. The anonymizing process is performed so that the specified user cannot be specified, as described earlier. If necessary, the data that should not be leaked from the service provider device 2 is subjected to filtering or masking.

[0126]

In step S010, an anonymized user information registration process is performed, so as to register the anonymized user information to a DB (anonymized user information storage DB) 2123.

[0127]

Thereafter, in step S011, the service provider device 2 issues an anonymized user ID issue request of a service receiver to the service infrastructure provider device 3, and in step S012, transmits the anonymized user information.

[0128]

Then, in step S013, the service infrastructure provider device 3 performs an anonymized user ID issue process to issue an anonymized user ID of the service receiver to the service provider device 2, and in step S014, transmits the anonymized user ID.

[0129]

At this time, in step S015, the service infrastructure provider 3 registers the anonymized user ID having been anonymized to the DB 3122. Further, in step 016, the service provider device 2 associates the member ID per service provider with the anonymized user ID, and registers the same in the DB 2122.

The above process terminates the ID registration process prior to starting use of the service.

[0130]

In the present embodiment, the anonymized user ID is issued by the service infrastructure provider device 3 side, but it is possible to have the anonymized user ID issued by the service provider device 2 side, and to have the ID associated with the member ID per service provider and registered in the DB 2122.

[0131]

Fig. 11 is a flowchart showing the processing sequence during use of services of the service providing system.

[0132]

At first, in step S021, the user 111 enters the reservation information (including the service member ID and the execution instruction ID) I1 via the Website of the service provider device 2. Further, the user uses the input and output device 11 of the restaurant 1 to enter the meal information (including the service member ID and the execution instruction ID) I2.

Here, the execution instruction ID is added to the original user information when the user 111 executes an additional service (second service) from the service infrastructure provider device 3, as described above.

For example, in the present advertisement execution instruction email, the execution instruction ID is embedded as a parameter to the section of the URL stating, for example, to "Click here to display". This type of parameter of the

execution instruction ID can also be embedded similarly in a banner display.

Accordingly, by having the user 111 open the above URL, the utilization level measurement can be carried out on the server side that "the URL included in the advertisement mail has been opened".

Furthermore, if reservation is performed through use of the service receiver's page (reservation page) 22' (refer to Fig. 2), the execution instruction ID can be embedded in the reservation information I1 at this time.

Furthermore, if a form of service is adopted such as having a coupon page displayed when the URL is opened, the execution instruction ID can be re-embedded in that page using a two-dimensional barcode or the like, and the execution instruction ID can be embedded to the meal information I2 by having the coupon read during payment at the restaurant 11 (refer to Fig. 2).

Furthermore, an arrangement is adopted in which the execution instruction ID issued at the service infrastructure provider side is returned from the user side via the service providing system to the service infrastructure provider side, which is the issue source of the execution instruction ID. Thereby, the execution instruction ID can go around from the service infrastructure provider to the service provider, the

user, the service receiver, the service provider, and the service infrastructure provider.

According to this arrangement, it becomes possible to detect the execution instruction ID at the service infrastructure provider side. By detecting this execution instruction ID, it becomes possible to measure the utilization level of whether the second service has been actually used at the user side.

[0133]

Then, in step S022, the original user information including the reservation information I1 and meal information I2 (raw data) is transmitted from the restaurant 1 side to the service provider device 2.

[0134]

In step 023, the service provider device 2 processes this original user information, in other words, performs a personal information anonymizing process. The anonymizing process is performed via the above-described method. At this time, the service provider device 2 associates the anonymized ID after anonymization (anonymized user X, Y, and so on) with the member ID per service provider (specified user A, B and so on) registered in the DB 2122 of the storage means 212, and registers the same. In other words, the DB 2122 has a correspondence table storing the correspondence between the specified users (specified user A, B, and so on) corresponding

to the IDs per service provider and the anonymized IDs (anonymized user X, Y, and so on) having been anonymized. Using this table, specified users A and B can be specified based on anonymized users X and Y, and it becomes possible to perform feedback of the second service regarding anonymized users to the specified users.

[0135]

Thereafter, in step S024, the anonymized user information (anonymized ID - data after anonymization) is transmitted to the service infrastructure provider device 3.

