# DESCRIPTION

## Title of Invention

# SALES PROMOTION SUPPORT DEVICE

## Technical Field

[0001]

The present invention relates to a technology for promoting sales of products/services.

## Background Art

[0002]

Digital twin has a mechanism for acquiring a state and a behavior of a physical object in a real world by Internet of Things (IoT) or a sensing technology and reproducing a physical model thereof in a virtual world in real time. The technology of the digital twin is applied to design and development by computer-aided engineering (CAE), operation simulation of an industrial robot, a technology of reproducing movement of each player on a computer in sports streaming, and the like.

[0003]

Under such a background, for example, Patent Literature 1 proposes a digital twin management device that appropriately represents, in a virtual space, an object existing in a physical space, using the digital twin.

Citation List

Patent Literature

[0004]

Patent Literature 1: JP 2024-100552 A

Summary of Invention

Technical Problem

[0005]

However, while continuous expansion of product sales amount and sales number is an important issue in a retail industry, the above-described existing technology has a problem that it is not possible to take advantage of innovative technologies in sales promotion in the retail industry.

[0006]

Therefore, in view of the above problem, an object of the present invention is to provide a sales promotion support device that promotes expansion of product sales in a real store by making a rough estimate for sales in the real store by implementing product sales measures in a virtual store imitating the real store in advance.

Solution to Problem

[0007]

An aspect of a sales promotion support device to be

disclosed includes: a real store information storage means that stores a real store sales amount related to a predetermined product before implementation of a first sales measure in a real store; a virtual store information storage means that stores a virtual store sales amount related to the predetermined product before implementation of the first sales measure in a virtual store imitating the real store; a virtual store realization means that provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store; a virtual store measure execution means that executes the first sales measure related to the predetermined product in the virtual store; a first verification value calculation means that calculates a virtual store sales amount related to the predetermined product after implementation of the first sales measure in the virtual store; a first goal determination means that determines whether or not the virtual store sales amount related to the predetermined product after implementation of the first sales measure is larger than a virtual store target value set on a basis of the virtual store sales amount related to the predetermined product before implementation of the first sales measure; a real store measure execution means that performs processing for implementing the first sales measure related to the

predetermined product in the real store in a case where it is determined that the virtual store sales amount is larger than the virtual store target value; a second verification value calculation means that calculates a real store sales amount related to the predetermined product after implementation of the first sales measure in the real store; a second goal determination means that determines whether or not the real store sales amount related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real store sales amount related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales amount related to the predetermined product before and after implementation of the first sales measure; and a virtual store measure re-execution means that executes a second sales measure related to the predetermined product in the virtual store in a case where it is determined that the real store sales amount is smaller than the real store target value, in which the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product,

notification of coupon information, sale information, and campaign information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by artificial intelligence (AI), provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in

the application, implementation of demonstration sales in the store, implementation of point of purchase (POP) advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of background music (BGM) in the store.

[0008]

Further, an aspect of a sales promotion support device to be disclosed includes: a real store information storage means that stores a real store sales number related to a predetermined product before implementation of a first sales measure in a real store; a virtual store information storage means that stores a virtual store sales number related to the predetermined product before implementation of the first sales measure in a virtual store imitating the real store; a virtual store realization means that provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store; a virtual store measure execution means that executes the first sales measure related to the predetermined product in the virtual store; a first verification value calculation means that

calculates a virtual store sales number related to the predetermined product after implementation of the first sales measure in the virtual store; a first goal determination means that determines whether or not the virtual store sales number related to the predetermined product after implementation of the first sales measure is larger than a virtual store target value set on a basis of the virtual store sales number related to the predetermined product before implementation of the first sales measure; a real store measure execution means that performs processing for implementing the first sales measure related to the predetermined product in the real store in a case where it is determined that the virtual store sales number is larger than the virtual store target value; a second verification value calculation means that calculates a real store sales number related to the predetermined product after implementation of the first sales measure in the real store; a second goal determination means that determines whether or not the real store sales number related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real store sales number related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales

number related to the predetermined product before and after implementation of the first sales measure; and a virtual store measure re-execution means that executes a second sales measure related to the predetermined product in the virtual store in a case where it is determined that the real store sales number is smaller than the real store target value, in which the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an

interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

## Advantageous Effects of Invention

[0009]

The sales promotion support device to be disclosed promotes expansion of product sales in a real store by making a rough estimate for sales in the real store by

implementing product sales measures in a virtual store imitating the real store in advance.

