

DESCRIPTION

TITLE OF INVENTION: METHOD OF PROVIDING REGION-BASED DELIVERY
ORDER AND SERVER AND WIRELESS TERMINAL PERFORMING THE SAME
Technical Field

5 The present disclosure relates to a method of providing a region-based delivery
order and a server and a wireless terminal configured to perform the method, and more
specifically, to a method of determining a type of a delivery order based on a terminal
position of a wireless terminal of a rider performing delivery and a region of a branch to
which the rider belongs and providing the type of the delivery order to the wireless
10 terminal.

Background Art

 With the growing demands for a delivery service, such as a courier service or
food delivery service, a delivery work management technology or service used, for
example, to efficiently distribute delivery work to a rider performing delivery, has been
15 actively increasing.

 Generally, riders make a contract with a branch that manages delivery orders
within a certain range including several stores, and riders belonging to the branch are
managed to perform delivery work according to a delivery order within the range.

 In this case, the certain range including several stores is referred to as a service
20 region of the branch, and the service region may be determined based on a store position
of stores requesting delivery orders to the branch. In addition, a range to which the
stores included by the service region intend to deliver is referred to as a sales region.

 A supply region is a delivery range provided by one branch. That is, the supply
region may be determined based on an operation range of a rider to process delivery
25 orders within the service region in the branch. In other words, a rider in a specific branch
may need to perform delivery orders from the service region of the branch, and when a
delivery position of a delivery order among delivery orders is outside the supply region,
the delivery order may not be readily processed.

 Specifically, when a rider processes the delivery order of which the delivery
30 position is outside the supply region, the rider may have to accept the inefficiency of
returning to the service region without a new delivery order because delivery orders
outside the supply region are delivery orders from another branch.

In addition, when the branch assigns a delivery order outside the supply region, the branch also may not efficiently manage delivery because the number of riders who may perform delivery according to a delivery order is limited for a certain time.

Due to the above issues, the sales region is typically limited to the supply region. FIG. 2 is a diagram illustrating an example of a typical region. Referring to FIG. 2, because a sales region 202 of a specific branch is typically limited to a supply region 203, for example, (a) of FIG. 2, a delivery order of which a store position belongs to a service region 201 of the specific branch, but of which a delivery position is outside the supply region 203 of the branch, may not readily processed for the reasons described above.

In addition, a delivery order, for example, (a) of FIG. 2, of which a delivery position belongs to the supply region 203 of the specific branch, among delivery orders from a service region 211 of another branch may not be performed by a rider of the specific branch. For an efficient operation of a rider, the delivery order described above may be allowed to be performed by a rider of the specific branch although the delivery order belongs to the other branch.

Disclosure of the Invention

Technical Goals

The present disclosure provides a method of expanding a sales region by determining an order outside a service region of a branch to be a return order based on a position of a wireless terminal of a rider performing delivery and a region of the branch to which the rider belongs and providing it to the wireless terminal.

In addition, the present disclosure provides a method of efficiently processing delivery between different branches by determining a delivery order from a branch to be a shared order based on a position of a wireless terminal of a rider performing delivery and a region of another branch to which the rider belongs and providing it to the wireless terminal.

Technical Solutions

According to an embodiment, a method of providing a region-based delivery order performed by a server includes receiving delivery orders including information on a store position that is a departure position of each of the delivery orders and information on a delivery position that is an arrival position of each of the delivery orders, identifying information on a terminal position of a wireless terminal of a rider performing delivery

according to the delivery orders and information on a service region of a branch to which the rider belongs and a supply region of the branch, determining i) the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) the service region and the supply region, and iii) a type of the delivery orders according to a relationship of the terminal position, and providing the delivery orders and the determined type of the delivery orders to the wireless terminal.

The service region is a region determined based on a store position of stores requesting the delivery orders to the branch, and the supply region is determined based on an operation range of the rider to process delivery orders from the service region in the branch.

In the determining the type of the delivery orders, when a store position of a delivery order belongs to the service region, the type of the delivery order is determined to be a service order.

In the determining the type of the delivery orders, when a store position of a delivery order belongs to the service region, and a delivery position of the delivery order does not belong to the supply region, the type of the delivery order is determined to be a long-distance order.

In the determining the type of the delivery orders, when a store position of a delivery order does not belong to the service region of the branch, and the store position of the delivery order and a delivery position of the delivery order belong to the supply region of the branch, the type of the delivery order is determined to be a shared order.

In the determining the type of the delivery orders, when the terminal position does not belong to the supply region of the branch, a store position of a delivery order is within a certain distance from the terminal position, and a delivery position of the delivery order belongs to the supply region of the branch, the type of the delivery order is determined to be a return order.

