

DATA DISTRIBUTION SYSTEM,
DATA BUSINESS GATEWAY SYSTEM
FOR IMPLEMENTING THE DATA DISTRIBUTION SYSTEM, AND
DATA DISTRIBUTION METHOD

5

FIELD OF THE INVENTION

[0001]

The present invention relates to a data distribution system for properly and effectively using data owned by companies/groups in different industry sectors which are connected via a network or individuals, as a system for data trading between plural data handling systems which each transmit and receive data independently. In other words, it relates to a data distribution system which makes distribution of various types of data open in order to construct a data distribution market in which closed data exchanges within systems are made open.

[0002]

In addition, the present invention relates to a data business gateway system which enables and promotes data trading (data distribution) even between independent systems. Furthermore, the present invention relates to a data distribution method which enables data trading between independent systems.

25 [0003]

In the application filed as a prior application (Japanese Patent Application No. 2012-149943), the present inventors describe a service provision system which provides services such as business applications and information to service
5 receiving companies, for example, at a portal site through a network. More specifically, it relates to a service provision system in which a service providing company gathers service receiving companies such as restaurants in the restaurant industry, hotels and inns in the lodging industry, and movie
10 theaters in the amusement industry and runs a portal site to provide the functions required by the service receiving companies, for example, main business support service functions such as a reservation function (reservation service) and a business system function (business SaaS).

15 [0004]

More specifically, the present invention does not concern data distribution within a closed system in which a specific service providing company provides service to plural service receiving companies as subscribers. The present invention
20 provides a system and method in which plural service providing companies with different business purposes can distribute information for service which they provide to plural service receiving companies as their subscribers, not as closed data within a closed system but as an open data distribution market.

25 [0005]

More specifically, the present invention relates to a data business gateway system (hereinafter sometimes simply called "DBG system") which has a junction function to enable distribution of the following data and promote fair data
5 distribution: for example, (a) closed data closed within a specific system which provides service from a specific service company to specific subscribers, (b) closed data closed within a system other than the specific service system, (c) customer data managed by a service platform company which provides a
10 service platform to a service providing company, (d) third party data from a third party company, (e) all types of data publicly available on the Net including open data transmitted from public institutions, groups, companies, and individuals, and (f) data obtained by searching/blending such data.

15 [0006]

In other words, while the prior application (Japanese Patent Application No. 2012-149943) concerns an invention focusing on a service provision system which provides a main business support service function as a function required by a
20 service receiving company (for example, a reservation function or business system function), the present invention intends to construct a proper and open data distribution market for closed data within a closed system. Specifically the present invention provides a data business gateway system and data
25 distribution method for that purpose.

[0007]

In this specification, the terms used herein are correlated in a complicated manner, so the terms used herein are defined in advance as follows. Although the terms are defined here in accordance with the prior application (Japanese Patent Application No. 2012-149943), the definitions here are not completely the same as in the prior application and if a term is defined differently, the definition given below prevails.

10 [0008]

“user”: an individual, group or company which includes a specific user (an individual, group, or company which is identifiable) and an unspecific user (individual, group or company which is unidentifiable or hardly identifiable). The terminal or the like which the user uses in this system is called “user terminal”. Hereinafter, the term “individual” concerning the user includes a group or company as a user. An individual, group, or company which uses the system without the mediation of a “service providing company” defined below may be specially called “third party”.

20 [0009]

“service receiving company”: a business entity which receives a business support function through the system and provides service to the user; generally an SMB (Small and Medium Business) entity such as a store, place of business, or

office. The system component device installed on the part of the service receiving company is called "service receiving company device". Here the expression "installed on the part of" does not mean only that the device is located in the service receiving company. The expression "installed on the part of" is used below in the same way.

[0010]

"service providing company": a business entity which provides a business service function through the system, in which the system component device installed on the part of the service providing company is called "service providing company device".

[0011]

"service platform company": a business entity which provides a platform to implement a business service function to the service providing company and service receiving company, in which this term is used in the same meaning as a data business gateway platform company.

The platforms provided by the "service platform company" are classified into two types: one is a platform which provides a business application to support a main business and the other is a platform which provides a data processing application to anonymize or normalize data.

Generally the "service platform company" collects information from a service receiving company device and a

service providing company device as needed under a contract and processes the information and provides the processed information to the service receiving company and service providing company.

5 In addition, the “service platform company” operates a gateway system to provide closed data as open data to the data distribution system and provides a data processing function for that purpose to the user, service receiving company, service providing company and third party. In other words, the
10 services provided by the “service platform company” include a service to provide an ordinary business function and a service for fair distribution of data.

 The system component device installed on the part of the service platform company is called “service platform company
15 device.”

[0012]

 “main business support service”: a service which the service providing company provides to the service receiving company to support a main business, such as a reservation
20 function or business SaaS. (reservation function, business system function, etc.)

[0013]

 “data processing service”: a main service to distribute data or a service to enable transmission and reception of
25 various types of data (closed data and open data) in the DBG

system, which is performed through the data gateway system of the "service platform company device." The data gateway system can provide a data processing application (for anonymization, normalization, etc.) to the service receiving company, service providing company and user.

[0014]

"reception of data (information)": this expression means not only reception of data (information) but also creation of data (information) in the service platform company device by operation of an external system. This is because external data (information) is imported into the system of the service platform company device or data is newly created, resulting in the formation of the same database, though it depends on whether there "is" or "not" transfer of data (information).

[0015]

As for various types of data, closed data provided by the service providing company is, for example, anonymized user data or business data; customer data provided by the service platform company is customer data on a customer (small-scale company such as a store as a subscriber) of the service providing company; and third party data provided by a third party is data from a system irrelevant to the service providing company, for example, crawling data on the Net or sales data (POS data, statistical data, position information, behavior record information, etc.). Also, open data is open

data available to the public such as data on the Net, a book or publication.

BACKGROUND ART

5 [0016]

In recent years, service provision systems which provide, to service providing companies which provide specific business services to service receiving companies (stores, etc.) such as restaurants using the Internet or the like, service platforms
10 as platforms for the specific business services (reservation function service, etc.), and support the businesses of the service receiving companies through the business services based on the service platforms have been spreading.

[0017]

15 This kind of service provision system has a service platform company device, a service providing company device, a service receiving company device, and a user terminal. The service platform company device is a system or device which provides a function or service based on the provided service
20 platform, for example, an SaaS (Software as a service) type business system, to the service providing company device. The service providing company device is a system or device which receives a business system (business SaaS) based on the service platform provided by the service platform company
25 device and customizes the business system so as to meet a

request from the service receiving company (or directly from the user) and provides it to the service receiving company. The service receiving company device is, for example, a device which provides user information provided by the user to the service providing company device and the user terminal is a terminal which enables the user to enter user information and provides it to the service receiving company device.

[0018]

For example, according to Patent Document 1 (JP-A-2009-93569), in the case of transfer from an SaaS environment to an SI environment, sunk cost and opportunity loss are reduced in a business service which has been initially used in the SaaS form; when the business service is transferred from an SaaS business environment (Company A) to an SI environment (City B), a service address list which records addresses for the business service is provided in City B and the addresses in the service address list are updated upon business service transfer. When the business data accumulated in Company A is to be transferred, a data address list which records business data addresses is provided in Company A and City B and the addresses in the address lists in both of them are updated upon business data transfer. For such updating, a technique which changes the access method so as to make the addresses logically identical is disclosed.

