

DESCRIPTION

CONSUMER ASSESSMENT INFORMATION DISPLAY SYSTEM

Technical Field

[0001]

The present invention relates to a consumer evaluation information display system that, for example, collects and totalizes consumer evaluation information which is on the Internet and is related to a commodity evaluated by a consumer, and displays the collected and totalized consumer evaluation information on a sales display shelf of a commodity sold in a physical store.

Background Art

[0002]

In e-commerce on the Internet, consumer evaluation information obtained by a purchaser evaluating a commodity is displayed for each commodity for sale, and the purchaser generally purchases a commodity with reference to the evaluation (consumer evaluation information).

[0003]

Further, Patent Literature 1 discloses a configuration (a technique related to review by a purchaser) for displaying a commodity evaluation (consumer evaluation information) of the purchaser for each commodity in e-commerce.

Specifically, Patent Literature 1 discloses a sales support system having a function of supporting sales of commodities at a commodity sales site provided by a commodity sales site server. Then, the commodity sales site server provides "a commodity screen on which consumer evaluation information is displayed together with an image and a price of the commodity" to a user terminal.

Citation List

Patent Literature

[0004]

Patent Literature 1: JP 2017-208042 A (paragraph 0030, Fig. 3)

Summary of Invention

Technical Problem

[0005]

By the way, in the current Internet society, review evaluations (consumer evaluation information) of products, services, tastes and the like of consumers are large indicators of the value of goods, service quality, tastes related to meals, and the like. The current situation is that when using e-commerce on the Internet, without this consumer evaluation information, e-commerce cannot be activated.

[0006]

However, when purchasing a commodity in a physical store which really exists, there is no way to know the evaluation of the product in real use other than checking the actual commodity through five senses or asking a clerk, and even in a physical store, an increasing number of young people operate user terminals such as smartphones, search for consumer evaluation information on the Internet on the spot, and end up purchasing commodities using e-commerce.

Thus, it is troublesome and inconvenient for a consumer who has come to the store to search for consumer evaluation information on the Internet on the spot. That is, the product sales in the conventional physical store cannot sufficiently provide the information required at the time of the purchase determination of the consumer. As a result, in the sales in the conventional physical store, there is a possibility that the physical store may miss an opportunity to sell the commodity.

On the other hand, in the case of purchasing a commodity only by e-commerce on the Internet, since the actual commodity cannot be picked up and checked, the consumer often feels that the commodity is different from the image when the commodity arrives at hand.

[0007]

The present invention has been made in view of the

above-described problem, and an object thereof is to provide a consumer evaluation information display system capable of providing both virtual and real merits by presenting information required at the time of the purchase determination of the consumer to the consumer visiting the physical store without taking time and effort in order to improve convenience of the consumer using the physical store and to promote store activity of the whole society.

Solution to Problem

[0008]

The present invention made to solve the above-described problem is a consumer evaluation information display system that collects and totalizes consumer evaluation information related to a commodity evaluated by a consumer on the Internet, and displays the consumer evaluation information, which has been collected and totalized, on a sales display shelf of the commodity sold in a physical store, the consumer evaluation information display system including: a server that collects and totalizes the consumer evaluation information from countless WEB sites provided via the Internet and stores the consumer evaluation information which has been collected and totalized; a store-side/information processing apparatus that is installed in the physical store, performs communication processing with

the server via the Internet, acquires the consumer evaluation information stored in the server, and stores the consumer evaluation information which has been acquired; and a display terminal that is installed on the sales display shelf provided in the physical store in a manner of being paired with the commodity, wherein the server has a real-time update function of monitoring a change in the consumer evaluation information of the commodity on the WEB site connected to the Internet, updating the consumer evaluation information, which corresponds and has been stored, of the commodity when the change is confirmed, transmitting the consumer evaluation information, which has been updated, of the commodity to the store-side/information processing apparatus, and causing the consumer evaluation information stored in the store-side/information processing apparatus to be updated, and the store-side/information processing apparatus is capable of communicating with the display terminal, transmits the consumer evaluation information, which has been stored, to the display terminal, and causes the display terminal to display the consumer evaluation information.

[0009]

According to the above configuration, the server can collect and totalize a wide range of consumer evaluation information about a certain commodity from the Internet,

and cause a store-side/information processing apparatus installed in the physical store to store the consumer evaluation information of the commodity to be displayed on the display terminal installed in the physical store always in the latest state. That is, according to the above configuration, the consumer evaluation information on the commodities arranged in the physical store is always registered in the store-side/information processing apparatus in the latest state. Then, the store-side/information processing apparatus can display the consumer evaluation information registered in the latest state on a display terminal installed on a sales display shelf provided in the physical store in a manner of being paired with the commodity.

As a result, the consumer who visits the physical store can obtain the consumer evaluation information of the commodity by looking at the display terminal installed near the commodity while checking the actual commodity in the physical store by looking at or picking up the commodity. That is, according to the above-described configuration, it is possible to present the consumer evaluation information required at the time of the purchase determination of the consumer and to provide both virtual and real merits to the consumer who visits the physical store without taking time and effort.

[0010]

Further, according to the present invention, the information required at the time of the purchase determination is effectively provided to the customer in the physical store, and thus, it is possible to urge the consumer to purchase the commodity in the physical store, and it is possible to expect that the store activation of the entire society is achieved.

Further, according to the above-described configuration, since the data (the consumer evaluation information acquired from the server) is secured in the store-side/information processing apparatus installed in the physical store, when the Internet communication is disturbed, the operation of the display terminal in the physical store is still not disturbed.

With this configuration, it is possible to provide a customer visiting a store with a wide range of consumer evaluation information about commodities that cannot be obtained in a physical store in an ideal form.

[0011]

It is preferable that the server has a structure capable of specifying an interval of an update timing of the consumer evaluation information to be displayed on the display terminal to the store-side/information processing apparatus and the store-side/information processing

apparatus transmits the consumer evaluation information to the display terminal at the update timing specified by the server and causes the display terminal to display the consumer evaluation information and the display terminal is powered by a battery and includes a communication processing unit that performs an information update by a communication method with a reduced power consumption.

It can be said that this is a function that is necessarily required to actually display information in a physical store and the actual operation is often disturbed when this function is not provided.