The providing the delivery orders and the determined type of the delivery orders includes, when the terminal position belongs to the supply region, providing the delivery orders of which the type of the delivery order is either a long-distance order or a shared order.

The providing the delivery orders and the determined type of the delivery orders further includes, when the terminal position does not belong to the supply region,

providing the delivery orders of which the type of the delivery order is either a service order or a return order.

According to another embodiment, a method of providing a region-based delivery order performed by a server includes receiving delivery orders including
 5 information on a store position that is a departure position of each of the delivery orders and information on a delivery position that is an arrival position of each of the delivery orders, identifying information on terminal positions of each of wireless terminals of riders performing delivery according to the delivery orders and information on a service region of branches to which each of the riders belongs and a supply region of the branches,
 10 determining i) a store position of each of the delivery orders and a delivery position of each of the delivery orders, ii) the service region of the branches and the supply region of the branches, and iii) a type of a delivery order according to each of the wireless terminals based on a relationship of the terminal positions, and providing the delivery order and the determined type of the delivery order according to each of the wireless terminals to the
 15 wireless terminals.

The service region is a region determined based on a store position of stores requesting the delivery orders to a branch, and the supply region is determined based on an operation range of the rider to process delivery orders from the service region in the branch.

20 The determining the type of the delivery order includes, when a store position of the delivery order belongs to a service region of a branch to which a specific rider among the riders belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a service order.

The determining the type of the delivery order further includes, when a store
 25 position of the delivery order belongs to a service region of a branch to which a specific rider among the riders belongs, and a delivery position of the delivery order does not belong to a supply region of the branch to which the specific rider belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a long-distance order.

30 The determining the type of the delivery order further includes, when a store position of the delivery order does not belong to a service region of a branch to which a specific rider among the riders belongs, and the store position of the delivery order and

the delivery position of the delivery order belong to a supply region of the branch to which the specific rider belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a shared order.

The determining the type of the delivery order further includes, when a terminal position of a wireless terminal of a specific rider among the riders does not belong to a supply region of a branch to which the specific rider belongs, a store position of the delivery order is within a certain distance from the terminal position, and a delivery position of the delivery order belongs to the supply region of the branch to which the specific rider belongs, determining the type of the delivery order for the wireless terminal of the specific rider to be a return order.

The providing the delivery order and the determined type of the delivery order includes, when a terminal position of a wireless terminal of a specific rider among the riders belongs to a supply region to which the specific rider belongs, providing a delivery order of which the type of the delivery order is determined for the wireless terminal of the specific rider to be one of a service order, a long-distance order, and a shared order to the wireless terminal of the specific rider.

The providing the delivery order and the determined type of the delivery order further includes, when a terminal position of a wireless terminal of a specific rider among the riders does not belong to a supply region to which the specific rider belongs, providing a delivery order of which the type of the delivery order is determined for the wireless terminal of the specific rider to be either a service order or a return order to the wireless terminal of the specific rider.

According to another embodiment, a method of providing a region-based delivery order performed by a wireless terminal includes receiving delivery orders including information on a store position and a delivery position and a type of the delivery orders from a server, and displaying a type of each of the delivery orders, a store position of each of the delivery orders, and a delivery position of each of the delivery orders on a display of the wireless terminal, in which the type of each of the delivery orders is determined based on i) information on the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) information on a service region of a branch to which a rider performing delivery through the wireless terminal belongs and a supply region of the branch, and iii) a relationship of a terminal position of the

wireless terminal.

According to another embodiment, a server configured to perform a method of providing a region-based delivery order includes a processor, in which the processor is configured to receive delivery orders including information on a store position and a delivery position, identify a service region of a branch to which a rider performing delivery according to the delivery orders and a supply region of the branch and information on a terminal position of a wireless terminal of the rider, determining i) information on a store position of each of the delivery orders and a delivery position of each of the delivery orders, ii) the service region of the branch and the supply region of the branch, and iii) a type of the delivery orders according to a relationship of the terminal position, and providing the delivery orders and the determined type of the delivery orders to the wireless terminal.

According to another embodiment, a server configured to perform a method of providing a region-based delivery order includes a processor, in which the processor is configured to receive a delivery order including information on a store position and a delivery position, identify a service region of branches to which riders performing delivery according to the delivery order and a supply region of the branches and information on terminal positions of wireless terminals of the riders, determining i) information on the store position of the delivery order and the delivery position of the delivery order, ii) the service region of the branches and the supply region of the branches, and iii) a type of a delivery order according to each of the wireless terminals based on a relationship of the terminal positions, and providing the delivery order and the determined type of the delivery order according to each of the wireless terminals to the wireless terminals.