[0136]

In step S025, the service infrastructure provider device 3 performs a process to analyze the anonymized user information. Then, in step S026, the information on the analyzed result is registered to the DB 3123.

[0137]

In step S027, the service infrastructure provider device 3 performs product planning - sales promotion support processing (notification of analyzed information & advertising action instruction).

Next, in step S028, the analyzed information of the analyzed result is transmitted to the service provider device 2, and action instructions, such as advertising action instructions with respect to a specified user corresponding to the anonymized user, are output.

[0138]

In step S029, the service provider device 2 having received the advertising action instruction carries out a communication execution process, and outputs an advertisement execution instruction to the restaurant 1 via a communication means such as an email. According to the advertisement execution instruction, in step S023, a correspondence table storing the correspondence between the IDs per service provider (specified users) and anonymized IDs after anonymization (anonymized users) stored in the DB 2121 of the storage means 212 is utilized. By referring to this correspondence table, the destination (specified user) of the communication instruction on the service receiver side can be specified based on the advertisement execution instruction from the service infrastructure provider device 3 side. In step S030, the service provider device 2 can execute an advertising communication directly to the user 111.

[0139]

In step S030, in order to execute an advertising communication from the restaurant 1 side, an advertising communication (advertising action) is performed via the service provider device 2 to the user 111. Since the restaurant 1 has received an identifier, such as an email address, for specifying the user from the user 111 during ID registration prior to starting use (step S003), a sales expanding advertisement can be sent to the specified user 111 using emails or the like. The

sales expanding advertisement can also be performed via means such as browsers or banner advertisement.

[0140]

As described in the present embodiment, the service infrastructure provider device 3 subjects the original user information of users (such as members) that the service provider device 2 has gathered from restaurants (service receivers) 1 to processes such as an anonymizing process so that a specific user (such as a member) cannot be specified, and utilizes the same as anonymized user information.

[0141]

Furthermore, anonymized user information after processing is used to analyze actions and preferences of anonymized users, for example, and an instruction to send an advertisement mail or the like to a specified user is output to the service provider device 2 together with the analyzed information according to the analyzed result, so that optimum sales promotion services can be performed to specified users based on the analyzed information.

[0142]

Further, since the original user information is processed as anonymized user information in the service provider device 2 or the service infrastructure provider device 3 side, the service infrastructure provider device 3 side which is a third party can perform information analysis freely so as to support sale promotions of restaurants (service receivers) 1.

Embodiment 2

[0143]

According to the above-described embodiment, the information processing unit 2112 is disposed on the service provider device 2 side, but in order to have the information processing unit disposed on the service infrastructure provider device 3 side, it is preferable to design the information processing unit so that the above-described information processing is performed after the information analyzing process via the information analysis unit 3112 of the service infrastructure provider device 3 is performed.

Thereby, the analyzing process performed by the information analysis unit 3112 can perform analysis using the original user information, so that a more accurate analyzed result can be expected.

[0144]

Further, by providing the information processing unit on the side of the service infrastructure provider device 3 side, when the service infrastructure provider device 3 provides analyzed results to the service provider devices 2 and 2′, for example, the place of origin (specified user) of the original user information cannot be specified by the analyzed information of the analyzed result.

In such case, a correspondence table associating the specified users (such as specified users A, B and so on) with

the anonymized users (anonymized users X, Y and so on) and associating the anonymized user information with the original user information of the specified users must be provided to the service provider device 2 side. According to this arrangement, the service provider device having received the anonymized user information can specify the type of the user to which the anonymized user information corresponds.

Embodiment 3

[0145]

It is assumed that embodiments 1 and 2 analyze the anonymized user information from a single service provider device 2 in the service infrastructure provider device 3, and provide the analyzed result as a second service to a single service provider device 2.

[0146]

However, an arrangement is adopted in which the service infrastructure provider device 3 receives a visitor information - reservation information (processed anonymized user information: information in which the member ID, the location and the date and time are combined as a set) I3 related to the user 111 from a service provider device other than the service provider 2, such as an information provider 2'' including hotels, movie theaters or the like shown in Fig. 2. The information from the information provider should preferably include location information, prediction analysis, weather and temperature. That

is, the information from the information provider can be added to consideration when providing the second service.