[0012]

It is preferable that the display terminal includes a sensor capable of detecting a movement of an object in front and an NFC function unit capable of communicating with a mobile terminal and the sensor is capable of measuring a time during which the object which has been detected stays in a detection range.

Thus, the amount of information that can be provided in the physical store is significantly increased, and the store side can also grasp the trend of customers who visit the store.

[0013]

It is preferable that the server includes: a data management unit that accepts a login on a store

administrator basis and receives a registration of a commodity associated with the display terminal, and an API communication unit that is connected to a commodity information database such as a POS system for each of the stores or chain stores via the Internet to take in various data on the commodity including a number of the commodities sold which is unique to each of the stores or chain stores, and the server transmits the commodity information data of the commodity, which corresponds, to the store-side/information processing apparatus, and the store-side/information processing apparatus receives the commodity information data, transmits the commodity information data to the display terminal which corresponds, and causes the display terminal to display the commodity information data together with the consumer evaluation information.

[0014]

Thus, according to the present invention, it is possible for a store to install a display terminal to display only a specific commodity for which sales promotion is desired, and it is also possible to change a target commodity in the middle of operation. In addition, by taking in information from an API communication unit, it is possible to provide not only information of consumer evaluation on the Internet but also various information

that a customer who visits the store wants to know, such as number of commodities sold, remaining stock quantity, and price display in the physical store, which leads to activation of the physical store. By displaying the actual state of the number of commodities sold at the store in real time together with the consumer evaluation information, the displayed consumer evaluation on the Internet becomes more substantial, and by linking the Internet with the actual state, the interest of the consumer in the commodity can be aroused.

[0015]

It is preferable that a plurality of the display terminals is installed in the physical store, and the server receives and stores store management information including a current communication status, a current failure status, and a current battery exhaustion for each of the display terminals of each of the stores from the store-side/information processing apparatus of each of the stores, and provides the store management information of the store, which corresponds, to a user interface which the store administrator logs in to use.

Thus, according to the present invention, a function of always monitoring the operating state such as the communication state of each of the plurality of display terminals installed in the store is provided as a

management function which is necessarily required for the operation in the physical store, and the administrator can confirm the states such as the communication error, the battery exhaustion, and the failure of each display terminal through the management function of the server.

[0016]

Thus, according to the present invention, not only a wide range of consumer evaluations on a certain product (commodity) on the Internet are displayed in the physical store, but also functions such as management, operation, and display of specific information required in the store are provided, and thus, the store operator can actively promote the activation of consumption behavior in the physical store.

Advantageous Effects of Invention

[0017]

According to the present invention, it is possible to provide a consumer evaluation information display system capable of providing both virtual and real merits by presenting information required at the time of purchase determination of a consumer to the consumer who visits a physical store without taking time and effort. Further, according to the present invention, the information required at the time of the purchase determination of the

consumer is effectively provided in the physical store, and thus, it is possible to urge the consumer to purchase the commodity in the physical store, and as a result, it is possible to expect that the store activation of the entire society is achieved.

Brief Description of Drawings

[0018]

Fig. 1 is a schematic diagram showing an overall configuration of a consumer evaluation information display system according to an embodiment of the present invention.

Fig. 2 is a schematic diagram showing a functional configuration of a cloud server constituting the consumer evaluation information display system according to the embodiment of the present invention.

Fig. 3 is a schematic diagram showing a mechanical configuration of a data gateway constituting the consumer evaluation information display system according to the embodiment of the present invention.

Fig. 4 is a schematic diagram showing a functional configuration of a display terminal constituting the consumer evaluation information display system according to the embodiment of the present invention.

Fig. 5 is a schematic diagram showing an example of a process of collecting and totalizing consumer evaluation

information performed by a server of the consumer evaluation information display system according to the embodiment of the present invention.

Description of Embodiments

[0019]

Hereinafter, an embodiment of the present invention will be described with reference to the drawings.

[0020]

<<Overall configuration of consumer evaluation information display system>>

First, an overall configuration of a consumer evaluation information display system of the present embodiment will be described with reference to Fig. 1. Here, Fig. 1 is a schematic diagram showing the overall configuration of the consumer evaluation information display system of the present embodiment.

[0021]

The consumer evaluation information display system of the present embodiment collects and totalizes consumer evaluation information from a WEB site (a WEB page constituting the WEB site) on an Internet NW related to a commodity evaluated by a consumer, and displays the collected and totalized consumer evaluation information on a sales display shelf of a commodity sold in a physical

store.

[0022]

Specifically, the consumer evaluation information display system of the present embodiment includes a cloud server (hereinafter simply referred to as "server") 1 connected to the Internet NW, a data gateway (store-side/information processing apparatus) 100 installed in each store, and a plurality of display terminals 200 installed in each store.

[0023]

The server 1 collects and totalizes consumer evaluation information on each commodity evaluated by a consumer from WEB sites scattered on the Internet NW via the Internet NW and stores the collected and totalized consumer evaluation information. That is, the server 1 collects and totalizes the consumer evaluation information from the WEB sites on the Internet NW for each commodity, and stores the consumer evaluation information corresponding to each commodity in association with each commodity. Further, the server 1 communicates with the data gateway 100 of each store and synchronizes information required in each store for each store via the Internet NW. Specifically, the server 1 communicates with the data gateway 100 of each store, and transmits information required in each store (information including commodity evaluation information collected and

totalized by the server 1) to the data gateway of each store to store the information, thereby synchronizing information stored in the server 1 and information required in each store (information stored in the data gateway 100) for each store.

[0024]

Thus, in the present embodiment, the server 1 collects and totalizes a wide range of consumer evaluation information about each commodity from the Internet NW, and provides the totalized consumer evaluation information to the data gateway 100 of each store.

[0025]

The data gateway (store-side/information processing apparatus) 100 installed in each store is configured to be capable of communicating with the server 1 via the Internet NW. Then, the data gateway 100 performs communication processing with the server 1, acquires the consumer evaluation information (the consumer evaluation information stored in the server 1) from the server 1, and stores the acquired consumer evaluation information.

Thus, the data gateway 100 is installed respectively in each store, and stores consumer evaluation information (consumer evaluation information collected by the server 1 on the Internet NW) related to a commodity sold in the store (a predetermined commodity registered on the store

side).

[0026]

In addition, the display terminal 200 is installed on the sales display shelf provided in the store in a manner of being paired with the commodity. For example, the display terminal 200 for displaying the consumer evaluation information of the commodity is installed near (at a position close to) the commodity arranged on the sales display shelf provided in the store.