According to another embodiment, a wireless terminal configured to perform a method of providing a region-based delivery order includes a processor, in which the processor is configured to receive delivery orders including information on a store position and a delivery position from a server and display a type of each of the delivery orders, a store position of each of the delivery orders, and a delivery position of each of the delivery orders on a display of the wireless terminal, and the type of each of the delivery orders is determined based on i) information on the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) information on

a service region of a branch to which a rider belongs and a supply region of the branch, and iii) a relationship of a terminal position of the wireless terminal.

Effects

According to another embodiment, a sales region may be expanded by
 5 determining an order outside a service region of a branch to be a return order based on a position of a wireless terminal of a rider performing delivery and a region of the branch to which the rider belongs and providing it to the wireless terminal.

In addition, delivery between different branches may be efficiently processed by determining a delivery order from a branch to be a shared order based on a position of a
 10 wireless terminal of a rider performing delivery and a region of another branch to which the rider belongs and providing it to the wireless terminal.

Brief Description of Drawings

FIG. 1 is a diagram illustrating a structure of a server and a wireless terminal according to an embodiment.

15 FIG. 2 is a diagram illustrating an example of a typical region.

FIG. 3 is a diagram illustrating a type of a delivery order when a wireless terminal of a rider is within a supply region, according to an embodiment.

FIG. 4 is a diagram illustrating a type of a delivery order when a wireless terminal of a rider is outside a supply region, according to an embodiment.

20 FIG. 5 is a diagram illustrating a type of a delivery order provided to a wireless terminal of a rider according to an embodiment.

FIG. 6 is a diagram illustrating an example of a delivery order displayed on a wireless terminal of a rider according to an embodiment.

25 FIG. 7 is a flowchart illustrating a method of providing a delivery order according to an embodiment.

Best Mode for Carrying Out the Invention

Hereinafter, examples will be described in detail with reference to the accompanying drawings. However, various alterations and modifications may be made to the embodiments. Here, the embodiments are not construed as limited to the
 30 disclosure. The embodiments should be understood to include all changes, equivalents, and replacements within the idea and the technical scope of the disclosure.

The terminology used herein is for the purpose of describing particular

embodiments only and is not to be limiting of the embodiments. The singular forms "a", "an", and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises/comprising" and/or "includes/including" when used herein, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components and/or groups thereof.

Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which embodiments belong. 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 expressly so defined herein.

When describing the embodiments with reference to the accompanying drawings, like reference numerals refer to like constituent elements and a repeated description related thereto will be omitted. In the description of embodiments, detailed description of well-known related structures or functions will be omitted when it is deemed that such description will cause ambiguous interpretation of the present disclosure.

FIG. 1 is a diagram illustrating a structure of a server and a wireless terminal according to an embodiment.

The present disclosure relates to a method of providing region-based delivery orders 105 to 107 and a server 101 and wireless terminals 102 to 104 configured to perform the method and to a method of determining a type of the delivery orders 105 to 107 based on a terminal position of the wireless terminals 102 to 104 of a rider performing delivery and a region of a branch to which the rider belongs and providing the type of the delivery orders 105 to 107 to the wireless terminals 102 to 104. The server 101 and the wireless terminals 102 to 104 may include a processor, and the processor may perform the method of providing the delivery orders 105 to 107.

Referring to FIG. 1, the server 101 may receive the delivery orders 105 to 107 and provide the delivery orders 105 to 107 to the wireless terminals 102 to 104. In this process, the server 101 may provide the delivery orders 105 to 107 respectively to the wireless terminals 102 to 104 by determining the delivery orders 105 to 107 respectively

for the wireless terminals 102 to 104.

Specifically, the wireless terminals 102 to 104 each may belong to different riders, and because the riders each may belong to different branches or be in different positions, the server 101 may efficiently assign delivery tasks and expand a sales region by
5 increasing the delivery tasks provided to the wireless terminals 102 to 104 by determining the type of the delivery orders 105 to 107 respectively for the wireless terminals 102 to 104 based on a service region of a branch to which a rider belongs, a supply region of the branch, and a relationship of a terminal position.

As described above, a certain range including several stores is referred to as the
10 service region of a branch, and the service region may be determined based on a store position of stores requesting the delivery orders 105 to 107 to the branch. The supply region may be an operation range of a rider of one branch. That is, the supply region may be determined based on an operation range of a rider to process the delivery orders 105 to 107 within the service region in the branch.