[0147]

In this case, it is preferable for the information analysis unit 3112 and the product planning - sales promotion support unit 3113 of the service infrastructure provider device 3 to introduce a collaboration filtering system that accumulates the preference information of the user based on the visitor information - reservation information I3 and the like, and estimates the preference of an anonymized user using the preference information that is similar to the preference analyzed by the anonymized user information of the anonymized user.

[0148]

In other words, as shown in Fig. 11, by receiving information (such as the visitor - reservation information) I3 related to the user 111 from the service provider 2’’ such as hotels or movie theaters in the analysis performed by the information analysis unit 3112 in step S025, it becomes possible to provide an appropriate service including this information and the analyzed information to the user 111.

[0149]

Further, the product planning - sales promotion support unit 3113 of the service infrastructure provider 3 adopts an arrangement having a function to provide a popular menu

information or an action prediction information S′ based on the analyzed result to a service provider device different from the service provider device 2, for example, a service provider/advertisement agency 2′ as shown in Fig. 2.

[0150]

In this case, since the service infrastructure provider device 3 handles the information received from the service provider device 2 as anonymized user information, no problem occurs by providing the analyzed result analyzed by the information analysis unit 3112 to the service provider / advertisement agency 2′ side.

[0151]

When the service infrastructure provider device 3 provides the analyzed result to other service provider devices 2′, as shown in Fig. 2, it is preferable to dispose a data utilization level measurement unit 3115 to the service infrastructure provider device 3, measure the utilization level of the information (data) by the user, and charge, compensate or clear fees according to the measured utilization level.

[0152]

Moreover, as shown in Fig. 2, the service infrastructure provider device 3 is equipped with a matching process unit 3114 for performing matching processes among various information, such as the order data / requisition data (foodstuff, producer, quantity, suggested price and so on) I5 and the foodstuff

production information (foodstuff, producer, production quantity, suggested price and so on) I6 of multiple service provider devices, such as the service provider device 2 and the producer platform (service provider device) 2’’’.

[0153]

Then, the service infrastructure provider device 3 receives the order data or the requisition data (foodstuff, producer, quantity, suggested price and so on) I5 from the service provider device 2 in step S031 of Fig. 11, receives the foodstuff production information (foodstuff, producer, production quantity, suggested price and so on) I6 from the producer platform 2’’’ in step S032, and performs a matching process of the two information in step S036. In steps S301 and S302, a process similar to step S023 should be performed if necessary from the viewpoint of preventing information leakage.

[0154]

As a result, it becomes possible to provide the foodstuff production information (foodstuff, producer, production quantity, suggested price and so on) I6 to the service provider device 2 in step S034, and to provide the order data or the requisition data (foodstuff, producer, quantity, suggested price and so on) I5 to the producer platform or the producer side in step S035.

[0155]

The present invention is not restricted to the preferred embodiments described above, and can include various

modifications. For example, the above-described embodiments are described in detail so as to facilitate understating of the present invention, and not all the components described herein must be equipped to realize the present invention. A portion of the configuration of a preferred embodiment can be replaced with the configuration of another embodiment, or a configuration of a preferred embodiment can be added to the configuration of another embodiment. A portion of the configuration of each embodiment can be added to, deleted from, or replaced with the configuration of other embodiments.

[0156]

All or a portion of the configurations, functions, processing units and processing means described above can be realized via hardware such as an integrated circuit designed for that purpose. Further, the respective configurations and functions can be realized via a software by having a processor interpret programs for realizing the respective functions and execute the same. Programs, tables, files and other information for realizing the respective functions can be stored in storage devices such as memories, hard disks and SSDs (Solid State Drives), or storage media such as IC cards, SD cards and DVDs.

[0157]

Only the control lines and information lines considered necessary for description are illustrated, and not all the control lines and information lines required for fabrication are

shown. Actually, it can be considered that almost all the components are mutually connected.