The display terminal 200 can communicate with the data gateway 100, and displays consumer evaluation information (consumer evaluation information of the commodity placed in the vicinity of the display terminal 200) sent from the data gateway 100.

[0027]

Note that a plurality of display terminals 200 can be installed in each store. For example, the display terminal 200 is set to be associated with a commodity to be promoted for sale in the store. In addition, the display terminal 200 acquires only the information corresponding to itself among the consumer display information related to the broadcast commodity from the data gateway 100, and displays the consumer display information related to the associated commodity.

[0028]

Thus, according to the present embodiment, the consumer who visits the physical store can obtain the consumer evaluation information of the commodity only by looking at the display terminal 200 installed near the commodity while checking the actual commodity placed on the sales display shelf by looking at or picking up the actual commodity. That is, according to the above-described configuration, the consumer who visits the physical store can acquire the consumer evaluation information required at the time of purchase determination of the consumer without operating his or her own smartphone or the like and without taking time and effort. That is, according to the present embodiment, it is possible to provide both virtual and real benefits to a consumer who purchases a commodity.

Further, according to the present embodiment, the information required at the time of the purchase determination of the consumer is effectively provided in the physical store, and thus, it is possible to urge the consumer to purchase the commodity in the physical store, and it is possible to expect that the store activation of the entire society is achieved.

[0029]

<<Configuration of server 1>>

Next, the configuration of the server 1 constituting the consumer evaluation information display system of the

present embodiment will be described with reference to Fig. 2.

Here, Fig. 2 is a schematic diagram showing a functional configuration of the server constituting the consumer evaluation information display system of the present embodiment.

[0030]

As illustrated, there are roughly 4 mechanisms in the server 1.

More specifically, the server 1 includes a public zone (A) for administering data communication with the Internet NW, a management zone (B) for managing the system for each store or each store group, a data zone (C) for storing data of the entire system, and a local zone (D) for performing data communication with the data gateway 100 installed in the physical store.

[0031]

The data zone (C) is provided with a database unit 15.

The database unit 15 stores an evaluation commodity information database 31, a net/consumer evaluation information database 32, a store/access information database 33, a store/commodity information database 34, and a consumer evaluation totalization database 35.

[0032]

Here, the evaluation commodity information database 31

is a database in which the commodity name and the commodity ID of the target commodity of the consumer evaluation desired to be displayed beside the commodity in the physical store are stored in association with each other.

On the Internet NW, different names are often used for different sites even for the same commodity, and a plurality of commodity names can be registered for one commodity. In the search for the consumer evaluation, the search is executed by using a plurality of names having different notation structures even for the same commodity, and thus, a wide range of information can be collected.

[0033]

The net/consumer evaluation information database 32 is a database in which information (URL information of a WEB page) for identifying a WEB page on which consumer evaluation information is posted for each commodity ID, time (year/month/day/hour/minute) when information is acquired from the WEB page of the consumer evaluation information, and "consumer evaluation information of commodity (for convenience of explanation, referred to as "net/consumer evaluation information")" acquired from the corresponding WEB page are stored in association with each other.

[0034]

The store/access information database 33 is a database

that stores, for each store ID identifying a store in which the data gateway 100 is installed, a login ID assigned on a store administrator basis of the store corresponding to the store ID, a password set on a store administrator basis corresponding to the store ID, and a communication key (gateway ID) of the data gateway 100 in the store of the store ID in association with each other.

[0035]

In the store/commodity information database 34, the store ID is associated with a display terminal ID of the display terminal 200 installed in the store. Similarly, the display terminal ID is associated with a commodity ID to be displayed and subjected to consumer evaluation.

In the store/commodity information database 34, a display update cycle (update timing) and a remaining battery level of the display terminal 200 installed in the store, a communication record between the display terminal 200 and the data gateway 100, and the like are also managed and stored.

[0036]

The consumer evaluation totalization database 35 stores information (for convenience of explanation, referred to as "totalization/consumer evaluation information") which is obtained by the server 1 by totalizing the consumer evaluations at the respective WEB sites associated with the

registered commodity IDs collected in the net/consumer evaluation information database 32 and summarizing the consumer evaluation results on the WEB for each commodity ID.

Note that the totalization/consumer evaluation information is data obtained by totalizing, for each commodity ID, consumer evaluation information obtained by calculation based on a predetermined rule with respect to various evaluations of different evaluation levels and evaluation categories acquired from the WEB pages.

[0037]

The public zone (A) is provided with a net search/totalization engine unit 11.

The net search/totalization engine unit 11, on the basis of "the commodity name of the target commodity of the consumer evaluation" registered in the evaluation commodity information database 31 stored in the DATA base unit 15 in the data zone (C), widely searches the Internet NW, acquires URL information of a WEB page on which consumer evaluation information on the target commodity corresponding to the commodity name is provided, and stores the acquired URL information in the net/consumer evaluation information database 32.

[0038]

The evaluation commodity information database 31

includes a registration commodity record having a field for registering the commodity ID of the target commodity of the consumer evaluation and a plurality of fields for registering the search commodity name of the target commodity of the consumer evaluation.

The "search commodity name" is registered by the administrator of the server 1 or the store administrator, the net search/totalization engine unit 11 searches the consumer evaluation page based on the corresponding commodity name, and the URL information of the discovered consumer evaluation page is registered in the net/consumer evaluation information database 32.

[0039]

At the same time as the registration of the URL information to the net/consumer evaluation information database 32, the net search/totalization engine unit 11 acquires "consumer evaluation information of commodity (total number of evaluators for consumer evaluation, information on how many levels of evaluation, evaluation element information, number of evaluators for each evaluation point)" (for convenience of explanation, referred to as "net/consumer evaluation information") from the WEB page.

Then, the net search/totalization engine unit 11 registers the acquisition time (year/month/day/hour/minute)

at which the information (URL information) for identifying the WEB page is acquired and the acquired net/consumer evaluation information in the net/consumer evaluation information database 32.

