METHOD OF ONLINE SHOPPING USING SMART CONTAINER SHOP

BACKGROUND

Field

[1] The present disclosure relates to a method of online shopping and, more particularly, to a method of online shopping using a smart container shop, by which a user can receive a product that he/she has purchased, in an intended location.

Description

[2] According to a typical method of shopping for products online, a user inputs a specific product into a shopping basket using a purchase system of an online shopping mall, pays for an order using the purchase system, and receives the product delivered by a courier system or directly collects the product from an offline store. This process will be described in more detail as follows.

[3] Patent Document 1 relates to a method of online shopping, by which a shopping mall homepage provides a user computer with a client program, receives information regarding products, extracted by the client program, from the user computer, stores the received information regarding products, and provides the stored information regarding products to the user computer.

[4] In addition, when the user computer receives the information regarding products, the user computer transfers a

purchase request message for a specific product to the online shopping basket system. Then, the online shopping basket system transfers identification information to a shopping mall server selling the product.

[5] Patent Document 2 relates to a method of online management for the delivery of a product. When a buyer selects an intended product and inputs the name of a membership site to which a product recipient is subscribed and an identifier (ID) used by the product recipient, information regarding delivery of the product to the product recipient, corresponding to the input ID, is searched for, and the product is delivered to the product recipient.

[6] Methods of online shopping and methods of online management for the delivery of a product of the related art provide the convenience of online purchase. However, since the product is delivered using a courier system by a courier company, a recipient must carry the product using a transportation means, such as a car, when the product is a travel product.

[7] When a specific product is purchased via online shopping for the purpose of travel or a business trip, the product must be carried, which is problematic. Even in the case in which the user directly collects the product from an offline store, the offline store may be located significantly distant from a destination, and the user must travel to the destination, which

is inconvenient.

[8] Accordingly, the present disclosure is intended to improve methods of online shopping and methods of online management for the delivery of a product of the related art, so that a user or recipient can receive the product in a destination.

[9] The information disclosed in the Background section is only provided for a better understanding of the background and should not be taken as an acknowledgment or any form of suggestion that this information forms prior art that would already be known to a person skilled in the art.

Related Art Document

[10] Patent Document 1: Korean Patent Application Publication No. 10-2010-0109714

[11] Patent Document 2: Korean Patent Application Publication No. 10-2002-0035074

BRIEF SUMMARY

[12] Various aspects of the present disclosure provide a method of online shopping using a smart container shop, by which a user can receive a purchased product in an intended location, so that convenience of shopping can be improved.

[13] According to an aspect, a method of online shopping may

include: when information regarding a product ordered by a user terminal and information regarding an area selected by the user terminal are received, initiating, by a shopping server of a shopping system, a payment process to provide a payment interface screen to the user terminal, and approving payment in concert with a payment server; generating, by the shopping server, a quick response (QR) code based on the information regarding the product and transferring the QR code to the user terminal; executing, by the user terminal, a shopping application received from the shopping server by visiting a smart container shop, among a plurality of smart container shops distributed throughout a whole country or across countries, corresponding to the information regarding the area, and when tagged or brought adjacently to a QR code reader provided in the smart container shop, enabling short-range wireless communication; recognizing, by the QR code reader, the QR code included in the user terminal, extracting the information regarding the product corresponding to the recognized QR code, generating a product information output signal including the information regarding the product, and transferring the product information output signal to the smart container shop; and when the product information output signal is received from the QR code reader, outputting, by the smart container shop, the product corresponding to the product information output signal.

[14] The QR code may include the information regarding the product, a shop code indicating a smart container shop located in a specific area, and information regarding a price of the product.

[15] The method may further include, when a QR code change signal is received from the user terminal, regenerating, by the shopping server, a QR code by changing at least one of information regarding an area in which the smart container shop is located and the information regarding the product.

[16] The smart container shop may include: a container having a shape of a rectangular box; a rack disposed in an internal space of the container, the internal space communicating with an entrance of the container; a container-enlarging unit disposed outside of the container to enlarge the internal space; an input-output unit disposed in one face of the container-enlarging unit facing the entrance, and including a pair of openings spaced apart from each other; and an unmanned truck reciprocally moving between the container and the container-enlarging unit through the internal space.