Reference Signs List

[0158]

1 Restaurant (service receiver)

2, 2′, 2′′, 2′′′ Service provider device

21 Server for service provider

211 Computing means

212 Storage means (storage device including DB)

213 Interface means

2112 Information processing unit

3 Service infrastructure provider device

31 Server for service infrastructure provider

311 Computing means

312 Storage means (Storage device including DB)

313 Interface means

3112 Information analysis unit

CLAIMS

1. A service providing method providing an additional service as a second service using a service providing system comprising a service provider device of a service provider targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device; the service providing method comprising the following steps:

(1) an original user information gathering step of gathering user information of the plurality of specified users as original user information including an identifier, a sub-identifier and other information, and further having an execution instruction ID added thereto;

(2) a secrecy processing step of the original user information for subjecting information having high secrecy out of the original user information of the plurality of specified users having been gathered in the original user information gathering step to a masking process and/or a filtering process;

(3) an anonymizing process step of performing an anonymizing process to an identifier and a sub-identifier included in the original user information subjected to the

secrecy processing step so that a single user cannot be specified;

(4) a step of storing the information of the anonymized user having been subjected to the anonymizing process as anonymized user information;

(5) a step of storing a correspondence between the anonymized user and the specified user;

(6) an anonymized user information analysis step of analyzing an action characteristics of the anonymized user using the anonymized user information;

(7) an analyzed result output step of achieving an analyzed result through analysis of the action characteristics of the anonymized user using the anonymized user information;

(8) an action instruction step of outputting an action instruction with respect to a specified anonymized user based on the analyzed result achieved by the analyzed result output step, simultaneously as issuing the execution instruction ID;

(9) an analyzed result providing step of providing the analyzed result to the service provider device of the plurality of service providers with the execution instruction;

(10) a step of executing the additional service as the second service with respect to a specified user corresponding to the anonymized user by referring to the already stored correspondence between the anonymized user and the specified

user when the action instruction is output with respect to the specified anonymized user;

(11) a step of detecting the execution instruction ID added to the original user information when the specified user executes the additional service according to step 10; and

(12) a data utilization level measurement step the execution instruction for measuring the utilization level of the analyzed result by the user based on detection of the execution instruction ID added to the original information.

2. A service providing system composed of a service provider device of a service provider targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device;

the service provider device including:

a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means;

the service provider-side computing means including:

an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user and

having an execution instruction ID added thereto as original user information via the interface means; and

a communication execution processing unit for outputting the specified user information as original user information via the interface means to the service infrastructure provider device;

the service provider-side storage means including:

an original user information storage unit for recording the original user information of the plurality of specified users;

the service infrastructure provider device including:

a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means;

the service infrastructure provider-side computing means including:

an original user information gathering unit for gathering the original user information transmitted from the service provider device via the interface means;

a secrecy processing unit for subjecting information having high secrecy out of the original user information to a masking process and/or a filtering process;

an anonymizing process unit for converting an identifier and a sub-identifier of the specified user included in the secrecy-processed user information as an information of an anonymized user so that a specified user cannot be specified;

an information analysis unit for analyzing the anonymized user information; and

an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an execution instruction of an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction with respect to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID;

the service infrastructure provider-side storage means including:

a secrecy-processed user information storage unit for storing the secrecy-processed user information;

an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified user; and

a data utilization level measurement unit for detecting the execution instruction ID added to the original user information when the specified user executes the additional service, and measuring the utilization level of the analyzed result by the user based on the detection of the ID;

wherein

the service infrastructure provider device executes an additional service as a second service with respect to the specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

3. The service providing system according to claim 2, wherein

the additional service as the second service is an advertising action instruction for a specified user corresponding to an anonymized user, and based on an instruction from the additional service action instruction unit, a product planning - sales promotion support unit transmits an advertisement for the specified user corresponding to an anonymized user via the interface means.