[0040]

Further, the net search/totalization engine unit 11 periodically checks information change in the URL using the URL information of the WEB page. With respect to the acquisition of the information change, a tool or library that is commonly used in the prior art may be used. When there is a change in the acquired data (net/consumer evaluation information), the net search/totalization engine unit 11 updates the change value of the data registered in the net/consumer evaluation information database 32 to always keep it to be the latest value, and updates the consumer evaluation information (net/consumer evaluation information). Thus, the net search/totalization engine unit 11 has a real-time update function for updating data registered in the net/consumer evaluation information database 32 to the latest information.

[0041]

In general, on a site for consumer evaluation, evaluation is often performed on a scale of 5 stars, and a change in the total number of evaluators or a change in the number of evaluators indicated by each star is often

limited to the change in the number only.

However, when the evaluation configuration of the consumer evaluation site itself is greatly changed, when an evaluation category is added, or when the URL is moved, the corresponding record in the net/evaluation information database 32 is deleted and information is generated as a new record.

[0042]

In the case where the consumer evaluation information on the WEB page is displayed in a different format for each commodity evaluation site (WEB site), the net search/totalization engine unit 11 acquires all necessary information of the commodity evaluation site corresponding to the format provided in the net/consumer evaluation information database 32 (for example, net/evaluation information such as total number of evaluators for consumer evaluation, information on how many levels of evaluation, evaluation element information, number of evaluators for each evaluation point).

Then, the acquired consumer evaluation information is registered in the net/consumer evaluation information database 32 together with the commodity ID.

For example, in cases such as a case where the evaluation points on the Internet are divided into a plurality of evaluation elements related to a commodity,

the evaluation information is also classified for each evaluation element and stored in the net/consumer evaluation information database 32.

[0043]

As described above, the net/consumer evaluation information has various evaluation formats depending on the operated site, and needs to be unified into the totalization/consumer evaluation information in order to be displayed on the display terminal 200.

For example, it is assumed that in a certain commodity evaluation site (WEB site), a user may evaluate a corresponding commodity in 3 levels, and in another commodity evaluation site, the evaluation may be divided into categories such as "quality", "design", and "want to purchase again" and the evaluation may be performed in 5 levels. Also in this case, the net/consumer evaluation information database 32 is provided with fields of various patterns corresponding to information structures existing on the net so as to be capable of coping with all patterns, and when information of a WEB site using a 3-level evaluation is acquired in data fields provided in 5 levels, data of portions 2 and 4 are empty. In the case of a commodity evaluation site in which evaluations are divided into evaluation elements respectively, records are divided into evaluation elements respectively, and information is

taken into the internet/consumer evaluation information database 32.

[0044]

The "calculation method for calculating the totalization/consumer evaluation information using the net/consumer evaluation information" performed by the net search/totalization engine unit 11 is not particularly limited, and may be performed as follows.

Specifically, the net search/totalization engine unit 11 may use a mechanism, which graphs the number of evaluations at each level, redistributes the number of evaluations based on the graph curve, and unifies the number of evaluations into different level evaluations, with respect to consumer evaluation information (net/consumer evaluation information) of different evaluation formats taken into the net/consumer evaluation information database 32 of the DATA base unit 15.

For example, when the evaluation points totalized in the consumer evaluation totalization database 35 and displayed on the display terminal 200 constitute a 5-level evaluation and the records of the net/consumer evaluation acquired from the net constitute a 3-level evaluation, the 3-level evaluation needs to be converted into the 5-level evaluation.

In this case, the total number of evaluators is not

changed, and the number of evaluators is redistributed into 5 levels in a manner of having the same shape as the curve of the distribution graph of 3 levels.

[0045]

It is assumed that the evaluation points have the following distribution. "Total number of evaluators: 100; 3 points: 80; 2 points: 15; 1 point: 5". In this case, when a graph is created in which the horizontal axis represents 1 point to 3 points and the vertical axis represents the number of evaluators, a graph shape in which the vertical axis rapidly extends with respect to a change in the horizontal axis is created. When the number of points is distributed in 5 levels in a manner of forming a graph of the same shape without changing the total number of evaluators of 100, the evaluation points are distributed in a manner that the graph shape becomes the same at 2 points and 4 points.

For example, when interpolation distribution is used and the above-described 3-level evaluation is changed to a distribution to 5 levels, a concrete example is "1 point: 3; 2 points: 6; 3 points: 10; 4 points: 30; 5 points: 51; 100 evaluators in total".

The impression when the consumer sees the commodity evaluation is intuitive, and when referring to the evaluation result, what is most important is how the

evaluation points of the consumer are distributed, and that is because the distribution shape of the graph is optimal for grasping the overall evaluation of the product (commodity).

It should be noted that the calculation method of the above-described redistribution example of the number of points is not specified in the present invention. This is because there is a possibility that the tendency of whether the evaluator who has performed a 3-point evaluation gives 4 points or 5 points may differ depending on the commodity type when the 3-point evaluation is actually performed on the 5-point basis. For example, there is a case where the tendency is different between the evaluation of 5 senses such as taste and sound and the function evaluation of a commodity.

[0046]

In addition, in the present embodiment, as an example, the base of the evaluation displayed on the display terminal 200 is a 5-level evaluation, but is not particularly limited thereto. The base of evaluation displayed on the display terminal 200 may be a 3-level evaluation. Also in the case of the 3-level evaluation, redistribution may be performed in a manner that the graph distribution shapes of the evaluation points approximate each other. It should be noted that a detailed description

of the process of converting 5 levels into 3 levels is omitted here.

In addition, in a case where the commodity evaluation site on the Internet NW divides the evaluation points into each evaluation element such as "quality", "design", and "want to purchase again", the evaluation statistics of all categories are set as the evaluation of the commodity and are totalized in the consumer evaluation totalization database 35.

[0047]

With the above-described configuration, in the server 1, the consumer evaluator information acquired on the Internet NW is totalized in the consumer evaluation totalization database 35 and is always kept as the latest information.

[0048]

The management zone (B) provides a graphic user interface (GUI) for a store administrator who manages the data gateway 100 installed in the store to connect to the server 1 using a login ID and a password, etc. issued for each store administrator to register and browse management information.

[0049]

A commodity registration unit 12 provides an interface for registering a target commodity for which consumer

evaluations are collected.

The store administrator logs in to the management site generated by the commodity registration unit 12 using the unique login ID and password issued in advance, and sets the information. There is no need to register a product (commodity) that has already been set in another store and registered in the database unit 15.