[17] The unmanned truck may be one selected from among an automated guide vehicle (AGV), a shuttle, a stacker crane, and the like.

[18] The smart container shop may further include: an inner conveyor unit disposed in the internal space of the container-enlarging unit to transport goods when the goods are input or

output via the input-output unit; and a movable outer conveyor unit connected to the inner conveyor unit via the input-output unit.

[19] One face of the container-enlarging unit, crossing the entrance of the container, may be open. The containers and the container-enlarging units may be stacked in stages in a vertical direction and arrayed in rows in a horizontal direction, and may be arranged such that the internal spaces of the stages are shared through the open faces.

[20] The inner conveyor unit may be disposed in a lower stage of the internal spaces of the container-enlarging units. The smart container shop may further include a central control device in an upper stage of the internal spaces, with a charger of the unmanned truck being provided in the central control device.

[21] The smart container shop may further include a lift disposed in a lower stage and an upper stage of the internal spaces defined in the container-enlarging units to hoist and lower the unmanned truck.

[22] The lift may include: vertical guide rails defining a hoistway between the upper stage and the lower stage of the internal spaces; a lift shaft erected in a central portion of the hoistway; and a lift platform moving up and down along the vertical guide rails using an electric hoisting motor disposed on the lift shaft.

[23] The above and other objects, features, and advantages of the present disclosure will be more clearly understood from the following detailed description when taken in conjunction with the accompanying drawings.

[24] In the meantime, terms and words used in the specification and the appended claims should not be interpreted as having ordinary or dictionary meanings, but as meanings and concepts conforming to the technical spirit of the present disclosure based on the principle that an inventor may properly define the concept of the terms at his/her own discretion in order to describe the invention in the best manner possible.

[25] According to an exemplary embodiment, the reliability of online shopping using a smart container shop can be improved due to improved convenience of online shopping, thereby leading to sales increase.

[26] In addition, according to an exemplary embodiment, the smart container shop can be constructed in any empty lot regardless of location, since the smart container shop can be operated as an unmanned store. For example, the smart container shop can provide convenience of shopping to people residing in areas distant from population centers. In addition, it is easy to identify consumption patterns according to area. It is therefore possible to generate big data and increase the variety of products available.

BRIEF DESCRIPTION OF THE DRAWINGS

[27] The above and other objects, features and advantages of the present disclosure will be more clearly understood from the following detailed description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a conceptual view illustrating a system of online shopping according to an exemplary embodiment;

FIG. 2 is a flowchart illustrating a method of online shopping using a smart container shop according to an exemplary embodiment;

FIG. 3 is an assembled perspective view illustrating a smart container shop according to an exemplary embodiment;

FIG. 4 is a side elevation view illustrating key portions of the smart container shop according to an exemplary embodiment;

FIG. 5 is a perspective view illustrating the input-output unit of the smart container shop according to an exemplary embodiment;

FIG. 6 is a perspective view illustrating the internal structure of the smart container shop according to an exemplary embodiment;

FIG. 7 is a perspective view illustrating a smart container shop including containers and container-enlarging units stacked and arrayed according to another exemplary embodiment;

FIG. 8 is a perspective view illustrating an internal structure of the smart container shop illustrated in FIG. 5; and

FIG. 9 is a perspective view illustrating key portions of the smart container shop illustrated in FIG. 8.

DETAILED DESCRIPTION

[28] Hereinafter, reference will now be made to embodiments of the present disclosure in detail, examples of which are illustrated in the accompanying drawings. Reference should be made to the drawings, in which the same reference numerals and symbols may be used to designate the same or like components. In the following description of the present disclosure, detailed descriptions of known functions and components incorporated herein will be omitted in the case that the subject matter of the present disclosure may be rendered unclear thereby.