## Brief Description of Drawings

[0010]

Fig. 1 is a diagram illustrating an outline of a sales promotion support device according to the present embodiment.

Fig. 2 is a functional block diagram of the sales promotion support device according to the present embodiment.

Fig. 3 is a diagram illustrating a hardware configuration example of the sales promotion support device according to the present embodiment.

Fig. 4 is a flowchart illustrating a flow of a processing example by the sales promotion support device according to the present embodiment.

## Description of Embodiments

[0011]

An embodiment for implementing the present invention will be described with reference to the drawings.

(Operation principle of sales promotion support device according to present embodiment)

[0012]

An operation principle of a sales promotion support device (hereinafter simply referred to as the "present device") 100 according to the present embodiment will be described with reference to Figs. 1 and 2. Fig. 1 is a diagram illustrating a connection relationship between the present device 100 and another device, and Fig. 2 is a functional block diagram of the present device 100.

[0013]

As illustrated in Fig. 1, the present device 100 is connected to a real store terminal 350 via a communication network 360. The communication network 360 may be in either a wired form or a wireless form. The real store terminal 350 is a device that notifies the present device 100 of a sales status of a product sold in a real store 210, and may be, for example, a point of sales (POS) system.

[0014]

As illustrated in Fig. 2, the present device 100 includes a real store information storage means 110, a virtual store information storage means 120, a virtual store realization means 130, a virtual store measure execution means 140, a first verification value calculation means 150, a first goal determination means 160, a real store measure execution means 170, a second verification value calculation means 180, a second goal determination

means 190, and a virtual store measure re-execution means 200.

[0015]

The real store information storage means 110 stores a real store sales amount 250 or a real store sales number 260 related to a predetermined product before implementation of a first sales measure 230 in the real store 210. The first sales measure 230 is, for example, a measure for promoting sales related to the predetermined product, and is a concept including a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to an application (abbreviation of application software), use of a digital stamp using the application, use of a point system given on the basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing

of a sensor installed in the store, provision of an interactive customer service function by artificial intelligence (AI), provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of point of purchase (POP) advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of background music (BGM) in the store.

[0016]

The virtual store information storage means 120 stores a virtual store sales amount 270 or a virtual store sales number 280 related to the predetermined product

before implementation of the first sales measure 230 in a virtual store 220 imitating the real store 210.

[0017]

The virtual store realization means 130 provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior in the real world can purchase a product in the virtual store 220 imitating the real store 210. The virtual store realization means 130 may be realized using a so-called digital twin technology. Furthermore, the virtual customer is a model of a person (customer) in the real world using an AI technology.

[0018]

The virtual store measure execution means 140 implements the first sales measure 230 related to the predetermined product in the virtual store 220. The virtual store measure execution means 140 implements measures for promoting sales related to the predetermined product with respect to the predetermined product sold in the virtual store 220, and for example, changes a price related to the predetermined product or changes a package related to the predetermined product.

[0019]

Further, for example, the virtual store measure execution means 140 may perform, regarding the predetermined product to be sold in the virtual store 220,

notification of coupon information, sale information, and campaign information to the application, use of a digital stamp using the application, use of a point system given on the basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of

demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[0020]

The first verification value calculation means 150 calculates a virtual store sales amount 310 related to the predetermined product after implementation of the first sales measure 230 in the virtual store 220. Alternatively, the first verification value calculation means 150 may calculate a virtual store sales number 320 related to the predetermined product after implementation of the first sales measure 230 in the virtual store 220.

[0021]

The first goal determination means 160 determines whether or not the virtual store sales amount 310 related to the predetermined product after implementation of the first sales measure 230 is larger than a virtual store target value 340 set on the basis of the virtual store sales amount 270 related to the predetermined product before implementation of the first sales measure 230. The

virtual store target value 340 is set to, for example, the virtual store sales amount 270 × 105% related to the predetermined product before implementation of the first sales measure 230.