[0050]

In addition, in a data management unit 13, an interface for registering the ID (serial number) of the display terminal 200, the identification ID of the data gateway 100, and the like is provided, and the commodity to be displayed on the display terminal 200 can be associated here.

When the store administrator wants to associate the display terminal 200 with another commodity and promote the sales of the commodity, the store administrator can freely switch the in-store commodity associated with the display terminal 200 by changing the association between the display terminal 200 and the commodity using the data management unit 13.

[0051]

In addition, in the data management unit 13, information (information such as POS data) taken in from the outside through an individual data API unit 17 is

associated with the commodity ID, and the store administrator can check the information through the interface.

The data management unit 13, in addition, provides the information processing apparatus such as the data gateway 100 with an interface for managing various types of data information such as information on the sensors mounted in the display terminal 200, information related to NFC, and QR code (registered trademark) information to be displayed on the display terminal 200. In addition, the update frequency (update timing (interval of update timing)) of the display information of the display terminal 200 can also be set on the interface.

The data management unit 13 stores the data set on the interface (the identification ID of the data gateway 100, the display terminal ID of the display terminal 200, the commodity ID of the commodity associated with the display terminal ID, and the update frequency, all of which are set in the store with respect to the store ID) and the information taken in from the outside through the individual data API unit 17 in the store/commodity information database 34.

[0052]

An operation management unit 14 provides an interface for monitoring the operation status of the data gateway 100

and the display terminal 200 in the store, and thereby, a store administrator of each store can check data (store management information) such as the current communication status and failure status of the data gateway 100 and the display terminal 200, and battery exhaustion and system-related errors of the display terminal 200 by accessing the server 1 to perform a predetermined operation.

With the operation management unit 14, it is possible to check the store management information "data (store management information) such as the current communication status, failure status, battery exhaustion, and system-related errors of the display terminal 200" received from the data gateway 100 via the data gateway connection unit 16 and stored in the store/commodity information database 34.

[0053]

Thus, the reason why the management function is provided in the management zone (B) is as follows.

The reality is that a physical store operator (store administrator) wants to sell commodities that are difficult to sell. By using the management function of the server 1, without attaching the display terminal 200 to all commodities, it is possible to install the display terminal 200 only on commodities that have good reviews on the Internet NW but are not selling well and to change the

installation at any time depending on the store sales situation.

On the Internet NW, the display can be easily changed and devised, and thus, it is easy to appeal a commodity to be sold to a consumer. By using this management function, the seller of the physical store can easily take a sales strategy in the physical store as on the Internet.

[0054]

The local zone (D) is an interface unit connected to a fixed communication partner.

[0055]

The data gateway connection unit 16 administers communication with the data gateway 100 installed in each store.

Specifically, when the store/commodity information database 34 or the consumer evaluation totalization database 35 is updated, the data gateway connection unit 16 refers to the store/access information database 33, transmits a synchronization signal to the data gateway 100 of the corresponding store affected by the data update, and updates the contents of each database of the database unit 103 included in the data gateway 100.

[0056]

Similarly, the information on the sensors mounted in the display terminal 200, communication failure information

of the display terminal 200, and the like acquired in the store are transmitted to the data gateway connection unit 16 through the data gateway 100, and the information is transmitted to the server 1.

[0057]

The individual data API unit 17 is connected to a commodity information database such as a POS system (database storing POS data) of each store or each chain store via the Internet NW, and is used to acquire commodity information data indicating a real-time sales situation or the like for each store or each chain store, etc., thereby serving as a communication interface for cooperative connection with an external database. In addition to the in-store sales information, the commodity information database includes data associated with various commodities, such as a customer-oriented questionnaire totalized across all the chain stores and statistics of past complaints and failures. The individual data API unit needs to change the communication specification of data according to the specification of a connected device or a partner. Therefore, the specification of information exchange is not determined, and connection is basically performed according to the communication specification of the partner.

In the acquired commodity information data, for example, date and time information

(year/month/day/hour/minute), a sales situation (number of commodities sold or the like), a remaining stock quantity, price display, and the like are associated with each commodity ID.

[0058]

Further, the hardware configuration of the server 1 is not particularly limited. For example, the server 1 includes an information processing apparatus (one or a plurality of information processing apparatuses) such as a computer including a CPU, a main storage device, an auxiliary storage device, an IO interface, and a communication interface.

In addition, the auxiliary storage device stores a computer program (hereinafter, simply referred to as "program") for realizing the function of each unit (the net search/totalization engine unit 11, the commodity registration unit 12, the data management unit 13, the operation management unit 14, the data gateway connection unit 16, and the individual data API unit 17). The function of each unit (the net search/totalization engine unit 11, the commodity registration unit 12, the data management unit 13, the operation management unit 14, the data gateway connection unit 16, and the individual data API unit 17) is realized by the CPU loading the program into the main storage device and executing the program.

The database unit 15 is formed in a predetermined area of the auxiliary storage device.

[0059]

<<Configuration of data gateway 100>>

The data gateway 100 will be described below with reference to Fig. 3.

Here, Fig. 3 is a schematic diagram showing a mechanical configuration of a data gateway constituting the consumer evaluation information display system of the present embodiment.

[0060]

As illustrated, the data gateway 100 has a structural concept similar to that of the above-described server 1, and includes a public zone (E), a data zone (F), and a local zone (G).

[0061]

A server connection unit 101 is provided in the public zone (E). The server connection unit 101 is connected to the Internet NW to perform data communication, and the connection partner is limited to the server 1.

For example, when the store has an on-premise POS data system inside, the communication partner of the POS data system is always the server 1, and the data gateway 100 obtains information through the server 1.

[0062]

The database unit 103 is provided in the data zone (F). The database unit 103 stores a display terminal/consumer evaluation information database 110 and a display terminal/access information database 111.

The display terminal/consumer evaluation information database 110 is synchronized with the store/commodity information database 34 and the consumer evaluation totalization database 35 shown in Fig. 2 with respect to data associated with the store in which the data gateway 100 is installed, and has a structure in which all information except connection setting information specific to the installation store and data obtained from the display terminal 200 is updated in conjunction with the server 1 shown in Fig. 2.