[29] It will be understood that, while terms, such as "first," "second," "A," "B," "(a)," and "(b)," may be used herein to describe various elements, such terms are merely used to distinguish one element from another element. The substance, sequence, or order of such elements are not limited by these terms. It will be understood that when an element is referred to as being "connected to" or "coupled to" another element, not only can it be "directly connected or coupled to" the

other element, but it also can be “indirectly connected or coupled to” the other element via an “intervening” element.

[30] Hereinafter, exemplary embodiments of the present disclosure will be described in detail with reference to the accompanying drawings.

[31] As illustrated in FIG. 1, a method of online shopping according to an exemplary embodiment may be provided using a shopping system including smart container shops 1, a shopping server 2, and a user terminal 3.

[32] The smart container shops 1 are, for example, unmanned convenience stores being operated as unmanned stores. The smart container shops 1 can be distributed and operated throughout an entire country or across countries, since only empty lots are required to emplace the smart container shops 1. Thus, a user can order a product and receive the product in a specific destination, and people residing in areas distant from population centers can conveniently purchase products. Hereinafter, the smart container shop 1 will be described in detail.

[33] The shopping server 2 stores information regarding an ordered product, and generates and transfers a shopping application to the user terminal 3 in order to provide the information regarding the ordered product, in the form of quick response (QR) codes, to the user terminal 3.

[34] Here, QR codes may include, in addition to information regarding products, shop codes indicating smart container shops located in specific areas, such as Seoul, Sokcho, and Busan, information regarding prices of products, and the like.

[35] In addition, when the shopping server 2 receives a payment request for information regarding a product ordered by the user terminal 3, the shopping server 2 approves payment in concert with a payment server, generates QR codes based on the information regarding a product, and sends the QR codes to the user terminal 3.

[36] The user terminal 3 may be a wireless terminal able to wirelessly access a network service using an external communications network or a wired terminal able to access the network service using the external communications network by wires.

[37] The user terminal 3 can access the shopping server 2 and downloads the shopping application, allowing the terminal to receive QR codes, from the shopping server 2, and execute the shopping application to select information regarding a smart container shop 1 in an area in which the user wants to collect a selected product, as well as information regarding the selected product, and receive QR codes of the selected product.

[38] In this manner, the smart container shops 1, distributed throughout an entire country or across countries, can categorize information regarding products stocked thereby into

QR codes and, based on the QR codes, recognize the information regarding products and information regarding prices of products.

[39] Each of the smart container shops 1 is provided with a QR code reader 1a connected to the user terminal 3 via, for example, Bluetooth or a local area network (LAN). The QR code reader 1a can read QR codes from the user terminal 3 that has executed the shopping application.

[40] As illustrated in FIG. 2, a method of online shopping using the smart container shop, according to an exemplary embodiment, includes step S100 of ordering a product, step S102 of generating a QR code, step S104 of recognizing the QR code in a smart container shop, and step S106 of outputting the product.

[41] The user terminal 3 accesses a homepage operated by the shopping server 2 via the Internet by executing a shopping application.

[42] When information regarding the ordered product and information regarding an area from the user terminal 3, the shopping server 2 initiates a payment process of a payment server to provide a payment interface screen to the user terminal 3.

[43] In addition, the shopping server 2 approves payment in concert with the payment server, generates a QR code based on the information regarding the product, and transfers the QR code to the user terminal 3.

[44] After the user executes the shopping application by visiting a smart container shop 1 in the destination, when the user terminal 3 is tagged or brought adjacently to the QR code reader 1a provided in the smart container shop 1, short-range wireless communication is enabled.

[45] The QR code reader 1a recognizes the QR code included in the user terminal 3, extracts information regarding a product corresponding to the recognized QR code, generates a product information output signal, including the information regarding a product, and transfers the product information output signal to, for example, a central control device provided within the smart container shop 1. In this manner, the QR code reader 1a can be electrically connected to the central control device.

[46] When the product information output signal is received from the QR code reader 1a, the central control device controls a device or unit for outputting a product from the smart container shop 1 to output a product corresponding to the product information output code.

[47] For example, when the user travels from Seoul to Sokcho or Busan, the user can order a desirable product in the shopping server 2, acquire the QR code of the ordered product, visit the smart container shop 1 in Sokcho or Busan, and collect the ordered product using the acquired QR code.