[0019]

Also, in JP-A-H09-319791 (Patent Document 2), food inventory information and shelf life information are extracted from a merchandise management system at a store such as a supermarket or department store, products which contribute to the seller's sales promotion are combined according to these conditions and introduced in a framework of a cooking menu and information related to the cooking menu is visually presented to consumers for the purpose of supporting the sales promotion of the seller effectively in a consistent manner and with a product specified by an input device as a key, the central processing unit extracts a cooking menu in which the product (ingredient) is used, from a memory unit. The cooking menu to be searched is specified by the input device and the central processing unit extracts product inventory information and shelf life information related to the product needed for the specified cooking menu from the memory unit and decides whether or not its use is effective for sales promotion. The decision result is displayed on a display unit and sales promotion personnel select the cooking menu to be used for sales promotion. Detailed information on the selected cooking menu is outputted on the display and printer installed in the store. This is means to address the problem.

[0020]

Also, Non-Patent Document 1 is a disclosure of technology entitled "Personal Information Anonymization Technology" and

it discloses anonymization technology to use collected
personal information as corporate assets.

[0021]

Furthermore, though particular documents are not
5 mentioned here, in systems for providing goods and service,
such as Suica (registered trademark of East Japan Railway
Company) and T-Point (registered trademark of Culture
Convenience Club Co., Ltd.) systems, there have been trading
systems for trading of goods and service between providers of
10 goods and service and receivers of goods and service, as the
related art.

CITATION LIST

Patent Document

15 [0022]

Patent Document 1: JP-A-2009-93569

Patent Document 2: JP-A-H9(1997)-319791

Non-Patent Document

[0023]

20 Non-Patent Document 1:

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

SUMMARY OF THE INVENTION

25 PROBLEMS TO BE SOLVED BY THE INVENTION

[0024]

Patent Document 2 describes the configuration of a sales promotion system which supports sales to consumers by a store. Concretely, it describes that information to select a combination of products to be promoted at the store, such as goods in stock, overstocked goods, prospective overstocked goods, and goods near their expiration dates, to promote these products effectively is provided to assist the sales promotion personnel in decision making and a selected cooking menu is presented to consumers through an information terminal installed in the store so that the seller is supported for effective and efficient sales promotion.

[0025]

However, the sales promotion support system described in Patent Document 2 is suitable for effective combination or selection of many types of information related to one store and is intended only for sales promotion of one store based on limited information obtained from the store and only for sales promotion with limited applicability.

[0026]

Also, data provision business through the conventional trading system is a trading scheme for provision of goods and service in a closed group of companies, groups and/or individuals. In other words, it is a limited closed trading system though it involves many affiliated companies. Furthermore, it is a system for "pull type" one-way trading

from a data providing company to a specific customer in which goods and service are traded in a limited manner.

[0027]

The sales promotion support system in Patent Document 2
5 is a scheme which collects sales POS data from plural stores and store groups and trades the sales POS data through the system. Therefore, purchase and sale of data (sales POS data) between different companies through the system is possible. However, obviously the data receiving party cannot receive
10 data from the system if it has not adopted and installed the system. In other words, it cannot import data on companies or stores which adopt another system and cannot blend or mix the imported data, posing the problem that data distribution is limited and more effective use of data is impossible.

15 [0028]

In addition, such existing system is mainly intended for collection of sales POS data and is not intended to import other types of data such as reservation data, purchase data and so on.

20 [0029]

On the other hand, there are companies and groups which think that their own data may be provided if they get a merit and there are companies and groups which like to receive value-added data. However, if data is to be utilized/applied
25 through the existing system and companies going to provide

data are SMB companies such as stores, the number of such SMB companies may be hundreds of thousands or more in which each SMB company manages data individually. Therefore, enormous amounts of data must be merged for the use of data as effective data, which necessitates each SMB company system to create SQL (Structured Query Language: database language (query language) to operate and define data in a relational database management system) text or necessitates an SMB company to create data in accordance with a standard format. This is difficult technically and in terms of skill and hard to realize.

[0030]

Furthermore, in the data utilization/application business field, it is a common practice for data providing companies to add public data currently open to the public such as data from the ministries and agencies, meteorological data and data from various bodies. However, the conventional data utilization business has adopted a method that public data is customized for each customer company individually and provided. Therefore, the degree of freedom for the customer company to search public data and merge its own data with the public data has been low. This is because basically public data and the data obtained by processing it are not assumed to be blended or mixed with the customer's own data. In short, the conventional data utilization/application business adopts a method that

public data is customized for each customer company and provided. Another reason is that public data is not prepared so as to be searchable on the assumption that it may be blended or mixed with other data.

5 [0031]

In addition, the conventional data providing business is a pull type one-way business from a data providing company to a specific customer in which the data providing company analyzes data in response to a request from the specific
10 customer and supplies the analysis result. In this case, knowledge about what kind of request for data analysis is received from a customer company with what kind of profile is not accumulated systematically and apparently such knowledge is not utilized.

15 [0032]

However, for liberalization of data distribution, it is absolutely necessary to construct a system which ensures fairness. However, even if data distribution is liberalized, unregulated data distribution should not be allowed. For this
20 reason, up to now data distribution has been limited to closed distribution within a closed system as protected by a specific contract. For a system which ensures fairness in data distribution, protection of personal information and protection of copyrights are indispensable. Specifically the
25 former concerns how information on an individual person is

processed into anonymized information or information from
which the individual person cannot be identified, while the
personal information is unknown. The latter is that the
information which is used is traceable or that the original
5 information on which the information is based is known.

[0033]

Therefore, the present invention is intended to provide a
data business gateway system (DBG system) in which plural
individuals, companies, groups and systems or system groups
10 (hereinafter these may be called "systems, etc.") can
participate in an open state and participating systems, etc.
can perform fair data trading.

[0034]

Consequently the present invention provides a DBG system
15 which has a junction function to enable liberalization of
interactive data distribution between plural companies and
promote fair data distribution.

MEANS FOR SOLVING THE PROBLEMS

20 [0035]

A data distribution system according to the present
invention is characterized in that a data business gateway
platform company system is, when viewed on an information
Input side, connected to a service providing company system,
25 an external system, and a third party system, and when viewed

on an information Output side, connected to a service providing company system and a third party system as data receiver systems, in which the data business gateway platform company has, as subsystems, a service platform providing
5 system which provides main business support service for the service providing company system and a gateway system which performs data collection/provision and makes a decision as to whether or not to disclose data; and the gateway system receives and accumulates closed data closed in each of the
10 plural service providing company systems and publicized external data from the external system and, when there is a data request from the service providing company system or the third party system as the data receiver system, searches/extracts/blends the received and accumulated data and
15 decides whether or not to disclose the data, and if it is decided to be disclosable, provides the data to the service providing company system or the third party system as the data receiver system which has requested the data.

[0036]

20 Furthermore, the data distribution system according to the present invention is characterized in that, upon reception of data from the service providing company system as a data transmitting party or the third party system, the gateway system gives an electronic tally as evidence of the reception
25 and, if a data request from the service providing company

system or the third party system as the data receiver system is accompanied by the same electronic tally, allows provision of information related to received information accompanied by the electronic tally.

5 [0037]

Furthermore, the data distribution system according to the present invention is characterized in that, upon reception of data from the service providing company system as a data transmitting party or the third party system, the gateway
10 system gives an electronic tally as evidence of the reception and, if a data request from the service providing company system or the third party system as the data receiver system is accompanied by the same electronic tally, allows provision of anonymized data of received information accompanied by the
15 electronic tally after associating the data with unanonymized original user information thereof.

[0038]

Furthermore, the data distribution system according to the present invention is characterized in that, upon reception
20 of data to be pushed positively from the service providing company system as a specific data transmitting party or a user of the service providing company system or the third party system, the gateway system transmits the data to be pushed to a service providing company system as a data receiver system
25 or a user of the service providing company system or a third

party system.