Accordingly, the supply region may vary depending on branches, and a portion
15 of the supply region of a branch may overlap with a portion of the supply region of another branch. Since the supply region is an operation range of a rider to process delivery in the service region of the branch, the supply region may be determined by the branch within a certain distance range from the service region.

That is, because delivery may not be efficiently processed because a time of
20 riders travelling to and from the service region to process delivery increases when the supply region is excessively large, the supply region may be determined to be within a certain distance range from the service region.

The delivery orders 105 to 107 may include information on a store position that
25 is a departure position of the delivery orders 105 to 107 and information on a delivery position that is an arrival position of the delivery orders 105 to 107. The delivery position may not belong to the supply region because the delivery position may be determined by a customer of a store regardless of the supply region.

In the present disclosure, by adding a service order, a long-distance order, and a
30 return order as the type of the delivery orders 105 to 107, even when a rider processes the delivery orders 105 to 107 of which the delivery position does not belong to the supply region, the server 101 may enable the rider to easily return to the service region of a

branch to which the rider belongs by providing the delivery orders 105 to 107 satisfying a return condition among the delivery orders 105 to 107 from the service region of another branch as a return order.

That is, the type of the delivery orders 105 to 107 may vary depending on a
 5 branch to which a rider belongs or a terminal position of the wireless terminals 102 to 104 of the rider even for the same delivery orders 105 to 107, and the rider may receive another type of the delivery orders 105 to 107 according to the branch to which the rider currently belongs or the terminal position.

In addition, the server 101 may process a delivery in the supply region of the
 10 branch to which the rider belongs by providing the delivery orders 105 to 107 satisfying a sharing condition among the delivery orders 105 to 107 from the service region of the other branch as a shared order.

In this case, the service order may be the delivery orders 105 to 107 from the service region of the branch to which the rider belongs. The long-distance order may be
 15 the delivery orders 105 to 107 of which the delivery position is outside the supply region of the branch among the delivery orders 105 to 107 from the service region of the branch to which the rider belongs. That is, the long-distance order is the delivery orders 105 to 107 of which the delivery position is outside the supply region of the branch among service orders.

20 The shared order is the delivery orders 105 to 107 from the service region of the other branch, in which the store position of the delivery orders 105 to 107 does not belong to the service region of the branch to which the rider belongs and the store position of the delivery orders 105 to 107 and the delivery position of the delivery orders 105 to 107 belong to the supply region of the branch.

25 The return order may be the delivery orders 105 to 107, in which the terminal position of the rider does not belong to the supply region of the branch to which the rider belongs, the store position of the delivery orders 105 to 107 is within a certain distance from the terminal position, and the delivery position of the delivery orders 105 to 107 may belong to the supply position of the branch.

30 That is, the return order may be the delivery orders 105 to 107 from a service position of the other branch for inducing the rider to return to the service region of the branch to which the rider belongs or the supply region of the branch.

The server 101 may provide the rider with a return order or a service order to induce the rider outside the supply region to process the return order. In addition, the server 101 may assign an additional fee to the return order and induce the rider to process the return order.

5 FIG. 3 is a diagram illustrating a type of a delivery order when a wireless terminal of a rider is within a supply region, according to an embodiment.

When a store position of the delivery order belongs to a branch to which the rider belongs, a server may determine the type of the delivery order for the wireless terminal of the rider to be a service order.

10 In other words, when there is a plurality of delivery orders, the server may determine delivery orders of which the store position belongs to a service region of a specific branch to be the service order for a wireless terminal of a rider belonging to the specific branch.

15 In addition, when there is a plurality of riders, and the store position of a delivery order belongs to the service region of a branch to which a specific rider belongs among the riders, the server may determine the type of the delivery order for a wireless terminal of the specific rider to be a service order.

Referring to FIG. 3, a delivery order (e.g., (a) of FIG. 3) from a service region 301 of a branch to which a rider 300 belongs may be determined for a wireless terminal
20 of the rider 300 to be a service order.

When the store position of a delivery order belongs to the service region of the branch to which the rider belongs, and the delivery position of the delivery order does not belong to the supply region of the branch, the server may determine the type of the delivery order for the wireless terminal of the rider to be a long-distance order.

25 In other words, when there is a plurality of delivery orders, the server may determine delivery orders of which the store position belongs to the service region of a specific branch, and of which the delivery position does not belong to the supply region of the specific branch, to be the long-distance order for a wireless terminal of a rider belonging to the specific branch.

30 In addition, when there is a plurality of riders, the store position of a delivery order belongs to the service region of the branch to which a specific rider among the riders belongs, and the delivery position of the delivery order does not belong to the supply

region of the branch, the server may determine the type of the delivery order for the wireless terminal of the specific rider to be a long-distance order.