[48] According to the exemplary embodiment, it is possible to receive the product in the smart container shop 1 located near

the destination. The user may not be required to carry food or amusement objects, such as a toy or a ride, in a car. This can reduce the load in the car and prevent food from going bad.

[49] An administrator of the smart container shops 1 according to an exemplary embodiment can perform real-time examination to the inventory of the smart container shops 1, distributed throughout an entire country or across countries, through real-time data transmission and reception between a central server and central control devices, and when ordered products are absent from the inventory, supply the products in courier vehicles.

[50] In addition, it is possible to easily identify consumption patterns according to area through communications between the central server and the central control devices. It is therefore possible to generate big data and increase the variety of products available.

[51] It should be understood, however, that the above description is merely illustrative, and the present disclosure is not limited to the above-described operating method.

[52] After the QR code is received from the shopping server 2, in the case of attempting to change the received QR code, the user terminal 3 generates a QR code change signal and transfers the QR code change signal to the shopping server 2. The QR code change signal may include information in which at least one of information regarding an area in which the smart

container shop 1 is located and information regarding a product.

[53] When the QR code change signal is received, the shopping server 2 regenerates a QR code by changing at least one of the information regarding an area in which the smart container shop 1 is located and the information regarding a product. The user terminal 3 receives the regenerated QR code from the shopping server 2 and stores the regenerated QR code.

[54] Hereinafter, the smart container shop according to an exemplary embodiment will be described in detail with reference to the accompanying drawings.

[55] As illustrated in FIGS. 3 to 6, the smart container shop according to an exemplary embodiment includes a container 10. The container 10 may be provided in a standard configuration having the shape of a rectangular box. The smart container shop may be provided in an empty lot, such as an open-air yard, using the container 10.

[56] One face of the container 10, in the longitudinal direction, is open, thereby forming an entrance 11, through which an internal space 12 is open externally. That is, one face among six faces of the container 10, in the longitudinal direction, is open to form the entrance 11, through which the internal space 12 is open externally.

[57] The smart container shop including the contain 10, according to an exemplary embodiment, further includes one or

more racks 20 disposed and operated in an internal space 12 of the container 10 and a container-enlarging unit 30 disposed outside of the container 10 to enlarge the internal space 12.

[58] In addition, the smart container shop further includes an input-output unit 40 disposed in one face of the container-enlarging unit 30 and an unmanned truck 50 for reciprocating between the container 10 and the container-enlarging unit 30 to load products, input via the input-output unit 40, onto the racks 20 or to output products, loaded on the racks 20, via the input-output unit 40.

[59] The racks 20 respectively include, for example, vertical frames 20a arranged at equal distances and a plurality of stages of shelves 20b connected to the vertical frames 20a to extend in the longitudinal direction. The racks 20 are disposed and operated in the internal space 12 of the container 10 communicating with the entrance 11. The racks 20 may be arranged as a pair of racks facing each other at a predetermined distance such that an aisle is provided therebetween.

[60] According to the present exemplary embodiment, a variety of products can be loaded or a variety of plants can be cultivated on the racks 20. For example, the smart container shop according to an exemplary embodiment may be used as a courier warehouse or a logistics warehouse in an intermediate base or as a frozen or refrigerated storage. The smart

container shop can be used not only as a shopping mall, but also as an unmanned store, an unmanned locker, a courier locker, an unmanned bookstore, an unmanned library, an unmanned farm, and the like.

[61] The container-enlarging unit 30 according to an exemplary embodiment is configured to enlarge the internal space 12 of the container 10, and is disposed outside of the container 10, in the longitudinal direction.

[62] In this regard, the container-enlarging unit 30 is a polyhedron, for example, faces of which are defined by vertically and horizontally connecting outer frames 32, which may be interpreted as being typical beams, and connecting iron plates to the outer frames 32, such that a top face 33, a bottom face 34, a front face 35, and side faces 35 are provided. Although the container-enlarging unit 30 illustrated as the polyhedron in the drawings, the container-enlarging unit is not limited thereto.