[0039]

A gateway system for implementing a data distribution system according to the present invention is characterized in that a data business gateway platform company system is, when viewed on an information Input side, connected to a service providing company system, an external system, and a third party system, and when viewed on an information Output side, connected to a service providing company system and a third party system as data receiver systems, in which the gateway system receives and accumulates closed data closed in each of the plural service providing company systems and publicized external data from the external system and, when there is a data request from the service providing company system or the third party system as the data receiver system, searches/extracts/blends the received and accumulated data and decides whether or not to disclose the data, and if it is decided to be disclosable, provides the data to the service providing company system or the third party system as the data receiver system which has requested the data; and if the data providing party has neither a business application nor a data processing application in its own system and uses functions of applications in the platform company, data is received in a sequence below:

(1) Request for provision of a business application (data

providing party)

(2) Provision of a business application function (platform company)

(3) Provision of data (data providing party)

5 (4) Registration of received data in a user data DB (platform company)

(5) Request for publicization of data (data providing party)

(6) Process for publicization of data (platform company)

(7) Registration of publicized data (platform company);

10 if the data providing party has a business application provided by the platform company in the system and uses a function of a data processing application in the platform company, data is received in a sequence below:

(1) Request for provision of a business application (data
15 providing party)

(2) Provision of a business application function (platform company)

(3) Generation and registration of data by performance of business (data providing party)

20 (4) Transmission of business data (data providing party)

(5) Registration of user business data (platform company)

(6) Request for publicization of data (data providing party)

(7) Process for publicization of data (platform company)

(8) Registration of publicized data (platform company);

25 if the data providing party has both a business

application provided by the platform company and a data processing application in the system, data is received in a sequence below:

- (1) Request for provision of a business application (data providing party)
- (2) Provision of a business application (platform company)
- (3) Generation and registration of data by performance of business (data providing party)
- (4) Process for publicization of data (data providing party)
- (5) Provision of publicized data (data providing party)
- (6) Registration of publicized data (platform company);

if the data providing party receives neither a business application nor a data processing application from the platform company and does not use the applications in the platform company, data is received in a sequence below:

- (1) Accumulation of data in the system (data providing party)
- (2) Process for publicization of data (data providing party)
- (3) Provision of publicized data (data providing party)
- (4) Registration of publicized data (platform company); and

if the data providing party receives a data processing application function from the platform company, data is received in a sequence below:

- (1) Accumulation of data in the system (data providing party)
- (2) Request for a data processing application function (data providing party)

(3) Provision of a data processing application function

(platform company)

(4) Process for publicization of data (data providing party)

(5) Provision of publicized data (data providing party)

5 (6) Registration of publicized data (platform company)

[0040]

Furthermore, the gateway system for implementing the data distribution system according to the present invention is characterized in that, when there is a data request from the
10 service providing company system or the third party system as the data receiver system, a data utilization record in the data request from the data receiver system are learned and accumulated and data which matches a result of the learning is recommended or provided.

15

EFFECT OF THE INVENTION

[0041]

According to the present invention, when plural systems (several system groups), for example, systems of service
20 providing companies, third party companies and public institutions are affiliated with each other, a larger volume of versatile data (turnover, reservation, inventory, purchase, others, etc.) can be imported and the data can be blended and analyzed so that the analysis result can be provided to a
25 broader range of data receiving parties and data distribution

can be liberalized by distribution (transmission and reception) of the data and used in a wider application range. In addition, because an item that is transmitted and received is data, it can be transmitted and received on a server.

5 Furthermore, unlike conventional transfer of goods or service, the present data business gateway system can control all the rights, management responsibility, and transactions of data.

The other objects, elements and effects of the present invention will more fully appear from the following
10 description in this specification.

BRIEF DESCRIPTION OF THE DRAWINGS

[0042]

Fig. 1 is a block diagram showing a whole system
15 including a DBG system according to the present invention;

Fig. 2 is a block diagram showing details of a gateway system used in the DBG system according to the present invention;

Fig. 3 is an explanatory diagram showing the processing
20 sequence in the block diagram of the system with focus on transmission and reception of data in the DBG system according to the present invention;

Figs. 4 are sequence diagrams illustrating types of data reception sequence in the case where a data providing party in
25 the DBG system according to the present invention receives a

business application from a data business platform company;

Figs. 5 are sequence diagrams illustrating types of data reception sequence in the case where a data providing party in the DBG system according to the present invention does not
5 receive a business application from a data business platform company;

Fig. 6 is a flowchart showing an example of the data reception sequence in an embodiment of the data distribution system according to the present invention.

10 Fig. 7 is a flowchart showing another example of the data reception sequence in the embodiment of the data distribution system according to the present invention;

Fig. 8 is a flowchart showing a further example of the data reception sequence in the embodiment of the data
15 distribution system according to the present invention;

Fig. 9 is a flowchart showing a further example of the data reception sequence in the embodiment of the data distribution system according to the present invention;

Fig. 10 is a flowchart showing a further example of the
20 data reception sequence in the embodiment of the data distribution system according to the present invention;

Fig. 11 is a flowchart showing a push information transmission sequence in the embodiment of the data distribution system according to the present invention;

25 Fig. 12 is a flowchart showing a searching/blending

sequence in the embodiment of the data distribution system according to the present invention;

Fig. 13 is a diagram showing an example of the per-user table in the embodiment of the data distribution system according to the present invention;

Fig. 14 is a diagram showing an example of the per-profile table in the embodiment of the data distribution system according to the present invention;

Fig. 15 is a diagram showing an example of the data attribute table in the embodiment of the data distribution system according to the present invention;

Fig. 16 is a diagram showing an example of the industry sector master table in the business master DB in the embodiment of the data distribution system according to the present invention;

Fig. 17 is a diagram showing an example of the industry sector master table in the business master DB in the embodiment of the data distribution system according to the present invention;

Fig. 18 is a diagram showing an example of the data type master table in the data type master DB in the embodiment of the data distribution system according to the present invention;

Fig. 19 is a diagram showing an example of the number-of-employees table in the employment size master DB in the

embodiment of the data distribution system according to the present invention;

Fig. 20 is a diagram showing an example of the time master table in the embodiment of the data distribution system according to the present invention; and

Fig. 21 is a diagram showing the information stored in the data attribute DB in the embodiment of the data distribution system according to the present invention.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0043]

In order to address the above problem, the data business gateway system in the present invention imports third party data supplied from a third party system and open data supplied from an open system in addition to closed data supplied from a service providing company system and closed data supplied from a service platform company system (acquisition/collection). The imported data is normalized and stored/accumulated in a database and further the normalized data is extracted/blended or mixed and similarly stored/accumulated in the data DB. When there is an access request from a data receiving company system wishing to use it, the normalized data and/or blended or mixed data is searched to extract data which matches the access request and a decision is made as to whether or not to disclose the searched/extracted data to the party issuing the

access request, and if it is decided that disclosure of the data is allowable, the search/extraction result is provided to the data receiving party. Thus the data distribution system according to the present invention has a data junction
5 function and promotes fair data distribution and liberalization of data distribution.

[0044]

In this case, data normalization is performed, for example, by a granularity control system. Basically, unlike
10 goods and service, data can be transmitted and received on a server. The data transmission/reception platform has a function as a data junction in data distribution.