Referring to FIG. 3, a delivery order (e.g., (b) of FIG. 3) from the service region 301 of the branch to which the rider 300 belongs and of which the delivery position is outside a supply region 302 of the branch to which the rider 300 belongs may be determined for the wireless terminal of the rider 300 to be a long-distance order.

When the store position of a delivery order does not belong to the service region of the branch to which the rider belongs, and the store position of the delivery order and the delivery position of the delivery order belong to the supply region of the branch, the server may determine the type of the delivery order for the wireless terminal of the rider to be a shared order. The shared order is a delivery order from the service region of another branch.

In other words, when there is a plurality of delivery orders, the server may determine delivery orders of which the store position does not belong to the service region of a specific branch, and of which the store position and the delivery position belong to the supply region of the specific branch, to be the shared order for a wireless terminal of a rider belonging to the specific branch.

In addition, when there is a plurality of riders, the store position of a delivery order does not belong to the service region of the branch to which a specific rider among the riders belongs, and the store position of the delivery order and the delivery position of the delivery order belong to the supply region of the branch, the server may determine the type of the delivery order for the wireless terminal of the specific rider to be a shared order.

Referring to FIG. 3, a delivery order (e.g., (c) and (d) of FIG. 3) from a service region 311 of a branch different from the branch to which the rider 300 belongs and of which the store position and the delivery position belong to the supply region 302 of the branch to which the rider 300 belongs may be determined for the wireless terminal of the rider 300 to be a shared order.

In addition, as illustrated in FIG. 3, when the terminal position of the wireless terminal of the rider 300 belongs to the supply region 302 of the branch to which the rider 300 belongs, the server may provide delivery orders of which the type is the service order (e.g., (a) of FIG. 3), the long-distance order (e.g., (b) of FIG. 3), or the shared order (e.g.,

(c) and (d) of FIG. 3) to the wireless terminal of the rider 300.

That is, a delivery order (e.g., (f) of FIG. 3) of which the delivery position belongs to the supply region 302 of the branch to which the rider 300 belongs, but of which the store position does not belong to the supply region 302 may be provided to a rider of the
 5 other branch without being provided to the rider 300.

Likewise, a delivery order (e.g., (e) of FIG. 3) of which the store position belongs to the supply region 302 of the branch to which the rider 300 belongs, but of which the delivery position does not belong to the supply region 302 may be provided to a rider of the other branch without being provided to the rider 300.

10 FIG. 4 is a diagram illustrating a type of a delivery order when a wireless terminal of a rider is outside a supply region, according to an embodiment.

When a terminal position of the wireless terminal of the rider does not belong to the supply region of a branch to which the rider belongs, and a store position of the delivery order is within a certain distance from the terminal position, and a delivery
 15 position of the delivery order belongs to the supply region of the branch, the server may determine the type of the delivery order to be a return order. The return order may be a delivery order from a service region of another branch.

In other words, when there is a plurality of delivery orders, the server may determine delivery orders of which the delivery position belongs to a supply region of a specific branch among the delivery orders for a wireless terminal of a rider of which the
 20 terminal position does not belong to the supply region of the specific branch among riders belonging to the specific branch to be a return order. However, delivery orders exceeding a certain distance from the wireless terminal among the delivery orders may not be provided.

25 In addition, when there is a plurality of riders, a terminal position of a wireless terminal of a specific rider among the riders does not belong to a supply region of a branch to which the specific rider belongs, the store position of a delivery order is within a certain distance from the terminal position, and the delivery position of the delivery order belongs to the supply region of the branch to which the specific rider belongs, the server may
 30 determine the type of the delivery order for the wireless terminal of the specific rider to be a return order.

Referring to FIG. 4, when a wireless terminal of a rider 400 is outside a supply

region 402 of a branch to which the rider 400 belongs, a store position of a delivery order is within a certain distance 403 from the wireless terminal of the rider 400, a delivery position of the delivery order belongs to the supply region 402 of the branch to which the rider 400 belongs, the delivery order (e.g., (d) of FIG. 4) may be determined for the
5 wireless terminal of the rider 400 to be a return order.

In addition, as illustrated in FIG. 4, when the terminal position of the wireless terminal of the rider 400 does not belong to the supply region 402 of the branch to which the rider 400 belongs, the server may provide delivery orders of which the type is a service order (e.g., (a) and (b) of FIG. 4) or a return order (e.g., (d) of FIG. 4) to the wireless
10 terminal of the rider 400.