[63] The rear face of the container-enlarging unit 30, adjoining the entrance 11 of the container 10, is open, such that the internal space 12 of the container 10 is enlarged through the open rear face. The input-output unit 40 is provided in the front face 35 facing the entrance 11, such that products can be input from the outside and can be unloaded and output from the racks 20.

[64] The container-enlarging unit 30 may be configured such

that the left face thereof on the drawings, intersecting the entrance 11 of the container 10, is open. A door 22 for opening and closing the internal space of the container-enlarging unit 30 may be provided in the open left face.

[65] It should be noted in advance that the space provided within the container-enlarging unit 30 will be referred to as an auxiliary internal space 31 hereinafter so as to not be confused with the internal space 12 of the container 10. In addition, a container door provided in the fabrication of the container 10 may be used as the door 22.

[66] The input-output unit 40 is provided in the front face 35 of the container-enlarging unit 30 to communicate the auxiliary internal space 31 with the outside. In this regard, the input-output unit 40 has the openings 41. For example, a pair of openings 41 may be disposed at a distance in order to facilitate rapid input and output of products. In addition, a QR code reader may be provided between the openings 41.

[67] In addition, the input-output unit 40 may include a door unit 42 configured to open and close the openings 41 and a plurality of conveyor rollers 43 rotatably disposed on the bottom of the openings 41 to facilitate the input and output of products.

[68] In the input-output unit 40, the door unit 42 includes, for example, sliding doors 42a located in the auxiliary internal space 31 to open and close the openings 41. Each of

the sliding doors 42a may operate using sensors to automatically sense the unmanned truck 50 to open and close an opening 41 corresponding thereto when the unmanned truck 50 approaches the opening 41 to input or output products.

[69] The unmanned truck 50 is a vehicle automatically transporting products without being directly controlled by a person, and is typically referred to as an automated guided vehicle (AGV). The unmanned truck 50 used herein may be one of known unmanned trucks, having an appropriate specification. It should be understood, however, that the unmanned truck 50 is not limited to the AGV, since the unmanned truck 50 may be one of other known transport vehicles, such as a shuttle, a stacker crane, or the like.

[70] The unmanned truck 50, as described above, is disposed in the auxiliary internal space 31 to reciprocally move between the container 10 and the container-enlarging unit 30 to load input products onto the racks 20 disposed in the internal space 12 or automatically transport and output products from the racks 20.

[71] According to the present exemplary embodiment, due to the racks 20 disposed in the internal space 12 and the container-enlarging unit 30 enlarging the internal space 12, the container 10 can be used for a variety of purposes. Accordingly, the container 10 can be effectively enlarged.

[72] The smart container shop according to an exemplary

embodiment further includes inner conveyor units 60 disposed in the auxiliary internal space 31 and an outer conveyor unit 70 connected to the inner conveyor units 60 via the input-output unit 40 in order to facilitate the input and output of products via the input-output unit 40.

[73] For example, each of the inner conveyor units 60 includes a fixed frame 61 disposed in the auxiliary internal space 31 and a plurality of rollers 62 rotatably disposed on top of the fixed frame 61. The inner conveyor unit 60 allows products to slide thereon, so that products input via the opening 41 can be delivered to the unmanned truck 50 or products transported by the unmanned truck 50 can be output via the opening 41 corresponding thereto. The inner conveyor unit 60 may be implemented as a typical roller conveyor.

[74] The number of the inner conveyor units 60 is the same number as the number of the openings 41, such that one inner conveyor unit 60 is disposed and operated for every opening 41. It is illustrated in the drawings that a pair of inner conveyor units 60 are disposed in association with a pair of openings 41, respectively.

[75] The outer conveyor unit 70 is provided by modifying a typical AGV by applying a roller conveyor to the top portion of the AGV. Unlike the stationary inner conveyor units 60, the outer conveyor unit 70 is configured to be movable to transport products.

[76] The outer conveyor unit 70 can reciprocally move between the pair of openings 41 disposed in the input-output unit 40, thereby facilitating the input and output of products.