4. A service providing system composed of a service provider device of a plurality of service providers targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support

service as a first service to the plurality of service receivers through the service provider device;

the service provider device including:

a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means;

the service provider-side computing means including:

an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user and further having an execution instruction ID added thereto as original user information via the interface means;

a secrecy processing unit for performing a masking process and/or a filtering process to information having high secrecy out of the specified user information; and

an output unit for outputting the information subjected to the secrecy processing as execution instruction secrecy-processed user information via the interface means to the service infrastructure provider device;

the service provider-side storage means including:

an original user information storage unit for recording the original user information of the plurality of specified users;

the service infrastructure provider device including:

a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means;

the service infrastructure provider-side computing means including:

a secrecy-processed user information gathering unit for gathering the secrecy-processed user information transmitted from the service provider device via the interface means;

an anonymizing process unit for converting an identifier and a sub-identifier of the specified user included in the secrecy-processed user information as an information of an anonymized user so that a specified user cannot be specified;

an information analysis unit for analyzing the anonymized user information;

an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID; and

a data utilization level measurement unit for detecting the execution instruction ID added to the original information when the specified user executes the additional service, and

measuring the utilization level of the analyzed result by the user based on the detection of the ID;

wherein

the service infrastructure provider-side storage means including:

a secrecy-processed user information storage unit for storing the secrecy-processed user information provided via the interface means from the service provider device;

an anonymized user information storage unit for storing the anonymized user information; and

an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified user; wherein

the service infrastructure provider device executes an additional service as a second service to a specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

5. The service providing system according to claim 4, wherein

the additional service as the second service is an advertising action instruction for a specified user corresponding to an anonymized user, and based on an instruction from the additional service action instruction unit, a product planning - sales promotion support unit transmits an advertisement for the specified user corresponding to an anonymized user via the interface means.

6. A service providing system composed of a service provider device of a plurality of service providers targeting a plurality of service receivers that a plurality of specified users use, and a service infrastructure provider device of a service infrastructure provider providing a primary business support service as a first service to the plurality of service receivers through the service provider device;

the service provider device including:

a service provider-side computing means, a service provider-side storage means, and a service provider-side interface means;

the service provider-side computing means including:

an original user information gathering unit for gathering a specified user information composed of an identifier, a sub-identifier and other information of the specified user and further having an execution instruction ID added thereto as original user information via the interface means;

a secrecy processing unit for performing a masking process and/or a filtering process to information having high secrecy out of the specified user information;

an anonymizing process unit for converting an identifier and a sub-identifier of a specified user included in the secrecy-processed user information as an anonymized user information so that a specified user cannot be specified; and

an output unit for outputting the information subjected to the anonymizing process as the anonymized user information via the interface means to the service infrastructure provider device;

the service provider-side storage means including:

an original user information storage unit for recording the original user information of the plurality of specified users;

an anonymized user information storage unit for storing the anonymized information as an anonymized user information; and

an anonymized user - specified user correspondence storage unit for storing the correspondence between the anonymized user and the specified user;

the service infrastructure provider device including:

a service infrastructure provider-side computing means, a service infrastructure provider-side storage means, and a service infrastructure provider-side interface means;

the service infrastructure provider-side computing means including:

an anonymized user information gathering unit for gathering the anonymized user information transmitted from the service provider device via the execution instruction interface means;

an information analyzing unit for analyzing the gathered anonymized user information;

an additional service action instruction unit for outputting to the service provider device an action instruction of an additional service as a second service composed of one of the following services: a service for providing an execution instruction of an analyzed result related to the anonymized user by the information analysis unit, and a service for outputting an action instruction with respect to the anonymized user based on the analyzed result, simultaneously as issuing the execution instruction ID; and

a data utilization level measurement unit for detecting the execution instruction ID added to the original information when the specified user executes the additional service, and measuring the utilization level of the analyzed result by the user based on the detection of the ID;

wherein

the service infrastructure provider-side storage means including:

an anonymized user information storage unit for storing the anonymized user information provided via the interface means from the service provider device;

wherein

the service infrastructure provider device executes an additional service as a second service with respect to a specified user corresponding to the anonymized user by referring to the correspondence between the anonymized user and the specified user in the anonymized user - specified user correspondence storage unit based on an action instruction from the additional service action instruction unit, and utilizes the measurement of the utilization level of the analyzed result as billing information.

7. The service providing system according to claim 6, wherein

the additional service as the second service is an advertising action instruction with respect to a specified user corresponding to an anonymized user, and based on an instruction from the additional service action instruction unit, a product planning - sales promotion support unit transmits an advertisement for the specified user corresponding to an anonymized user via the interface means.