[0022]

The first goal determination means 160 may determine whether or not the virtual store sales number 320 related to the predetermined product after implementation of the first sales measure 230 is larger than the virtual store target value 340 set on the basis of the virtual store sales number 280 related to the predetermined product before implementation of the first sales measure 230. The virtual store target value 340 is set to, for example, the virtual store sales number 280 × 105% related to the predetermined product before implementation of the first sales measure 230.

[0023]

In a case where the first goal determination means 160 determines that “the virtual store sales number 320 is larger than the virtual store target value 340”, the real store measure execution means 170 performs processing for implementing the first sales measure 230 related to the predetermined product in the real store 210. Since it has been found that the first sales measure 230 is effective to some extent by the preliminary implementation in the

virtual store 220, the first sales measure 230 is also implemented in the real store 210 to improve the sales of the predetermined product.

[0024]

The second verification value calculation means 180 calculates a real store sales amount 290 related to the predetermined product after implementation of the first sales measure 230 in the real store 210. The second verification value calculation means 180 may acquire the real store sales amount 290 from the real store terminal 350.

[0025]

The second verification value calculation means 180 calculates a real store sales number 300 related to the predetermined product after implementation of the first sales measure 230 in the real store 210. The second verification value calculation means 180 may acquire the real store sales number 300 from the real store terminal 350.

[0026]

The second goal determination means 190 determines whether or not the real store sales amount 290 related to the predetermined product after implementation of the first sales measure 230 is larger than a real store target value 330 set on the assumption that the real store sales amount

250 increases to a similar extent to an increase in the virtual store sales amount related to the predetermined product before and after implementation of the first sales measure 230. The real store target value 330 is assumed to be, for example, the real store sales amount 250 × the virtual store sales amount 310 ÷ the virtual store sales amount 270 ±α. This means that a sales expansion effect by the sales measure 230 in the virtual store 220 is taken into the real store target value 330, and ±α is an adjustment value.

[0027]

The second goal determination means 190 determines whether or not the real store sales number 300 related to the predetermined product after implementation of the first sales measure 230 is larger than the real store target value 330 set on the assumption that the real store sales number 260 increases to a similar extent to an increase in the virtual store sales number related to the predetermined product before and after implementation of the first sales measure 230. The real store target value 330 is assumed to be, for example, the real store sales number 260 × the virtual store sales number 320 ÷ the virtual store sales number 280 ±α. This means that a sales expansion effect by the sales measure 230 in the virtual store 220 is taken into the real store target value 330, and ±α is an

adjustment value.

[0028]

In a case where the second goal determination means 190 determines that "the real store sales number 300 is smaller than the real store target value 330", the virtual store measure re-execution means 200 implements a second sales measure 240 related to the predetermined product in the virtual store 220. The second sales measure 240 is different from the first sales measure 230 and is, for example, a measure for promoting sales related to the predetermined product, and is a concept including a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to the application, use of a digital stamp using the application, use of a point system given on the basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification

function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[0029]

The processing by the virtual store measure re-execution means 200 is to search for the second sales measure 240 that produces a greater effect in a case where

the first sales measure 230 does not contribute to the sales expansion of the real store 210 as much as expected. Then, by replacing the second sales measure 240 with the first sales measure 230 and repeating the processing by the virtual store realization means 130, the virtual store measure execution means 140, the first verification value calculation means 150, the first goal determination means 160, the real store measure execution means 170, the second verification value calculation means 180, the second goal determination means 190, and the virtual store measure re-execution means 200, it is possible to search for the first sales measure 230 (second sales measure 240) that produces a larger effect.

[0030]

The present device 100 promotes expansion of product sales in a real store 210 by making a rough estimate for sales in the real store 210 by implementing product sales measures in a virtual store 220 imitating the real store 210 in advance.

(Hardware configuration of sales promotion support device according to present embodiment)

[0031]

A hardware configuration example of the present device 100 will be described with reference to Fig. 3. Fig. 3 is a diagram illustrating an example of a hardware

configuration of the present device 100. As illustrated in Fig. 3, the present device 100 includes a central processing unit (CPU) 510, a read-only memory (ROM) 520, a random access memory (RAM) 530, an auxiliary storage device 540, a communication I/F 550, an input device 560, a display device 570, and a storage medium I/F 580.