[0063]

The information synchronized with the display terminal/consumer evaluation information database 110 is received from the data gateway connection unit 16 of the server 1 through the server connection unit 101 and synchronized therewith. Specifically, the server connection unit 101 performs communication processing with the data gateway connection unit 16 of the server 1, and the server 1 filters the information of the store where the data gateway 100 is installed, the information of the display terminal 200 installed in the store, and the

totalization/consumer evaluation information of the commodity associated with the data gateway 100 from the ID information of the data gateway 100, and the synchronization data required for the store is transmitted from the server 1 to the data gateway 100 and synchronized.

According to this configuration, when an internet communication failure such as interruption of communication with the server 1 occurs, data supply to the display terminal 200 in the store is not disturbed.

[0064]

The display terminal/access information database 111 is a database in which sensor information sent from the display terminal 200, information on the remaining battery level, communication records with the display terminal 200, and the like are stored.

The information of the display terminal/access information database 111 is synchronized with the information records in the store/commodity information database of the server 1, and the store operation administrator can always grasp such information through the operation management unit 14 of the server 1.

[0065]

A terminal communication unit 102 is provided in the local zone (G). The terminal communication unit 102 communicates with the display terminal 200 in the store.

Note that BLE Mesh communication, Zigbee communication, or the like with reduced power consumption is suitable for communication with the display terminal 200, and it is preferable to use such low power consumption communication.

When the totalization/consumer evaluation information of the display terminal/consumer evaluation information database 110 is synchronously updated through the database unit 15 of the server 1, only the ID (display terminal ID) of the display terminal 200 to be updated and the update information are broadcast from the terminal communication unit 102 onto the network in accordance with the setting of the information update frequency (update timing) of the display terminal 200 which is set by the data management unit 13 of the server 1.

The display terminal 200 is configured to update the display in accordance with the update information when the ID (display terminal ID) received from the broadcast communication on the network coincides with its own ID.

[0066]

Each of the display terminals 200 is configured to periodically transmit its own ID (display terminal ID) and the remaining battery level to the terminal communication unit 102. When communication data is not transmitted to the terminal communication unit 102 from the display terminal 200 that has been installed and registered for a

certain period of time, a communication record is not stored in the display terminal/access information database 111, and thus, it can be determined that a communication error has occurred in the display terminal 200 that has no communication record for a certain period of time.

Each of the display terminals 200 is set to transmit sensor information detected by a sensor unit 205 to the terminal communication unit 102 every time the sensor information is detected.

Then, the terminal communication unit 102 registers the data transmitted from each of the display terminals 200 in the display terminal/access information database 111.

[0067]

Ideally, only one data gateway 100 is installed in a store. However, in a situation where the store is divided into a plurality of floors and communication across the floors cannot be performed or in a case where the number of display terminals to be installed is large and communication traffic is large, a plurality of data gateways 100 may be installed.

[0068]

The hardware configuration of the data gateway 100 is not particularly limited. For example, the data gateway 100 includes an information processing apparatus (one or a plurality of information processing apparatuses) such as a

computer including a CPU, a main storage device, an auxiliary storage device, an IO interface, and a communication interface.

In addition, the auxiliary storage device stores a computer program (hereinafter, simply referred to as "program") for realizing the function of each unit (the server connection unit 101, the terminal communication unit 102). The function of each unit (the server connection unit 101, the terminal communication unit 102) is realized by the CPU loading the program into the main storage device and executing the program.

Further, the database 103 is formed in a predetermined area of the auxiliary storage device.

[0069]

<<Display terminal 200>>

Next, the configuration of the display terminal 200 constituting the consumer evaluation information display system of the present embodiment will be described with reference to Fig. 4.

Here, Fig. 4 is a schematic diagram showing a functional configuration of the display terminal constituting the consumer evaluation information display system according to the embodiment of the present invention.

[0070]

Since the display terminal 200 has a simple structure, the display terminal 200 is not divided into zones for each function, and is constituted by only 7 functional modules.

As illustrated, the display terminal 200 includes a control unit 201 that controls the overall operation of the display terminal 200, a BLE Mesh communication unit 202, a display unit 203 including a display device, etc., a battery unit 204 that is a power source of the display terminal 200, a sensor unit 205, an NFC unit 206, and a data memory unit 207.

[0071]

The control unit 201 controls exchanges such as transmission of a sensor count (sensor information) obtained by the sensor unit 205 to the data gateway 100, communication with a mobile terminal by the NFC unit 206, and the like.

The BLE Mesh communication unit 202 has a mechanism of performing Mesh communication with another display terminal 200 installed in the store and receiving a data command from the data gateway 100. However, a communication mode other than the BLE Mesh communication may be used depending on the communication state of the store.

[0072]

The display terminal 200 is a display device for displaying the consumer evaluation information, the store-

specific data, etc. received from the data gateway 100, and includes, for example, an electronic display device such as an organic EL display or a liquid crystal display.

[0073]

It is preferable to use a small battery such as a button battery for the battery unit 204. In the case of a store configuration in which a mobile battery or the like can be installed, the mobile battery may be used. It is preferable to use the sensor unit 205 and the NFC unit 206 in consideration of the balance between the demand of the store and the consumption of the battery, etc.

[0074]

The sensor unit 205 detects a motion in front of the display terminal 200, measures the time during which a moving object exists in the detection range, and counts the number of human bodies. Specifically, the sensor unit 205 includes a sensor capable of detecting a movement of an object (an object such as a human body) in front, and counts the number of objects existing in the detection range for more than a predetermined time among the detected objects. Information that the sensor unit 205 obtains by counting (sensor information (sensor information associated with the commodity ID) is transmitted to the server 1 via the data gateway 100.

The object of the present invention is not only to

pursue the convenience of consumers, but also to bring the advantages of e-commerce to a physical store. That is, in e-commerce, the number of users who are interested in the commodity can also be counted when the actual purchase is not achieved.

However, this cannot be done in a physical store. The object is to fill this gap and to incorporate excellent functions on the Internet into operation of a physical store. According to the configuration of the sensor unit 205 described above, it is possible to count the number of persons who stop in front of the commodity and are supposed to be looking at the commodity in a physical store. That is, it is possible to count the number of users who are estimated to be interested in the commodity in the physical store.

[0075]

Similarly, the purpose of using the NFC unit 206 is to incorporate a function of linking to information related to a commodity, which is common on the Internet NW, into a physical store. That is, when the user holds a mobile terminal such as a smartphone over the display terminal 200, it is possible to provide a link to commodity information which is common in the Internet NW but is difficult to be provided in a physical store. However, depending on battery consumption, this function may be

omitted by displaying a QR code (registered trademark) or the like.