In addition, the server may additionally provide the wireless terminal of the rider 400 with a delivery order (e.g., (c) of FIG. 4), in which a distance from a delivery position to the service region 401 of the branch to which the rider 400 belongs is less than a distance from a store position to the service region 401 of the branch to which the rider
15 400 belongs among the delivery orders that are determined to be a shared order for the wireless terminal of the rider 400.

Accordingly, although a delivery order (e.g., (b') of FIG. 5) may be determined to be a shared order for a wireless terminal of riders belonging to the branch to which the rider 400 belongs, the delivery order (e.g., (b') of FIG. 5) may not be provided to the
20 wireless terminal of the rider 400 outside the supply region 402 because the distance from the delivery position to the service region 401 is greater than the distance from the store position to the service region 401.

In addition, because the store position of a delivery order (e.g., (a') of FIG. 5) belongs to the supply region 402 of the branch to which the rider 400 belongs, but the arrival position of the delivery order is outside the supply region 402, the type of the
25 delivery order for the wireless terminal of the rider 400 may not be determined and may not be provided to the wireless terminal of the rider 400.

In another embodiment, in determining a return order, when the arrival position of the delivery order does not belong to the supply region 402 of the branch to which the
30 rider 400 belongs, but the store position is within the certain distance 403 from the terminal position of the wireless terminal of the rider 400, and the distance from the delivery position to the service region 401 is less than the distance from the terminal

position of the wireless terminal of the rider 400 to the service region 401, the server may determine the delivery order to be a return order for the wireless terminal of the rider 400 and provide it to the wireless terminal of the rider 400.

Referring to FIG. 4, a delivery order (e.g., (e) and (f) of FIG. 4), in which the
 5 store position is within the certain distance 403 from the terminal position of the wireless terminal of the rider 400, and the distance from the delivery position to the service region 401 is less than the distance from the terminal position of the wireless terminal of the rider 400 to the service region 401, may be determined to be a return order.

Accordingly, a delivery order (e.g., (e') and (f') of FIG. 4), in which the store
 10 position is within the certain distance 403 from the terminal position of the wireless terminal of the rider 400, but the distance from the delivery position to the service region 401 is greater than the distance from the terminal position of the wireless terminal of the rider 400 to the service region 401, may not be provided to the rider 400 but provided to a rider of the other branch.

In addition, a delivery order (e.g., (c') and (d') of FIG. 4), in which the distance
 15 from the delivery position to the service region 401 of the branch to which the rider 400 belongs is less than the distance from the terminal position of the wireless terminal of the rider 400 to the service region 401, but the store position is not within the certain distance 403 from the terminal position of the wireless terminal of the rider 400, may not be
 20 provided to the rider 400 but provided to a rider of the other branch. These are to exclude a delivery order inefficient to be picked up for delivery by the rider 400.

In addition, in determining a return order, when the delivery position of the
 delivery order does not belong to the supply region 402 of the branch to which the rider 400 belongs, but the store position is within the certain distance 403 from the terminal
 25 position of the wireless terminal of the rider 400, and the distance from the delivery position to the service region 401 is less than the distance from the store position to the service region 401, the server may determine the delivery order to be a return order for the wireless terminal of the rider 400 and provide it to the wireless terminal of the rider 400.

Alternatively, in determining a return order, when the store position is within the
 30 certain distance 403 from the terminal position of the wireless terminal of the rider 400, the distance from the delivery position to the service region 401 is less than the distance

from the store position to the service region 401, and the distance from the delivery position to the service region 401 is less than the distance from the terminal position of the wireless terminal of the rider 400 to the service region 401, the server may determine the delivery order to be a return order for the wireless terminal of the rider 400 and provide
5 it to the wireless terminal of the rider 400.

FIG. 5 is a diagram illustrating a type of a delivery order provided to a wireless terminal of a rider according to an embodiment.

Referring to FIG. 5, when there are a service region 501 of a branch to which the rider belongs and a supply region 502 of the branch, a delivery order (e.g., (a) of FIG. 5)
10 may be determined to be a service order for the wireless terminal of the rider because a store position of the delivery order and a delivery position of the delivery order belong to the service region 501.

Likewise, when there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (b) of FIG. 5) may
15 be determined to be a service order for the wireless terminal of the rider because the store position belongs to the service region 501, and the delivery position is within the supply region 502.

When there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (c) of FIG. 5) may be
20 determined to be a shared order for the wireless terminal of the rider because the delivery order is from a service region 511 of another branch, and the store position does not belong to the service region 501, but the store position and the delivery position belong to the supply region 502.

Likewise, when there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (d) of FIG. 5) may
25 be determined to be a shared order for the wireless terminal of the rider because the delivery order is from the service region 511 of the other branch, and the store position and the delivery position belong to the supply region 502.