[0032]

The CPU 510 is a device that executes a program stored in the ROM 520, and performs arithmetic processing for data deployed (loaded) in the RAM 530 according to an instruction of the program to control the entire present device 100. The ROM 520 stores the program executed by the CPU 510 and data. When the CPU 510 executes the program stored in the ROM 520, the RAM 530 deploys (loads) the program to be executed and data, and temporarily holds operation data during operation.

[0033]

The auxiliary storage device 540 is a device that stores an operating system (OS) that is basic software, an application program according to the present embodiment, and the like together with related data. The auxiliary storage device 540 is, for example, a hard disk drive (HDD), a flash memory, or the like, and includes the real store information storage means 110 and the virtual store information storage means 120.

[0034]

The communication I/F 550 is an interface that is connected to the communication network 310 such as a wired or wireless local area network (LAN) or the Internet and exchanges data with another device (POS system or the like) 350 that provides a communication function.

[0035]

The input device 560 is a device such as a keyboard for inputting data to the present device 100. The display device (output device) 570 is a device including a liquid crystal display (LCD) or the like, and functions as a user interface when a user uses the functions of the present device 100 or performs various settings. The storage medium I/F 580 is an interface for transmitting and receiving data to and from a storage medium 590 such as a CD-ROM, a DVD-ROM, or a USB memory.

[0036]

Each means included in the present device 100 may be realized by the CPU 510 executing a program corresponding to each means stored in the ROM 520 or the auxiliary storage device 540. In addition, the processing related to each means included in the present device 100 may be realized as hardware. In addition, it may be configured to read the program according to the present invention from an external server device via the communication I/F 550, or to

read the program according to the present invention from the storage medium 590 via the storage medium I/F 580, and to cause the present device 100 to execute the program.

(Processing example by sales promotion support device according to present embodiment)

A processing example by the present device 100 will be described with reference to Fig. 4. Fig. 4 is a flowchart illustrating a flow of the processing example by the present device 100.

[0037]

In S10, the virtual store realization means 130 provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior in the real world can purchase a product in the virtual store 220 imitating the real store 210. The virtual store realization means 130 may be realized using a so-called digital twin technology.

[0038]

Further, in S10, the virtual store measure execution means 140 implements the first sales measure 230 related to the predetermined product in the virtual store 220. The virtual store measure execution means 140 implements measures for promoting sales related to the predetermined product with respect to the predetermined product sold in the virtual store 220, and for example, changes a price

related to the predetermined product or changes a package related to the predetermined product. Further, the virtual store measure execution means 140 may perform, regarding the predetermined product to be sold in the virtual store 220, for example, notification of coupon information, sale information, and campaign information to the application, use of a digital stamp using the application, use of a point system given on the basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application,

notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[0039]

In S20, the first verification value calculation means 150 calculates the virtual store sales amount 310 related to the predetermined product after implementation of the first sales measure 230 in the virtual store 220. Alternatively, the first verification value calculation means 150 may calculate the virtual store sales number 320 related to the predetermined product after implementation of the first sales measure 230 in the virtual store 220.

[0040]

In S20, the first goal determination means 160 determines whether or not the virtual store sales amount 310 related to the predetermined product after

implementation of the first sales measure 230 is larger than the virtual store target value 340 set on the basis of the virtual store sales amount 270 related to the predetermined product before implementation of the first sales measure 230. The virtual store target value 340 is set to, for example, the virtual store sales amount 270 × 105% related to the predetermined product before implementation of the first sales measure 230.

[0041]

The first goal determination means 160 may determine whether or not the virtual store sales number 320 related to the predetermined product after implementation of the first sales measure 230 is larger than the virtual store target value 340 set on the basis of the virtual store sales number 280 related to the predetermined product before implementation of the first sales measure 230. The virtual store target value 340 is set to, for example, the virtual store sales number 280 × 105% related to the predetermined product before implementation of the first sales measure 230.

[0042]

In a case where the first goal determination means 160 determines that the virtual store sales amount 310 is larger than the virtual store target value 340 in S30 (YES in S30), the processing proceeds to S40. Alternatively, in

a case where the first goal determination means 160 determines that the virtual store sales number 320 is larger than the virtual store target value 340 in S30 (YES in S30), the processing proceeds to S40.