[0076]

In the data memory unit 207, a basic screen configuration pattern to be displayed on the display unit is registered in advance, and data to be communicated through the BLE Mesh communication unit 202 is limited to the minimum data such as numerical data or QR code (registered trademark) data developed on the screen pattern.

In addition, sensor information (count information) obtained through the sensor unit 205 is also temporarily stored in the data memory unit 207.

[0077]

The hardware configuration of the display terminal 200 is not particularly limited, and for example, the display terminal 200 may be a display device having a known configuration that operates with a replaceable battery and mounted with "the BLE Mesh communication unit 202, the sensor unit 205, the NFC unit 206, and the data memory unit 207" described above.

[0078]

The above is the configuration of the consumer evaluation information display system of the present embodiment.

[0079]

<<Process of collecting and totalizing consumer evaluation information>>

Next, a processing of collecting and totalizing consumer evaluation information performed by the server 1 of the consumer evaluation information display system according to the present embodiment will be described with reference to Fig. 5.

Here, Fig. 5 is a schematic diagram showing an example of a process of collecting and totalizing consumer evaluation information performed by a server of the consumer evaluation information display system according to the embodiment.

[0080]

In the consumer evaluation information display system of the present embodiment, the operation is started from a moment when the commodity information (commodity ID, commodity name) to be evaluated by the consumer is registered in the evaluation commodity information database 31 in the database unit 15 of the server 1. The evaluation commodity information database 31 includes a field for registering the commodity ID of the target commodity of the consumer evaluation and a field for registering the commodity name used for searching for the commodity.

The administrator of the server 1 or the store

administrator registers the commodity ID and the commodity name in the records of the evaluation commodity information database 31.

[0081]

When the registration of the commodity name is completed, the net search/totalization engine unit 15 of the server 1 accesses the evaluation commodity information database 31 which is in the database unit 15 to first acquire the search commodity name (first keyword) of the registered target commodity (first commodity).

Thereafter, the net search/totalization engine unit 15 widely searches the Internet NW and acquires URL information of a WEB page in which consumer evaluation information related to the target commodity corresponding to the acquired commodity name is provided.

[0082]

Next, when the net search/totalization engine unit 15 acquires the URL information, the net search/totalization engine unit 15 registers the URL information (access destination information) in association with the corresponding commodity ID in the net/consumer evaluation information database 32.

There are a large number of Web pages on which consumer evaluation information related to a commodity is provided, and thus, according to the present embodiment, the same

processing is repeated as many times as the number of Web pages on which consumer evaluation information is provided, and URL information about the commodity is also registered as many times as the number of Web pages.

[0083]

Next, the net search/totalization engine unit 11 accesses the WEB site (WEB page) of the acquired URL information to acquire consumer evaluation information (net/consumer evaluation information) related to the registered target commodity.

Then, when the net search/totalization engine unit 11 acquires the consumer evaluation information related to the target commodity, the net search/totalization engine unit 11 registers the consumer evaluation information in the net consumer evaluation information database 32 of the database unit 15. As described above, there are a large number of WEB pages on which consumer evaluation information is provided, and thus, a large number of pieces of consumer evaluation information (net/consumer evaluation information) are finally registered with respect to the same one commodity item.

[0084]

Next, the net search/totalization engine unit 11 totalizes the acquired consumer evaluation information (net/consumer evaluation information) based on a

predetermined rule to calculate the totalization/consumer evaluation information.

Then, the net search/totalization engine unit 11 registers the totalization/consumer evaluation information acquired from the first URL in the consumer evaluation totalization database 35 which is in the database unit 15.
[0085]

When the totalization processing of the net/consumer evaluation information acquired from the URL, which is first acquired by retrieval, of the first commodity is finished and the registration of the totalization/consumer evaluation information is completed, the flow shifts to the processing of the information from the next acquired URL. These processings are repeated, and when all the totalization processings of the first commodity are finished, the same process is repeated with the next commodity name (keyword) until all the commodity names have been searched. However, although one flow is described in order for convenience of explanation, these processings actually occur in a multi-process/multi-thread manner, and thus, the search of the consumer evaluation information is sequentially executed by a plurality of search names, and the calculation of the totalization/consumer evaluation information is also executed in parallel.
[0086]

When the net search/totalization engine unit 11 finishes registering the totalization/consumer evaluation information of all commodity names, the net search/totalization engine unit 11 then periodically checks the information change in the URL. When the data in the URL has changed with respect to the already acquired data (net/consumer evaluation information), the net search/totalization engine unit 11 updates the consumer evaluation information (net/consumer evaluation information) so that the data registered in the net/consumer evaluation information database 32 becomes the latest information.

[0087]

When the net/consumer evaluation information database 32 is updated, the net search/totalization engine unit 11 totalizes the "consumer evaluation information (net/evaluation information)" of the updated (or newly registered) commodity ID (commodity) in the net/consumer evaluation information database 32, and calculates the consumer evaluation information (totalization/consumer evaluation information) of the corresponding commodity ID (commodity) according to a predetermined rule. Further, the net search/totalization engine unit 11 accesses the consumer evaluation totalization database 35 to update the consumer evaluation information (totalization/consumer

evaluation information) associated with the corresponding commodity ID.

[0088]

The data gateway connection unit 16 of the server 1 of the present embodiment, at a predetermined timing, performs communication processing with the server connection unit 101 of the data gateway 100 of each store, and synchronizes the information registered in the display terminal/consumer evaluation information database 110 of the data gateway 100 of the store corresponding to the store ID which corresponds to the store/commodity information database 34 of the server 1.

[0089]

In addition, the data gateway 100 of the store transmits the consumer evaluation information (totalization/consumer evaluation information) of the commodity registered in the store/commodity information database 34 to the display terminal 200 associated with each commodity in the store, and causes the display terminal 200 to display the commodity evaluation information of the associated commodity. In the vicinity of the display terminal 200, the commodity associated with the display terminal 200 is arranged.

[0090]

Therefore, the consumer who visits the store, for

example, can obtain the consumer evaluation information of a "commodity a" by looking at the display terminal 200 installed near the "commodity a" while checking the "commodity a" in the physical store by looking at or holding the "commodity a" in hand. That is, according to the above-described configuration, it is possible to present the consumer evaluation information required for the purchase determination of the consumer and to provide both virtual and real merits to the consumer who visits the physical store without taking time and effort.