When there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (e) of FIG. 5) may be
30 determined to be a long-distance order for the wireless terminal of the rider because the store position belongs to the service region 501, but the delivery position is outside the

supply region 502.

When there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (f) of FIG. 5) may be determined to be a return order for a wireless terminal of a rider outside the supply region 502 among riders within a certain distance from the store position because the delivery order is from a service region 521 of yet another branch, and the store position does not belong to the supply region 502, and the delivery position belongs to the service region 501.

The delivery order (e.g., (f) of FIG. 5) may be determined to be a long-distance order for the wireless terminal of the rider belonging to the other branch in which a supply region 522 is determined.

When there are the service region 501 of the branch to which the rider belongs and the supply region 502 of the branch, a delivery order (e.g., (g) of FIG. 5) may be determined to be a return order for the wireless terminal of the rider outside the supply region 502 among the riders within the certain distance from the store position because the delivery order is from a service region 531 of still another branch, and the store position does not belong to the supply region 502, and the delivery position belongs to the supply region 502.

In addition, because the store position of a delivery order (e.g., (a') of FIG. 5) belongs to the supply region 502 of the branch, but the arrival position is outside the supply region 502, the type of the delivery order for the wireless terminal of the rider belonging to the branch may not be determined and may not be provided to the wireless terminal of the rider.

A delivery order (e.g., (b') of FIG. 5) may not be determined to be a regression order because the store position and the arrival position are not included by the supply region 502, and a distance from the arrival position to the service region 501 is greater than a distance from the store position to the service region 501.

FIG. 6 is a diagram illustrating an example of a delivery order displayed on a wireless terminal of a rider according to an embodiment.

FIG. 6 (a) is a diagram illustrating a delivery order displayed on the wireless terminal of the rider and the type of the delivery order when the rider belonging to a branch is within a supply region of the branch.

Referring to FIG. 6 (a), since a terminal position of the wireless terminal of the rider is within the supply region, the wireless terminal does not receive a return order and may receive a service order 601, a shared order 602, and a long-distance order 603.

The wireless terminal may display a list of delivery orders through a display, and factors of the list may respectively display the type of the delivery orders, a store position thereof, and a delivery position thereof. In this case, the wireless terminal may display the delivery orders in an order of receiving them from a server and display the delivery orders by classifying them into the types of delivery.

Alternatively, the wireless terminal may first display service orders at the top of the list among the delivery orders or display the delivery orders by sorting the delivery orders in a descending order of a delivery distance. In addition, the wireless terminal may display the service orders by sorting the service orders in an order of proximity to the terminal position.

FIG. 6 (b) is a diagram illustrating a delivery order displayed on the wireless terminal of the rider and the type of the delivery order when the rider is outside the supply region of the branch.

Referring to FIG. 6 (b), the terminal position of the wireless terminal of the rider is outside the supply region, the wireless terminal may receive return orders 605 and 606 and a service order 604 and may receive a shared order, in which a distance from the delivery position to the service region is less than a distance from the store position to the service region, among shared orders.

Likewise, the wireless terminal may display a list of delivery orders through the display, and factors of the list may respectively display the type of the delivery orders, the store position thereof, and the delivery position thereof. In this case, the wireless terminal may display the delivery orders in an order of receiving them from a server and display the delivery orders by classifying them into the types of delivery.

Alternatively, the wireless terminal may first display return orders at the top of the list among the delivery orders or display the service orders by sorting the service orders in an order of proximity to the terminal position.

FIG. 7 is a flowchart illustrating a method of providing a delivery order according to an embodiment.

In operation 701, a store may transmit a delivery order to a server, and the server

may receive delivery orders. The delivery order may be transmitted to the server through an intermediary between the store and the server. The delivery order may include information on a store position that is a departure position and information on a delivery position that is an arrival position of the delivery order.

5 In operation 702, the server may identify information on a terminal position of a wireless terminal of a rider performing delivery according to the delivery orders and information on a service region of a branch to which the rider belongs and a supply region of the branch.

10 In operation 703, the server may determine i) a store position of each of the delivery orders and a delivery position of each of the delivery orders, ii) the service region and the supply region, and iii) the type of the delivery orders according to a relationship of the terminal position. Specifically, the server may determine the type of the delivery order for the wireless terminal of the rider to be one of a shared order, a service order, a long-distance order, and a return order, and provide it to the wireless terminal.

15 In operation 704, the server may provide the delivery order and the determined type of the delivery order to the wireless terminal, and the wireless terminal may receive the delivery order. In operation 705, the wireless terminal may display the type of the delivery orders, the store position thereof, and the delivery position thereof on a display of the wireless terminal.