[0043]

In S40, the real store measure execution means 170 performs processing for executing the first sales measure 230 related to the predetermined product in the real store 210. Since it has been found that the first sales measure 230 is effective to some extent by the preliminary implementation in the virtual store 220, the first sales measure 230 is also implemented in the real store 210 to improve the sales of the predetermined product.

[0044]

In S50, the second verification value calculation means 180 calculates the real store sales amount 290 related to the predetermined product after implementation of the first sales measure 230 in the real store 210. Alternatively, in S50, the second verification value calculation means 180 calculates the real store sales number 300 related to the predetermined product after implementation of the first sales measure 230 in the real store 210. The second verification value calculation means 180 may acquire the real store sales amount 290 or the real store sales number 300 from the real store terminal 350.

[0045]

In S50, the second goal determination means 190 determines whether or not the real store sales amount 290 related to the predetermined product after implementation of the first sales measure 230 is larger than the real store target value 330 set on the assumption that the real store sales amount 250 increases to a similar extent to an increase in the virtual store sales amount related to the predetermined product before and after implementation of the first sales measure 230. The real store target value 330 is assumed to be, for example, the real store sales amount 250 × the virtual store sales amount 310 ÷ the virtual store sales amount 270 ±α. This means that a sales expansion effect by the sales measure 230 in the virtual store 220 is taken into the real store target value 330, and ±α is an adjustment value.

[0046]

Alternatively, in S50, the second goal determination means 190 may determine whether or not the real store sales number 300 related to the predetermined product after implementation of the first sales measure 230 is larger than the real store target value 330 set on the assumption that the real store sales number 260 increases to a similar extent to an increase in the virtual store sales number related to the predetermined product before and after

implementation of the first sales measure 230. The real store target value 330 is assumed to be, for example, the real store sales number 260 × the virtual store sales number 320 ÷ the virtual store sales number 280 ±α. This means that a sales expansion effect by the sales measure 230 in the virtual store 220 is taken into the real store target value 330, and ±α is an adjustment value.

[0047]

In a case where the second goal determination means 190 determines that the real store sales amount 290 is smaller than the real store target value 330 in S60 (NO in S60), the processing proceeds to S70. Alternatively, in a case where the second goal determination means 190 determines that the real store sales number 310 is smaller than the real store target value 330 in S60 (NO in S60), the processing proceeds to S70.

[0048]

In S70, the virtual store measure re-execution means 200 implements the second sales measure 240 related to the predetermined product in the virtual store 220. The second sales measure 240 is different from the first sales measure 230 and is, for example, a measure for promoting sales related to the predetermined product, and is a concept including a change of a price related to the predetermined product, a change of a package related to the predetermined

product, notification of coupon information, sale information, and campaign information to the application, use of a digital stamp using the application, use of a point system given on the basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of

demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[0049]

The processing by the virtual store measure re-execution means 200 is to search for the second sales measure 240 that produces a greater effect in a case where the first sales measure 230 does not contribute to the sales expansion of the real store 210 as much as expected. Then, by replacing the second sales measure 240 with the first sales measure 230 and repeating the processing by the virtual store realization means 130, the virtual store measure execution means 140, the first verification value calculation means 150, the first goal determination means 160, the real store measure execution means 170, the second verification value calculation means 180, the second goal determination means 190, and the virtual store measure re-execution means 200, it is possible to search for the first sales measure 230 (second sales measure 240) that produces a larger effect.

[0050]

By performing the above-described processing, the present device 100 makes a rough estimate for sales in the real store 210 by implementing product sales measures in the virtual store 220 imitating the real store 210 in advance, and promotes expansion of product sales in the real store 210.

[0051]

Although the embodiments of the present invention have been described in detail above, the present invention is not limited to the specific embodiments, and various modifications and changes can be made within the scope of the gist of the present invention described in the claims.