[0091]

In addition, according to the present embodiment, for a commodity, the server 1 does not simply provide consumer evaluation information of a specific WEB site, but provides the totalization/consumer evaluation information calculated by totalizing consumer evaluation information (net/consumer evaluation information) widely searched and collected on the Internet NW. Therefore, according to the present embodiment, more reliable consumer evaluation information is provided.

[0092]

As described above, according to the present embodiment, it is possible to provide a consumer evaluation information display system capable of providing both virtual and real merits by presenting information required

at the time of purchase determination of a consumer to the consumer who visits a physical store without taking time and effort. Further, according to the present embodiment, the information required at the time of the purchase determination of the consumer is effectively provided in the physical store, and thus, it is possible to urge the consumer to purchase the commodity in the physical store, and as a result, it is possible to expect that the store activation of the entire society is achieved.

[0093]

It should be noted that the present invention is not limited to the above-described embodiments and various modifications can be made within the scope of the gist of the present invention.

[0094]

According to the present embodiment, the individual data API unit 17 of the server 1 acquires commodity information data such as POS data indicating real-time sales situation, etc. of each store (POS data indicating the number of commodities sold, etc.), and registers the acquired POS data (date and time information (year/month/day/hour/minute), sales situation (number of commodities sold, remaining stock quantity, etc.), price, etc. for each commodity ID) in the database unit 15.

Therefore, for example, the commodity information data

of the commodity associated with the display terminal 200 of each store may be transmitted from the server 1 to the data gateway 100 of each store. In this case, the data gateway 100 transmits the commodity information data of the commodity associated with each display terminal 200 (the commodity information data received from the server 1) to each display terminal 200 in the store. The display terminal 200 displays the commodity information data together with the consumer evaluation information (totalization/consumer evaluation information). The commodity information data to be displayed may be, for example, the sales situation of each commodity (number of commodities sold (number of commodities sold in each store, number of commodities sold in a chain store/total number of commodities sold, etc.), remaining stock quantity), price, etc.

According to this configuration, it is possible to present a number of commodities sold, a remaining stock quantity, and the like of a commodity in front of a customer to the customer who visits a physical store, which is expected to stimulate the customer's willingness to purchase.

Reference Signs List

[0095]

- 1 Cloud server
- 11 Net search/totalization engine unit
- 12 Commodity registration unit
- 13 Data management unit
- 14 Operation management unit
- 15 Database unit
- 16 Data gateway connection unit
- 17 Individual data API unit
- 31 Evaluation commodity information database
- 32 Net/consumer evaluation information database
- 33 Store/access information database
- 34 Store/commodity information database
- 35 Consumer evaluation totalization database
- A Public zone
- B Management zone
- C Data zone
- D Local zone
- 100 Data gateway
- 101 Server connection unit
- 102 Terminal communication unit 102
- 103 Database unit
- 110 Display terminal/consumer evaluation information database
- 111 Display terminal/access information database
- E Public zone

F Data zone

G Local zone

200 Display terminal

201 Control unit

202 BLE Mesh communication unit

203 Display unit

204 Battery unit

205 Sensor unit

206 NFS unit

207 Data memory unit

CLAIMS

1. A consumer evaluation information display system that collects and totalizes consumer evaluation information related to a commodity evaluated by a consumer on the Internet, and displays the consumer evaluation information, which has been collected and totalized, on a sales display shelf of the commodity sold in a physical store, the consumer evaluation information display system comprising:

a server that collects and totalizes the consumer evaluation information from a WEB site provided via the Internet and stores the consumer evaluation information which has been collected and totalized;

a store-side/information processing apparatus that is installed in the physical store, performs communication processing with the server via the Internet, acquires the consumer evaluation information stored in the server, and stores the consumer evaluation information which has been acquired; and

a display terminal that is installed on the sales display shelf provided in the physical store in a manner of being paired with the commodity, wherein

the server has a real-time update function of monitoring a change in the consumer evaluation information of the commodity on the WEB site connected to the Internet, updating the consumer evaluation information, which

corresponds and has been stored, of the commodity when the change is confirmed, transmitting the consumer evaluation information, which has been updated, of the commodity to the store-side/information processing apparatus, and causing the consumer evaluation information stored in the store-side/information processing apparatus to be updated, and

the store-side/information processing apparatus is capable of communicating with the display terminal, transmits the consumer evaluation information, which has been stored, to the display terminal, and causes the display terminal to display the consumer evaluation information.

2. The consumer evaluation information display system according to claim 1, wherein

the server has a structure capable of specifying an interval of an update timing of the consumer evaluation information to be displayed on the display terminal to the store-side/information processing apparatus and the store-side/information processing apparatus transmits the consumer evaluation information to the display terminal at the update timing specified by the server and causes the display terminal to display the consumer evaluation information, and

the display terminal is powered by a battery and

includes a communication processing unit that performs an information update by a communication method with a reduced power consumption.

3. The consumer evaluation information display system according to claim 1 or claim 2, wherein the display terminal includes a sensor capable of detecting a movement of an object in front and an NFC function unit capable of communicating with a mobile terminal, and the sensor is capable of measuring a time during which the object which has been detected stays in a detection range.

4. The consumer evaluation information display system according to any one of claims 1 to 3, wherein the server includes: a data management unit that accepts a login on a store administrator basis and receives a registration of a commodity associated with the display terminal, and an API communication unit that is connected to a commodity information database such as a POS system for each of the stores or chain stores via the Internet to take in various data on the commodity including a number of the commodities sold which is unique to each of the stores or chain stores, and the server transmits the commodity information data of the commodity, which corresponds, to the store-side/information processing apparatus, and the store-side/information processing apparatus receives the commodity information data, transmits the commodity

information data to the display terminal which corresponds, and causes the display terminal to display the commodity information data together with the consumer evaluation information.

5. The consumer evaluation information display system according to any one of claims 1 to 4, wherein a plurality of the display terminals is installed in the physical store, and the server receives and stores store management information including a current communication status, a current failure status, and a current battery exhaustion for each of the display terminals of each of the stores from the store-side/information processing apparatus of each of the stores, and provides the store management information of the store, which corresponds, to a user interface which the store administrator logs in to use.