[0045]

The holders of the original rights to data in the data
15 business gateway in the present invention are users (individual consumers, etc.), groups/companies (stores, etc.), service providing companies, and a service platform company, and particularly personal information and business information are both highly confidential and each system is responsible
20 for strict data management. The data distribution system according to the present invention has a data junction function which enables fair and free data distribution between systems. It is desirable that the service platform company can perform the data junction function, though not limited thereto.

25 [0046]

The gateway with a data junction function is, for example, a personal information gateway, a store information gateway, a service company information gateway, or a service platform company gateway. For example, the personal information gateway and store information gateway are managed by anonymized data management (fictitious ID management, etc.). Also, in the data business gateway, it is desirable to give an electronic tally as evidence of data reception for management. This fictitious ID can be restored to an identifier ID if it can be confirmed (for example, by an electronic tally) that it indicates the holder of the right to the data.

[0047]

As for transmission/reception and management of data, although each service providing company may receive a data processing application from the service platform company and perform transmission/reception and management of data, preferably the service platform company should perform batch management of data.

[0048]

In order to address the issue that the degree of utilization of data including public data should be increased, data including public data is structured so as to cope with any system before being supplied. Concretely, for example, data is supplied in the form of a data set with a cube data structure which is usable in online analytical processing (Fig.

3). Here, for a cube data set, axes (time axis, area axis, industry sector axis) and granularity (origin, unit(width)) corresponding to each system (group) are set so that it becomes possible to acquire and search data which can be merged with data belonging to any system (group). In other words, a granularity control system in which axes and granularity are adjusted is employed.

[0049]

This system includes a system to manage the so-called PDCA cycle (Plan-Do-Check-Act Cycle) from data preparation through data transmission/reception to utilization result feedback and has a knowledge base to manage the knowledge obtained from the PDCA cycle. For example, concretely the profile (industry sector, department, size, etc.) of a company which requests original data is managed and the search keywords which the company frequently uses or the items of data which it periodically requests are stored. This constitutes a knowledge base. For example, based on this knowledge base, the ranking of search keywords and the ranking of requested data are compared for each of the profiles of requesting companies, so updating of the structure of the original data (axis, value, period) or addition to it or recommendation (prediction function) as a push service to customer companies with similar profiles can be made. As a consequence, the PDCA cycle can be implemented by the system

by entering the result into the knowledge base again.

[0050]

Hereinafter, an embodiment of a DBG system according to the present invention will be described in further detail referring to drawings. However, the present invention is not limited to the embodiment disclosed in the drawings but it includes design variations which those skilled in the art can make easily.

[0051]

10 In the embodiment of the present invention, an explanation will be given of distribution of various types of data which include: (a) user data or business data from plural service providing company devices which provide a business service platform, (b) user data or business data from plural service providing company devices which do not provide a business service platform, (c) open data publicly available on an external system, and (d) third party data from plural third parties. Specifically, an explanation will be given of a concrete configuration and method to enable and promote fair and free data distribution between a device which supplies data and a device which requests and receives data.

[0052]

Fig. 1 is a block diagram showing the whole system including the gateway system 400 of a data gateway platform company as the main part of the DBG system 100 (the whole

system shown in Fig. 1), in which the upper half marked "Input side" represents an information receiving side or scene and the lower half marked "Output side" represents an information output side or scene. Fig. 1 includes a legend in which the meanings of the symbols in the figure are written. These symbols are used with the same meanings in the other figures as well.

[0053]

In the DBG system 100, the data business gateway platform company system 400 is connected through a network (not shown in Fig. 1) to plural service providing company systems 200A which provide a service platform, plural service providing company device systems 200B which do not provide a service platform, an external system 300 in which external data, SNS (social networking service), blogs, etc. are publicized, and a third party system 600 which wishes to receive distributed data. 200A (200B) in the upper half of Fig. 1 (Input side) and 200A (200B) in the lower half (Output side) are one and the same system.

[0054]

Usually a service providing company 210 in the service providing company system 200A is under contract with the service platform company 400 concerning provision of a specific service platform and deals with data of plural SMB companies 230 such as stores a1 to am through the provided

business service platform. In addition, the service providing company system 200A handles not only business data of the SMB companies and so on but also user data collected from plural consumers 250 as the users of the SMB companies 230. The users
5 are the final users of the service such as consumers (regardless of whether they are individuals, groups or companies). On the other hand, a service providing company 215 in the service providing company system 200B is not under contract with the service platform company 400 concerning
10 provision of a business service platform, but the service providing company system 200B has the same functions as the service providing company system 200A except for that point.
[0055]

The third party system 600 shown on the Input side (upper
15 half) and that on the Output side (lower half) may be an identical system or different systems. In the present system, the third party system 600 (Output side) is not requested to provide its information but it is presented here as a system going to get data distributed in the DBG system 100.

20 [0056]

Obviously the third party system 600 (Input side) can provide its information to the system 100 in a push manner. In this case, the third party system 600 may handle transaction data of plural business partners, but data fairness must be
25 guaranteed for data distribution in the present system. For

example, leakage of user data collected from plural consumers as users of a business partner and business data of the business partner must be strictly prevented. Specifically an extreme caution must be taken in making sales data of clients, business partners or the like open data. The reason is that sales data may include POS data, statistical data, position information, consumer behavior record information from which an individual person can be identified.

[0057]

The external system 300 handles publicized external data from the outside. In other words, the external system 300 is an open system which handles open data including, for example, public data publicly available on the Net, data on social media such as SNS and blogs, books and publications. However, even such data should not be distributed freely. Even external public data has to be processed for publicization.

[0058]

As mentioned above, in the DBG system 100 according to the present invention, each of the connected systems may be connected to receive business service constantly or connected to receive data processed as open data.

[0059]

Before describing the configuration of the DBG system 100 and its sequences, first the system for providing a business service platform which is the main invention of the prior

application (Japanese Patent Application No. 2012-149943)
which the present inventors have filed will be summarized
below. Although this system is not a major feature of the
present invention, the present invention also has the same
5 configuration and sequences.

[0060]

In the DBG system 100 according to the present invention,
a service platform providing system 410 of the data business
gateway platform company 400 has a unit 770 which provides a
10 business application for implementing business service such as
reservation management, sales management, and customer
management to the service providing company system 200A.

[0061]

For example, the service providing company 210 has an
15 application server (not shown in detail) which customizes the
reservation management service according to a request from a
user company group 230 and receives and manages reservation
information of a user (consumer) 250 from a service receiving
company 230. In other words, the business of the service
20 receiving company 230 is supported by collaboration between
the service platform company device 400 and service providing
company 210.

[0062]

Generally a system which provides such business support
25 scheme addresses the need of each service providing company.

Therefore, the service platform company device 400 provides main business support service such as reservation management, sales management and customer management to the service providing company 210 and the service providing company 210 provides customized main business support service (starts the service) to the service receiving company 230 and manages original user information based on the provided main business support service.

[0063]

An example of this service provision method may be SaaS. SaaS is an ICT utilization environment in which the service providing company or service receiving company can use a function (main business support service) provided by an information system (software) via a network without any particular need for construction/introduction of a new system.

[0064]

Generally, SaaS offers a merit that required service can be immediately used as necessary without the need for construction of a special system. In addition, since SaaS makes it unnecessary to prepare a special internal environment, the time required to start operation of the function (service) can be shortened and cost can also be reduced. Also, the Internet or WAN is used and thanks to technical innovations of networks and browsers, the system can be operated as easily as when an in-house system is used.

In addition, a service providing company device or service receiving company which uses the SaaS or SI and operation/maintenance service provided by the service platform company 400 can expect cost reduction and increased sales.