Reference Signs List

[0052]

100 Sales promotion support device

110 Real store information storage means

120 Virtual store information storage means

130 Virtual store realization means

140 Virtual store measure execution means

150 First verification value calculation means

160 First goal determination means

170 Real store measure execution means

180 Second verification value calculation means

190 Second goal determination means

200 Virtual store measure re-execution means

210 Real store

220 Virtual store

230 First sales measure

240 Second sales measure

250 Real store sales amount related to predetermined product before implementation of first sales measure

260 Real store sales number related to predetermined product before implementation of first sales measure

270 Virtual store sales amount related to predetermined product before implementation of first sales measure

280 Virtual store sales number related to predetermined product before implementation of first sales measure

290 Real store sales amount related to predetermined product after implementation of first sales measure

300 Real store sales number related to predetermined product after implementation of first sales measure

310 Virtual store sales amount related to predetermined product after implementation of first sales measure

320 Virtual store sales number related to predetermined product after implementation of first sales measure

330 Real store target value

340 Virtual store target value

350 Real store terminal (point of sales (POS) system)

360 Communication network

510 CPU

520 ROM

530 RAM

540 Auxiliary storage device

550 Communication interface

560 Input device

570 Output device

580 Storage medium interface

590 Storage medium

CLAIMS

[Claim 1]

A sales promotion support device comprising:

a real store information storage means that stores a real store sales amount related to a predetermined product before implementation of a first sales measure in a real store;

a virtual store information storage means that stores a virtual store sales amount related to the predetermined product before implementation of the first sales measure in a virtual store imitating the real store;

a virtual store realization means that provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store;

a virtual store measure execution means that executes the first sales measure related to the predetermined product in the virtual store;

a first verification value calculation means that calculates a virtual store sales amount related to the predetermined product after implementation of the first sales measure in the virtual store;

a first goal determination means that determines whether or not the virtual store sales amount related to the predetermined product after implementation of the first

sales measure is larger than a virtual store target value set on a basis of the virtual store sales amount related to the predetermined product before implementation of the first sales measure;

a real store measure execution means that performs processing for implementing the first sales measure related to the predetermined product in the real store in a case where it is determined that the virtual store sales amount is larger than the virtual store target value;

a second verification value calculation means that calculates a real store sales amount related to the predetermined product after implementation of the first sales measure in the real store;

a second goal determination means that determines whether or not the real store sales amount related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real store sales amount related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales amount related to the predetermined product before and after implementation of the first sales measure; and

a virtual store measure re-execution means that executes a second sales measure related to the

predetermined product in the virtual store in a case where it is determined that the real store sales amount is smaller than the real store target value, wherein

the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by artificial intelligence (AI), provision of an advertisement display function in the application in proximity to digital signage, provision of

detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of point of purchase (POP) advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of background music (BGM) in the store.

[Claim 2]

A sales promotion support device comprising:

a real store information storage means that stores a real store sales number related to a predetermined product before implementation of a first sales measure in a real store;

a virtual store information storage means that stores a virtual store sales number related to the

predetermined product before implementation of the first sales measure in a virtual store imitating the real store;

a virtual store realization means that provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store;

a virtual store measure execution means that executes the first sales measure related to the predetermined product in the virtual store;

a first verification value calculation means that calculates a virtual store sales number related to the predetermined product after implementation of the first sales measure in the virtual store;

a first goal determination means that determines whether or not the virtual store sales number related to the predetermined product after implementation of the first sales measure is larger than a virtual store target value set on a basis of the virtual store sales number related to the predetermined product before implementation of the first sales measure;

a real store measure execution means that performs processing for implementing the first sales measure related to the predetermined product in the real store in a case where it is determined that the virtual store sales number is larger than the virtual store target value;

a second verification value calculation means that calculates a real store sales number related to the predetermined product after implementation of the first sales measure in the real store;

a second goal determination means that determines whether or not the real store sales number related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real store sales number related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales number related to the predetermined product before and after implementation of the first sales measure; and

a virtual store measure re-execution means that executes a second sales measure related to the predetermined product in the virtual store in a case where it is determined that the real store sales number is smaller than the real store target value, wherein

the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign

information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP

advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[Claim 3]