[77] According to the present embodiment, the inner conveyor units 60 and the outer conveyor unit 70 can be operated in association with the unmanned truck 50 and the input-output unit 40 in order to facilitate the input and output of products, thereby improving the convenience of the smart container shop. In addition, since the smart container shop can be operated as an unmanned store, it is possible to effectively reduce costs.

[78] As illustrated in FIGS. 7 to 9, a smart container shop according to another exemplary embodiment includes containers 10 and container-enlarging units 30, which are stacked in two stages in a vertical direction and arrayed in two rows in a horizontal direction. Each of the container-enlarging units 30 is configured such that one face thereof, crossing the entrances 11 of the containers 10, is open.

[79] That is, a smart container shop comprised of four containers 10 and four container-enlarging units 30 stacked in the vertical direction and arrayed in the horizontal direction is illustrated by way of example. It should be understood, however, that this configuration is merely an example, and the present disclosure is not limited thereto.

[80] The container-enlarging units 30 are arranged so as to

share the auxiliary internal spaces 31 in respective stages through the open faces. Thus, the internal spaces 12 of the containers, in which the racks 20 are disposed, are also shared.

[81] In addition, the container-enlarging units 30 may be configured such that both faces, crossing the entrances 11, are open. Doors 22 may be disposed in the left of the drawings, allowing the auxiliary internal spaces 31 to be opened and closed for the inspection and maintenance of the system of the smart container shop.

[82] In the smart container shop, as described above, the inner conveyor units 60 may be disposed in the lower stage of the auxiliary internal spaces 31, while a central control device 52, with a charger 51 of the unmanned truck 50 being provided or built therein, may be provided in the upper stage of the auxiliary internal spaces 31.

[83] The central control device 52 allows the unmanned truck 50 to be charged, provides a place in which the unmanned truck 50 stands by, and controls the overall operation of the smart container shop.

[84] According to the present exemplary embodiment, the smart container shop can be provided by stacking and arraying a plurality of containers, and it is effective in terms of the ability to enlarge the containers 10. This also facilitates the construction of a shopping mall, a logistics center, or the like. Accordingly, containers can have a direct effect on real

life. In addition, the smart container shop can be operated as an unmanned store using the central control device 52.

[85] In addition, the smart container shop according to an exemplary embodiment further includes a lift 80 for hoisting and lowering the unmanned truck 50, so that the unmanned truck 50 can reciprocally move between the upper stage and the lower stage of the auxiliary internal spaces 31 provided in the container-enlarging units 30.

[86] The lift 80 extends between the upper stage and the lower stage of the auxiliary internal spaces 31 in order to hoisting and lowering the unmanned truck 50. The lift 80 is disposed in the right of the auxiliary internal spaces 31 in which none of the inner conveyor units 60 and the central control device 52 is disposed.

[87] The lift 80 includes vertical guide rails 81 defining a hoistway between the upper stage and the lower stage, a lift shaft 82 erected in a central portion of the hoistway, and a lift platform 84 moving up and down along the vertical guide rails 81 using an electric hoisting motor 83 disposed on the lift shaft 82.

[88] For example, a set of four vertical guide rails 81 are disposed at corners of a rectangle, respectively, to define the hoistway. Each of the vertical guide rails 81 has a U-shaped cross-section. The lift shaft 82, having an H-shaped cross-section, is disposed in the central portion of the hoistway.

The electric hoisting motor 83, acting as a power source motor, is provided in the front portion to operate by sensing that the unmanned truck 50 is aboard the lift platform 84.

[89] The electric hoisting motor 83 is disposed on top of the lift platform 84. The lift platform 84 has a rectangular shape, with corners thereof being connected to the vertical guide rails 81. When the electric hoisting motor 83 is operated, the lift platform 84 is hoisted and lowered along the vertical guide rails 81. When the electric hoisting motor 83 is carried downwardly, the electric hoisting motor 83 is held and fixed by a lift-fixing unit 90, which is provided in the lower stage of the auxiliary internal spaces 31.

[90] According to exemplary embodiments, in the smart container shop having a multi-stage structure, products can be easily transported on the lift 80, so that the convenience of transportation can be effectively improved. It is therefore possible to improve the reliability of the smart container shop.