5 [0065]

Conventionally each service providing company device 210 is configured to individually manage specific user original information (original user information) related to users (including individuals, groups and companies) 250 which is collected from service receiving companies 230. This means that the system is not designed to enable positive activity for sales promotion to a specific user using the original user information. In other words, no consideration is given to positive utilization of the original user information.

15 [0066]

One reason is that the original user information which each service providing company device 210 collects from the service receiving companies 230 includes personal information which identifies an individual, group or company as a specific user 250. Therefore, up to now, although it has been possible for the service platform company 400 and service providing company 210 to transmit and receive original user information between them under a contract, generally it has been impossible for the service providing company device 210 to provide original user information including personal

information to the service platform company device 400 as a third party or other service providing company devices.

[0067]

Specifically, under the restrictions of the Personal
5 Information Protection Law in Japan, the conventional service
providing company device is configured to function
individually and independently between the service platform
company and service providing company. Therefore, it has been
impossible that the original user information collected and
10 managed lawfully by each service providing company device is
mutually used between each service providing company and the
service platform company.

[0068]

On the other hand, modern society is an information
15 society in which enormous amounts of information go around on
the Net, sometimes in excess of the transmission capacity.
While such information is accumulated day by day, a method for
enabling fair effective use or application of such big data
should be established.

20 In view of such circumstances, the present invention
processes the original user data (information) collected from
a service receiving company or its users into anonymized user
data (information), analyzes the anonymized user data
(information) and provides it to an anonymized user according
25 to the analysis result. For example, taking an advertising

action to a group of users classified by behavior, preferences, etc. and anonymized is useful for companies. For example, it is possible to provide service targeting specific users through communication means such as mail or the Net.

5 [0069]

In the DBG system 100 according to the present invention, when viewed on the information Input side, the service providing company systems 200A and 200B, external system 300, and third party system 600 are connected and when viewed on
10 the information Output side, the service providing company systems 200A and 200B and third party system 600 are connected. The data business gateway platform company 400 has, as subsystems, a service platform providing system 410 which provides main business support service and a gateway system
15 450 which performs data collection/provision (search/extraction/blending) and decision about disclosability and learning.

[0070]

The service platform providing system 410 provides a
20 business application to the service providing company 200A as indicated by the dotted arrow. The gateway system 450 provides a data processing application to the service providing company 200A in order to collect data from systems as indicated by the hatched arrow. The service platform providing system 410
25 collects various types of public data from open systems and

publicizes (make open) the data (anonymization, normalization, etc.) using the received data publicizing means in the gateway system or the received data publicizing means provided using the data processing application providing unit 770 as

5 necessary. Then, the collected and publicized data is merged (blended or mixed) according to a request of a data disclosure requesting party and given to the disclosure requesting party.
[0071]

In response to a data disclosure request from a system as
10 indicated by the arrow (dotted line), the gateway system 450 makes a decision about disclosability and discloses only data that is decided to be disclosable. The procedure for decision about disclosability is not described in detail here; a common approach is, for example, to have a data providing party
15 select the extent of disclosure of the data provided by it (indicates, specifies or limits the disclosability range, etc.) and permits disclosure of the data including only disclosable information in searching or blending. Another possible approach is that when specific data is received from
20 a system, an electronic tally (special tally data, unique ID or electronic key) is given to the system and whether or not to disclose the data is decided according to whether or not a data request from a system is a data request with the same electronic tally as that of the information providing party.

25 [0072]

Furthermore, if the service providing companies 200A and 200B (210, 215) and third party system 600 wish to provide their data to data receiving parties in the present system positively for utilization and application of the data, a push data provision method may be adopted in which they express their wish in advance so that the data (information) is positively distributed through the present system. For example, the data to be provided is accompanied by a flag to indicate the intention to provide the data (information) positively and if a user is decided to match the intention of the push information providing party, the data (information) is positively supplied to the user.

[0073]

As shown in Fig. 2, the service platform company 400 in the DBG system 100 according to the present invention includes, as subsystems, the service platform providing system 410 and gateway system 450. Fig. 2 particularly shows details of the configuration of the gateway system 450.

[0074]

The gateway system 450 is a system intended to get data from the service providing companies 210 and 215 or service receiving companies 230 and 235 such as stores and includes a control unit 710 to manage/control the reception and registration of data, a data reception/registration section 720 to receive and register data and a memory unit 730, a

searching/blending unit 740 to search and blend data, a knowledge unit 750 to learn from search records, etc. to enhance knowledge for searching, blending, etc., a push information transmitting unit 760 to transmit information in a push manner, and a data processing application providing unit 770 to support data processing tasks.

[0075]

The data transmitted from the external system is received by the data reception/registration section 720 through an interface. In the control unit 710, an anonymized data management section 711 manages all the processes for anonymization of input data and a data normalization management section 713 manages all the processes for data normalization and registers the data. Fig. 2 illustrates that data related to personal information, store information, service company information and platform company information is managed and processed separately for each type of information. As data processing tasks, electronic tally processing, a received data publicization process, a data searching/extracting/blending process, and a data disclosability decision process are shown. When the platform company 400 receives data, a unique electronic tally is transmitted to the data transmitting party as evidence of data reception as a management process by the electronic tally management section 712. This serves as a notice that the data

has been normally received and can also be used as a key to demonstrate the normal transmitter of the data. The electronic tally transmitted here is stored in association with the registered user data.

5 [0076]

The data reception/registration section 720 includes a data registration section 721, a data attribute registration section 722, a disclosability information registration section 723 and an electronic tally registration section 724. The data
10 received by the data reception/registration section 720 is stored in the memory unit 730. The memory unit 730 includes a user data DB 731, a user information master DB 732, a data/data attribute DB 733, a utilization record DB 734, and a various master DBs 735.

15 [0077]

If a data processing application is unavailable in a system going to supply data, the data processing application providing unit 770 of the gateway system 450 can provide a data processing application as indicated by the hatched arrow
20 in Fig. 2 in order to support the data processing task in the external system. In this case, "provision of an application" not only means that an entire application is supplied from the platform company system 400 to the service providing company 200, etc. and the application resides and runs in the service
25 providing company 200, etc. This also means that although the

application itself is not imported into the service providing company 200, the application residing in the service platform company system 400 is made to run as if the application were running in the service providing company system. This is true
5 for provision of a data processing application and provision of a business application.

[0078]

When a request for data provision (arrow (dotted line) is made from the service providing company 210, the data request
10 is accompanied by a user ID and if available, by an electronic tally. The electronic tally, obtained previously at the time of provision of the data, is intended to demonstrate that the information related to the data request has already been provided. In the control unit 710 of the gateway system 450,
15 the electronic tally management section 712 decides whether or not the electronic tally is legitimate and if it is decided as legitimate, provides data according to the data request.

[0079]

Fig. 3 is an explanatory diagram showing the processing
20 sequence in the system block diagram with focus on transmission and reception of data in the DBG system according to the present invention. In Fig. 3, the service providing company (service providing company system) 200 supplies closed data and the external system 300 supplies open data. A data
25 receiving party (data receiving party system), which is

designated by reference sign 500, makes a request for data and data which meets the request is extracted and supplied to it. Also the push information transmitting unit 760 performs push information search processing and if the data is decided to be
5 disclosable by decision as to whether or not to disclose data, transmits the push information.

[0080]

When the gateway system 450 receives closed data from the service providing company (service providing company system)
10 200, the gateway system 450 starts processing of the data. In data processing by the gateway system 450, various types of data processing are performed: data processing under management by a personal information gateway, processing under management by a store information gateway, processing under
15 management by a service company information gateway or processing under management by a platform company information gateway. In processing under management by the personal information gateway and processing under management by the store information gateway, data anonymization is performed. In
20 processing under management by each information gateway, an electronic tally is given to the supplied data to prove reception of the data. Also, the received data undergoes a publicizing process (anonymization, normalization) and is accumulated as a data cube in the database 730.