A sales promotion support method in a computer that includes a real store information storage means that stores a real store sales amount related to a predetermined product before implementation of a first sales measure in a real store, and a virtual store information storage means that stores a virtual store sales amount related to the predetermined product before implementation of the first sales measure in a virtual store imitating the real store, the sales promotion support method comprising:

a step in which a virtual store realization means provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store;

a step in which a virtual store measure execution means executes the first sales measure related to the predetermined product in the virtual store;

a step in which a first verification value

calculation means calculates a virtual store sales amount related to the predetermined product after implementation of the first sales measure in the virtual store;

a step in which a first goal determination means determines whether or not the virtual store sales amount related to the predetermined product after implementation of the first sales measure is larger than a virtual store target value set on a basis of the virtual store sales amount related to the predetermined product before implementation of the first sales measure;

a step in which a real store measure execution means performs processing for implementing the first sales measure related to the predetermined product in the real store in a case where it is determined that the virtual store sales amount is larger than the virtual store target value;

a step in which a second verification value calculation means calculates a real store sales amount related to the predetermined product after implementation of the first sales measure in the real store;

a step in which a second goal determination means determines whether or not the real store sales amount related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real

store sales amount related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales amount related to the predetermined product before and after implementation of the first sales measure; and

a step in which a virtual store measure re-execution means executes a second sales measure related to the predetermined product in the virtual store in a case where it is determined that the real store sales amount is smaller than the real store target value, wherein

the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the

application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[Claim 4]

A sales promotion support method in a computer that

includes a real store information storage means that stores a real store sales number related to a predetermined product before implementation of a first sales measure in a real store, and a virtual store information storage means that stores a virtual store sales number related to the predetermined product before implementation of the first sales measure in a virtual store imitating the real store, the sales promotion support method comprising:

a step in which a virtual store realization means provides a simulation environment in which a virtual customer who is caused to mimic a customer behavior is able to purchase the predetermined product in the virtual store;

a step in which a virtual store measure execution means executes the first sales measure related to the predetermined product in the virtual store;

a step in which a first verification value calculation means calculates a virtual store sales number related to the predetermined product after implementation of the first sales measure in the virtual store;

a step in which a first goal determination means determines whether or not the virtual store sales number related to the predetermined product after implementation of the first sales measure is larger than a virtual store target value set on a basis of the virtual store sales number related to the predetermined product before

implementation of the first sales measure;

a step in which a real store measure execution means performs processing for implementing the first sales measure related to the predetermined product in the real store in a case where it is determined that the virtual store sales number is larger than the virtual store target value;

a step in which a second verification value calculation means calculates a real store sales number related to the predetermined product after implementation of the first sales measure in the real store;

a step in which a second goal determination means determines whether or not the real store sales number related to the predetermined product after implementation of the first sales measure is larger than a real store target value set on a basis of an assumption that the real store sales number related to the predetermined product before implementation of the first sales measure increases to a similar extent to an increase in the virtual store sales number related to the predetermined product before and after implementation of the first sales measure; and

a step in which a virtual store measure re-execution means executes a second sales measure related to the predetermined product in the virtual store in a case where it is determined that the real store sales number is

smaller than the real store target value, wherein

the first sales measure and the second sales measure are measures for promoting sales related to the predetermined product, and include a change of a price related to the predetermined product, a change of a package related to the predetermined product, notification of coupon information, sale information, and campaign information to an application, use of a digital stamp using the application, use of a point system in which a point is given on a basis of a store visit action, notification of product information to the application, display of a sales promotion flier in the application, ranking customers according to a use status and providing a bonus or a discount according to the rank, provision of a game function in which a point or a coupon is won, provision of a position display function of a search product in the application, provision of an in-store guidance function by the application, provision of a real-time notification function by the application using sensing of a sensor installed in the store, provision of an interactive customer service function by AI, provision of an advertisement display function in the application in proximity to digital signage, provision of detailed information regarding digital signage display advertisement in the application, provision of a payment function by the

application, notification of coupon information, sale information, and campaign information to the application, notification of prescription information to the application, notification of digital receipt information to the application, provision of a past use history confirmation function in the application, implementation of demonstration sales in the store, implementation of POP advertising, provision of sales promotion information by digital signage, provision of novelty goods, use of a point system, implementation of sampling, implementation of food tasting and drink tasting, change of in-store layout, change of a product display position, installation of sales promotion furniture, installation of a top board and banners, or change of BGM in the store.

[Claim 5]

A sales promotion support program for causing a computer to execute the method according to claim 3 or 4.