[91] Although the exemplary embodiments of the present disclosure have been described in detail, this is for illustrative purposes only. The method of online shopping using a smart container shop according to the present disclosure is not limited thereto. The foregoing descriptions and the accompanying drawings have been presented in order to explain certain principles of the present invention. It will

be understood that the terms “comprise”, “include”, and “have”, used herein specify the presence of stated elements but do not preclude the presence or addition of any other elements unless explicitly noted. Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as that which would be commonly understood by a person skilled in the art to which the present invention pertains. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art, and will not be interpreted in an idealized or overly formal sense, unless defined expressly so herein.

[92] The foregoing descriptions and the accompanying drawings have been presented in order to explain the certain principles of the present invention. A person skilled in the art to which the present invention pertains could make many modifications and variations by combining, dividing, substituting for or changing elements without departing from the principle of the present invention. The foregoing embodiments disclosed herein shall be interpreted as being illustrative only, while not being limitative, of the principle and scope of the present invention. It should be understood that the scope of the present invention shall be defined by the appended Claims and all of their equivalents fall within the scope of the present

invention.

WHAT IS CLAIMED IS:

1. A method of online shopping including a shopping system with a plurality of smart container shops in a plurality of locations, a shopping server which generates a shopping application and transfers the shopping application to an user terminal, comprising:

when information regarding a product ordered by the user terminal and information regarding an area and smart container shop selected by the user terminal are received, initiating, by the shopping server of the shopping system, a payment process to provide a payment interface screen to the user terminal, and approving payment in concert with a payment server;

generating, by the shopping server, a quick response (QR) code based on the information regarding the product and shopping application, transferring the QR code to the user terminal;

executing, by the user terminal, a shopping application received from the shopping server by visiting the selected smart container shop, corresponding to the information regarding the area, and when tagged or brought adjacently to a QR code reader provided in the smart container shop, enabling short-range wireless communication;

recognizing, by the QR code reader, the QR code included in the user terminal, extracting the information regarding the

product and shopping application corresponding to the recognized QR code, generating a product information output signal including the information regarding the product, and transferring the product information output signal to the smart container shop; and

when the product information output signal is received from the QR code reader, outputting, by the smart container shop, the product corresponding to the product information output signal.

2. The method according to claim 1, wherein the QR code includes the information regarding the product, a shop code indicating a smart container shop located in a specific area, and information regarding a price of the product.

3. The method according to claim 1, further comprising, when a QR code change signal is received from the user terminal, regenerating, by the shopping server, a QR code by changing at least one of information regarding an area in which the smart container shop is located and the information regarding the product.

4. The method according to claim 1, wherein the smart container shop comprises:

a container having a shape of a rectangular box;

a rack disposed in an internal space of the container, the internal space communicating with an entrance of the container;

a container-enlarging unit disposed outside of the container to enlarge the internal space;

an input-output unit disposed in one face of the container-enlarging unit facing the entrance, and comprising a pair of openings spaced apart from each other; and

an unmanned truck reciprocally moving between the container and the container-enlarging unit through the internal space.

5. The method according to claim 4, wherein the smart container shop further comprises:

an inner conveyor unit disposed in the internal space of the container-enlarging unit to transport goods when the goods are input or output via the input-output unit; and

a movable outer conveyor unit connected to the inner conveyor unit via the input-output unit.

6. The method according to claim 5, wherein one face of the container-enlarging unit, crossing the entrance of the container, is open, and

the containers and the container-enlarging units are stacked in stages in a vertical direction and arrayed in rows

in a horizontal direction, and are arranged such that the internal spaces of the stages are shared through the open faces.

7. The method according to claim 6, wherein the inner conveyor unit is disposed in a lower stage of the internal spaces of the container-enlarging units, and

the smart container shop further comprising a central control device in an upper stage of the internal spaces, with a charger of the unmanned truck being provided in the central control device.

8. The method according to claim 7, wherein the smart container shop further comprises a lift disposed in a lower stage and an upper stage of the internal spaces defined in the container-enlarging units to hoist and lower the unmanned truck.