25 [0081]

If the data receiving party (data receiver system) 500 requests data for a particular purpose among the data accumulated in the gateway system 450, the gateway system 450 receives the request and searches, extracts and blends data which meets the purpose. As the data which meets the purpose is extracted, disclosability decision means 780 makes a decision as to whether or not to disclose the data and only disclosable data is supplied.

[0082]

In the knowledge unit 750, the data request of a specific data receiving party (data receiver system) 500 is recorded and accumulated in the utilization record DB 751 and the data utilization tendency of the specific data receiving party (data receiver system) 500 is learned. Furthermore, based on the user profile of the data receiving party, the data utilization tendency of companies belonging to the profile is learned. The gateway system 450 learns the way of searching according to the data search record of the specific data receiving party (data receiver system) 500.

[0083]

Although the knowledge unit 750 and push information transmitting unit 760 are shown as separate units in Fig. 2, alternatively the push information transmitting unit 760 may be located in the knowledge unit 750 as shown in Fig. 3.

Consequently, push information transmission can be information

transmission to the specific data receiving party (data receiver system) 500 which is suitable for the information research record learned by the knowledge unit 750. When data is transmitted from the gateway system 450, the data to be
5 transmitted is processed for publicization.

[0084]

Figs. 4(A), 4(B), 4(C) and Figs. 5(A) and 5(B) are sequence diagrams showing the data provision sequences according to the present invention, of which Fig. 4(A) shows a
10 data reception sequence in a system in which the data providing party has neither a business application nor a data processing application and uses the functions of the applications in the platform company, Fig. 4(B) shows a data reception sequence in a system in which the data providing
15 party has a business application provided by the platform company and uses the function of the data processing application in the platform company, Fig. 4(C) shows a data reception sequence in a system in which the data providing party has both a business application and a data processing
20 application, Fig. 5(A) shows a data reception sequence in a system in which the data providing party receives neither a business application nor a data processing application from the platform company and does not use the applications in the platform company, and Fig. 5(B) shows a data reception
25 sequence in a system in which the data providing party

receives neither a business application nor a data processing application from the platform company but receives the function of a data processing application from the platform company.

5 Data reception sequence 1 in the case of Fig. 4(A)

(1) Request for provision of a business application (data providing party)

(2) Provision of a business application function (platform company)

10 (3) Provision of data (data providing party)

(4) Registration of received data in the user data DB (platform company)

(5) Request for publicization of data (data providing party)

(6) Process for publicization of data (platform company)

15 (7) Registration of publicized data (platform company)

Data reception sequence 2 in the case of Fig. 4(B)

(1) Request for provision of a business application (data providing party)

20 (2) Provision of a business application function (platform company)

(3) Generation and registration of data by performance of business (data providing party)

(4) Transmission of business data (data providing party)

25 (5) Registration of user business data (platform company)

- (6) Request for publicization of data (data providing party)
- (7) Process for publicization of data (platform company)
- (8) Registration of publicized data (platform company)

5 Data reception sequence 3 in the case of Fig. 4(C)

- (1) Request for provision of a business application (data providing party)
- (2) Provision of a business application (platform company)
- (3) Generation and registration of data by performance of
- 10 business (data providing party)
- (4) Process for publicization of data (data providing party)
- (5) Provision of publicized data (data providing party)
- (6) Registration of publicized data (platform company)

Data provision sequence 4 in the case of Fig. 5(A)

- 15 (1) Accumulation of data in the system (data providing party)
- (2) Process for publicization of data (data providing party)
- (3) Provision of publicized data (data providing party)
- (4) Registration of publicized data (platform company)

20 Data provision sequence 5 in the case of Fig. 5(B)

- (1) Accumulation of data in the system (data providing party)
- (2) Request for a data processing application function (data providing party)
- (3) Provision of a data processing application function
- 25 (platform company)

(4) Process for publicization of data (data providing party)

(5) Provision of publicized data (data providing party)

(6) Registration of publicized data (platform company)

[0085]

5 Figs. 6 to 12 are flowcharts showing the steps of the various processing sequences of the data business gate system according to the present invention.

 Fig. 6 is a flowchart showing an example of the data reception sequence in the data distribution system according
10 to the present invention (data provision sequence 1).

 Referring to the figure, as data collection is started at Step S600, the data business gateway platform company system provides a business application to a service company system at Step S601. Then, at Step S602, it receives data of stores from
15 the service providing party system and at Step S603, it registers the data in the user data DB. Then, at Step S604, it receives a publicization request to make the data open. When it receives the publicization request, it issues a data ID at Step S605, issues an electronic tally at Step S606, transmits
20 the electronic tally to the service providing party system at Step S607, and registers the data and the attributes of the data in the data/data attribute DB at Step S608.

 Then, at Step S609, a decision is made as to whether or not the service providing company system wishes data push
25 issuance. If it is decided at this step that there is no such

wish, data collection is ended at Step S610. If there is such wish, the sequence proceeds to Step S1100 at which the push information transmission process (stated later) is performed.

[0086]

5 Fig. 7 is a flowchart showing another example of the data reception sequence in the data distribution system according to the present invention (data provision sequence 2).

Referring to the figure, as data collection is started at Step S700, the service company system receives a business
10 application from the data business gateway platform company system at Step S701 and receives data from stores at Step S702. Then, at Step S703, it transmits the data to the data business gateway platform company system under the business application.

The data business gateway platform company system
15 receives the data from the service providing company system at Step S704 and registers the data in the user data DB at Step S705.

Then, it receives a publicization request at Step S706 and performs a publicization process, that is, normalization
20 or anonymization according to the request at Step S707. Normalization is a process such as data cleansing or granularity adjustment.

Next, it issues a data ID at Step S708, issues an electronic tally at Step S709, transmits the electronic tally
25 to the service providing company system at Step S710, and

registers the data and the attributes of the data in the data/data attribute DB at Step S711.

Then, at Step S712, a decision is made as to whether or not the service providing company system wishes data push issuance. If it is decided at this step that there is no such wish, data collection is ended at Step S713. If there is such wish, the sequence proceeds to Step S1100 at which the push information transmission process (stated later) is performed.

[0087]

Fig. 8 is a flowchart showing a further example of the data reception sequence in the data distribution system according to the present invention (data provision sequence 3).

Referring to the figure, what is different from the sequence shown in Fig. 7 is that an application to publicize data is requested to the platform company system (S801) and the service providing company system performs a publicization process (S8021, S8022) at Step S802 using its data processing application and transmits the publicized data to the data business gateway platform company system (S803). Therefore, the same steps as in Fig. 7 are designated by the same reference signs and their descriptions are omitted.

[0088]

Fig. 9 is a flowchart showing a further example of the data reception sequence in the data distribution system according to the present invention (data provision sequence 4).

Referring to the figure, what is different from the sequence shown in Fig. 7 is that at Step S901 the service providing company system decides whether or not a publicization process is necessary and if it is decided that a publicization process is necessary, at the next step 902, performs a publicization process using its own business application and transmits the publicized data to the data business gateway platform company system (S903). In addition, although the service providing company system tentatively takes a step S901 for publicization, the sequence also includes a step S904 to decide whether or not a publicization process is necessary for data distribution in the present system. Therefore, the same steps as in Fig. 7 are designated by the same reference signs and their descriptions are omitted.

[0089]

Fig. 10 is a flowchart showing a further example of the data reception sequence in the data distribution system according to the present invention (data provision sequence 5).

Referring to the figure, as data collection is started at Step S1000, the service providing company system transmits a program request to the data business gateway platform company system at Step S1001 and receives an application transmitted from the data business gateway platform company system in response to the request at S1002. At Step S1003, it performs a publicization process, that is, a normalization step S10031

and an anonymization step S10032, and at Step S1004, it transmits the publicized data to the data business gateway platform company system.

The subsequent steps are the same as in Figs. 6, 7, and 8 and are designated by the same reference signs and their descriptions are omitted.

[0090]

Fig. 11 is a flowchart showing the sequence for push information transmission in the data distribution system according to the present invention.

Referring to the figure, as a push information transmission process is started at Step S1100, at Step 1101 a decision is made as to whether or not there is a request for transmission to users and if it is decided that there is a request for transmission to users (Yes), the data attributes in the per-user utilization record DB are fixed and sorting by value (counter value) is performed (Step S1102), high-ranking users are extracted at Step S1103, and a decision about disclosability is made on a per-user basis at S1104, and data is transmitted to the users to which data is disclosable (S1105). If it is decided at Step S1101 that there is no request for transmission to users (S1101) and if it is decided at Step S1106 that there is a request for transmission to profiles, the data attributes in the per-profile utilization record DB are fixed and sorting by value (counter value) is

performed at Step S1107, high-ranking profiles are extracted at Step S1108, users having the profile are extracted at Step S1109, and a decision about disclosability is made for each user at S1110, and data is transmitted to the users to which
5 data is disclosable (S1111). In this example, it is shown that the sequence from Step S1102 to Step S1105 and the sequence from Step S1107 to Step S1111 are carried out sequentially.

However, the sequence from Step S1102 to Step S1105 and the sequence from Step S1107 to Step S1111 may be carried out
10 concurrently. If that is the case, when it is decided that both the sequences have been ended, the push information transmission process is ended (S1112).

[0091]

Fig. 12 is a flowchart showing the searching/blending
15 process sequence. Referring to the figure, as a searching/blending process is started at Step S1200, a search/blending request is received at Step S1201 and the data DB is searched according to the request at Step S1202.

Then, at Step S1203, a decision is made as to whether or
20 not there is data which meets the searching/blending conditions. If it is decided at the step S1203 that there is data which meets the searching/blending conditions, a decision about disclosability is made at Step S1204 and if disclosable, the result of searching/blending is transmitted. Then, at Step
25 S1205 the per-user table in the user record DB is updated and

at Step S1206 sorting by value is performed with users fixed. Then, at Step S1207 the data DB is searched for data which meets the conditions of high-ranking data attributes or user profiles and at Step S1211 a decision is made as to whether or
5 not there is such data, and at Step S1212 a decision about disclosability is made. If it is decided at the step that the data is disclosable, a recommendation is transmitted to the service receiving party system at Step S1213.

Also, at Step S1208, the per-profile table in the user
10 record DB is updated and at Step S1209, sorting by value is performed with profiles fixed. Then, at Step S1210 the data DB is searched for data which meets the conditions of high-ranking data attributes or user profiles and at Step S1211 a decision is made as to whether or not there is such data, and
15 at Step S1212 a decision about disclosability is made. If it is decided at the step that the data is disclosable, a recommendation is transmitted to the service receiving party system.

When the transmission of the recommendation has been
20 finished at Step S1213, the searching/blending process is ended at Step S1214.

If there is no table at Step S1207 or if there is no disclosed data at Step S1203 or Step S1211, the searching/blending process is ended at Step S1214.

25 [0092]

Next, various types of data which are distributed in the data distribution system according to the present invention will be described.

Fig. 13 is a diagram showing an example of the per-user
5 table.

In the figure, the dimensions of the per-user table include User ID (U0001 . . .), Time (T001 . . .), Data Type (D001, . . .), Data Source (U0001, . . .), Industry Sector (I001, . . .), Yearly Sales (S001, . . .), Employment Size (E001, . . .; label) and Number of Cases. Here, Time, Data Type, and Data Source represent the attributes of a searched user, and Industry Sector, Yearly Sales, and Employment Size represent the profile of a company in which the data originates, and Number of Cases represents a value (counter
10 value).
[0093]

Fig. 14 is a diagram showing an example of the per-profile table. In the figure, the dimensions of the per-profile table include Industry Sector (I001, . . .), Yearly
20 Sales (S001, . . .), Date (2012/01/17), Data Type (D001, . . .), Data Source (U0001, . . .), Industry Sector (I001, . . .), Yearly Sales (S001, . . .), Employment Size (E001, . . .; label), and Number of Cases. Here, Industry Sector and Yearly Sales represent the attributes of a searched user, Date, Data Type,
25 and Data Source represent the attributes of data viewed by the

searched user, and Industry Sector, Yearly Sales, and Employment Size represent the profile of a user in which the data viewed by the searched user originates, and Number of Cases represents a value (counter value).

5 [0094]

Fig. 15 is a diagram showing an example of the data attribute table. In the figure, the dimensions of the data attribute table include Data ID (00000001, . .), Source (U0003), Time, Type (D002, . .), Tally, Disclosability or the
10 like.

[0095]

Fig. 16 is a diagram showing an example of the industry sector master table in the business master DB. In the figure, the dimensions include Industry Sector ID (I001, . .) and
15 Industry Sector. Industry Sector is, for example, finance (bank), finance (credit union), finance (securities) or the like.

[0096]

Fig. 17 is a diagram showing an example of the industry
20 sector master table in the business master DB. In the figure, the dimensions include Yearly Sales ID (S001, . .) and Yearly Sales.

[0097]

Fig. 18 is a diagram showing an example of the data type
25 master table in the data type master DB. In the figure, the

dimensions include Data Type ID (D001, . .) and Industry Sector. Industry Sector is, for example, turnover, sale, purchase, or the like.

[0098]

5 Fig. 19 is a diagram showing an example of the employment size master table in the employment size master DB. In the figure, the dimensions include Employment Size ID (E001, . .) and Number of Employees.

[0099]

10 Fig. 20 is a diagram showing an example of the time master table. In the figure, the dimensions include Time ID (T001, . .) and Time Interval. Time Interval is, for example, daily, weekly, monthly, yearly or the like.

[0100]

15 Fig. 21 is a diagram showing the information stored in the data attribute DB. In the figure, the data attribute DB includes various types of information such as user (unique) ID, company name, date, period, data type, data granularity, data source, electronic tally or the like. User (unique) ID
20 includes, for example, profile, industry sector, yearly sales, the number of employees (employment size), location, or the like. Data Type includes information such as turnover, sale, purchase, shipment, total, statistics, person's name (ID), or the like. Data Source denotes the list of data IDs (original
25 =0) on which statistics are based.

[0101]

The present invention is not limited to the above embodiment and includes other various forms of embodiments. In other words, the above embodiment has been explained in detail
5 for easy understanding of the present invention, but an embodiment of the present invention need not include all the elements of the above embodiment. Some elements of an embodiment may be replaced by elements of another embodiment or elements of an embodiment may be added to another
10 embodiment. Also, for some elements of an embodiment, addition of other elements, deletion or replacement is possible.

[0102]

In addition, the above elements, functions, processing sections, processing means and so on may be, in part or whole
15 thereof, implemented, for example, by hardware designed as an integrated circuit. Also, the above elements, functions and so on may be implemented by software as a program which a processor interprets and executes to implement the functions. The program to implement the functions and information
20 including tables and files may be replaced by a memory or a memory unit such as a hard disk or SSD (Solid State Drive) or a recording medium such as an IC card, SD card or DVD.

[0103]

Although the control lines and information lines which
25 are considered necessary for explanation are shown herein, all

the control lines and information lines of the product are not shown. It may be thought that actually almost all elements are interconnected.

5 Industrial Applicability

[0104]

As stated so far, in the present invention, a larger volume of and more diverse and versatile data (data related to turnover, reservation, inventory, purchase, etc.) can be
10 imported, blended and analyzed by connection with several system groups of service providing companies 200. In addition, the present invention is expected to bring about a technical effect that the system can control all of the rights, responsibilities and transactions concerning data.

15 [0105]

In addition to the above, the following effect can be expected. For example, from the viewpoint of a data receiving party (data purchaser company, consumer, etc.), basically the data receiving party can search/collects and draw available
20 data, among the data which has passed through various data gateways at the data junction of the service platform company system, simply by one click.

[0106]

Furthermore, by adjusting the data structure (axis and
25 value) of public data to the data structure of the system

group, public data with high availability become available.

Another technical effect is that as the number of PDCA cycles increases, the scale of the knowledge base becomes larger and its accuracy becomes higher and self-learning and self-organization are performed. When the scale and accuracy increase, for example, a prediction function (recommendation) to encourage a company to use data which has not been used so far can be realized.

[0107]

Furthermore, from the viewpoint of a company which transmits and receives (distributes) data, the company can expect a system which is more advantageous than an existing closed system in terms of scale and versatility/diversity, because, for example, even though only several systems as a system group of service providing companies are involved, hundreds of thousands of stores participate in the systems and the number of their consumers may be several millions. Also, from the viewpoint of an SMB company, the data which it has can be positively sold without difficulty, that is, the data can be used as an asset.

[0108]

Furthermore, when a company becomes a service platform company which manages a data gateway where the demand and supply of data match, it can expand its business by providing new service platforms such as an analysis platform and a

platform for new service by utilization of received data, for example, a platform for recommendation, etc. Also when plural service providing company systems which participate in the platform business provided by the service platform company
5 system distribute their customer data as segment information, the data can be mutually used as an object of sales promotion.

[0109]

In that case, more effective sales promotion can be carried out by listing only customer data segments whose
10 granularity meets a given condition and, at the same time, showing the past sales promotion achievement/effect for each customer data segment (customers read mails, looked at advertisements or linked product pages, purchased products, came to the store, etc.).

15 [0110]

Also, since the system has a scheme to make public data searchable and enable it to be blended or mixed with data in the system according to the present system, a business effect that utilization of data is activated will be achieved.

20 [0111]

Also, since the system has a knowledge base, it becomes possible to meet potential third party needs. Due to the existence of the knowledge base, the present system has a feature that it constantly changes and grows and is expected
25 to offer a more advantageous business effect than the other

systems.

CLAIMS

1. A data distribution system in which a data business gateway platform company system is, when viewed on an information Input side, connected to a service providing company system, an external system, and a third party system, and when viewed on an information Output side, connected to a service providing company system and a third party system as data receiver systems,
wherein the data business gateway platform company has, as subsystems, a service platform providing system which provides main business support service for the service providing company system and a gateway system which performs data collection/provision and makes a decision as to whether or not to disclose data; and
the gateway system receives and accumulates closed data closed in each of the plurality of service providing company systems and publicized external data from the external system and, when there is a data request from the service providing company system or the third party system as the data receiver system, searches/extracts/blends the received and accumulated data and decides whether or not to disclose the data, and if it is decided to be disclosable, provides the data to the service providing company system or the third party system as the data receiver system which has requested the data.

2. The data distribution system according to Claim 1,
wherein, upon reception of data from the service
providing company system as a data transmitting party or the
5 third party system, the gateway system gives an electronic
tally as evidence of the reception and, if a data request from
the service providing company system or the third party system
as the data receiver system is accompanied by the same
electronic tally, allows provision of information related to
10 received information accompanied by the electronic tally.

3. The data distribution system according to Claim 2,
wherein upon reception of data from the service providing
company system as a data transmitting party or the third party
15 system, the gateway system gives an electronic tally as
evidence of the reception and,

if a data request from the service providing company
system or the third party system as the data receiver system
is accompanied by the same electronic tally, allows provision
20 of anonymized data of received information accompanied by the
electronic tally after associating the data with unanonymized
original user information thereof.

4. The data distribution system according to Claim 1,
25 wherein, upon reception of data to be pushed positively

from the service providing company system as a data transmitting party or a user of the service providing company system or the third party system, the gateway system transmits the data to be pushed to a service providing company system as
5 a specific data receiver system or a user of the service providing company system or a third party system.

5. A gateway system for implementing a data distribution system in which a data business gateway platform company
10 system is, when viewed on an information Input side, connected to a service providing company system, an external system, and a third party system, and when viewed on an information Output side, connected to a service providing company system and a third party system as data receiver systems,

15 wherein the gateway system receives and accumulates closed data closed in each of the plurality of service providing company systems and publicized external data from the external system and, when there is a data request from the service providing company system or the third party system as
20 the data receiver system, searches/extracts/blends the received and accumulated data and decides whether or not to disclose the data, and if it is decided to be disclosable, provides the data to the service providing company system or the third party system as the data receiver system which has
25 requested the data; and

if the data providing party has neither a business application nor a data processing application in its own system and uses functions of applications in the platform company, data is received in a sequence below:

- 5 (1) Request for provision of a business application (data providing party)
- (2) Provision of a business application function (platform company)
- (3) Provision of data (data providing party)
- 10 (4) Registration of received data in a user data DB (platform company)
- (5) Request for publicization of data (data providing party)
- (6) Process for publicization of data (platform company)
- (7) Registration of publicized data (platform company);

15 if the data providing party has a business application provided by the platform company in the system and uses a function of a data processing application in the platform company, data is received in a sequence below:

- (1) Request for provision of a business application (data
20 providing party)
- (2) Provision of a business application function (platform company)
- (3) Generation and registration of data by performance of business (data providing party)
- 25 (4) Transmission of business data (data providing party)

- (5) Registration of user business data (platform company)
- (6) Request for publicization of data (data providing party)
- (7) Process for publicization of data (platform company)
- (8) Registration of publicized data (platform company);

5 if the data providing party has both a business application provided by the platform company and a data processing application in the system, data is received in a sequence below:

- (1) Request for provision of a business application (data
10 providing party)
- (2) Provision of a business application (platform company)
- (3) Generation and registration of data by performance of business (data providing party)
- (4) Process for publicization of data (data providing party)
- 15 (5) Provision of publicized data (data providing party)
- (6) Registration of publicized data (platform company);

 if the data providing party receives neither a business application nor a data processing application from the platform company and does not use the applications in the
20 platform company, data is received in a sequence below:

- (1) Accumulation of data in the system (data providing party)
- (2) Process for publicization of data (data providing party)
- (3) Provision of publicized data (data providing party)
- (4) Registration of publicized data (platform company); and

25 if the data providing party receives a data processing

application function from the platform company, data is received in a sequence below:

- (1) Accumulation of data in the system (data providing party)
- (2) Request for a data processing application function (data
5 providing party)
- (3) Provision of a data processing application function
(platform company)
- (4) Process for publicization of data (data providing party)
- (5) Provision of publicized data (data providing party)
- 10 (6) Registration of publicized data (platform company).

6. The gateway system for implementing the data distribution system according to Claim 5,

wherein, when there is a data request from the service
15 providing company system or the third party system as the data receiver system, a data utilization record in the data request from the data receiver system are learned and accumulated and data which matches a result of the learning is recommended or provided.

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