20 However, the wireless terminal may not display a delivery order, of which the store position exceeds a certain distance from the terminal position, among the delivery orders on the display of the wireless terminal.

25 The method according to the present disclosure may be written in a computer-executable program and may be implemented as various recording media, such as magnetic storage media, optical reading media, or digital storage media.

30 Various techniques described herein may be implemented in digital electronic circuitry, computer hardware, firmware, software, or combinations thereof. The implementations may be achieved as a computer program product, i.e., a computer program tangibly embodied in an information carrier, e.g., in a machine-readable storage device (for example, a computer-readable medium) or in a propagated signal, for processing by, or to control an operation of, a data processing apparatus, e.g., a programmable processor, a computer, or multiple computers. A computer program,

such as the computer program(s) described above, may be written in any form of a programming language, including compiled or interpreted languages, and may be deployed in any form, including as a stand-alone program or as a module, a component, a subroutine, or other units suitable for use in a computing environment. A computer
5 program may be deployed to be processed on one computer or multiple computers at one site or distributed across multiple sites and interconnected by a communication network.

Processors suitable for processing of a computer program include, by way of example, both general and special purpose microprocessors, and any one or more processors of any type of digital computer. Generally, a processor will receive
10 instructions and data from a read-only memory or a random-access memory, or both. Elements of a computer may include at least one processor for executing instructions and one or more memory devices for storing instructions and data. Generally, a computer also may include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto-optical
15 disks, or optical disks. Examples of information carriers suitable for embodying computer program instructions and data include semiconductor memory devices, e.g., magnetic media such as hard disks, floppy disks, and magnetic tape, optical media such as compact disk read only memory (CD-ROM) or digital video disks (DVDs), magneto-optical media such as floptical disks, read-only memory (ROM), random-access memory
20 (RAM), flash memory, erasable programmable ROM (EPROM), or electrically erasable programmable ROM (EEPROM). The processor and the memory may be supplemented by or incorporated in special purpose logic circuitry.

In addition, non-transitory computer-readable media may be any available media that may be accessed by a computer and may include both computer storage media and
25 transmission media.

Although the present specification includes details of a plurality of specific embodiments, the details should not be construed as limiting any invention or a scope that can be claimed, but rather should be construed as being descriptions of features that may be peculiar to specific embodiments of specific inventions. Specific features described
30 in the present specification in the context of individual embodiments may be combined and implemented in a single embodiment. On the contrary, various features described in the context of a single embodiment may be implemented in a plurality of embodiments

individually or in any appropriate sub-combination. Furthermore, although features may operate in a specific combination and may be initially depicted as being claimed, one or more features of a claimed combination may be excluded from the combination in some cases, and the claimed combination may be changed into a sub-combination or a
5 modification of the sub-combination.

Likewise, although operations are depicted in a specific order in the drawings, it should not be understood that the operations must be performed in the depicted specific order or sequential order, or all the shown operations must be performed in order to obtain a preferred result. In specific cases, multitasking and parallel processing may be
10 advantageous. In addition, it should not be understood that the separation of various device components of the aforementioned embodiments is required for all the embodiments, and it should be understood that the aforementioned program components and apparatuses may be integrated into a single software product or packaged into multiple software products.

15 The embodiments disclosed in the present specification and the drawings are intended merely to present specific examples in order to aid in understanding of the present disclosure but are not intended to limit the scope of the present disclosure. It will be apparent to one of ordinary skill in the art that various modifications based on the technical spirit of the present disclosure, as well as the disclosed embodiments, can be
20 made.

CLAIMS

1. A method of providing a region-based delivery order performed by a server, the method comprising:

receiving delivery orders comprising information on a store position that is a
5 departure position of each of the delivery orders and information on a delivery position that is an arrival position of each of the delivery orders;

identifying information on a terminal position of a wireless terminal of a rider performing delivery according to the delivery orders and information on a service region of a branch to which the rider belongs and a supply region of the branch;

10 determining i) the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) the service region and the supply region, and iii) a type of the delivery orders according to a relationship of the terminal position; and providing the delivery orders and the determined type of the delivery orders to the wireless terminal.

15

2. The method of claim 1, wherein

the service region is a region determined based on a store position of stores requesting the delivery orders to the branch, and

the supply region is determined based on an operation range of the rider to
20 process delivery orders from the service region in the branch.

3. The method of claim 1, wherein, in the determining the type of the delivery orders,

when a store position of a delivery order belongs to the service region, the type
25 of the delivery order is determined to be a service order.

4. The method of claim 1, wherein, in the determining the type of the delivery orders,

when a store position of a delivery order belongs to the service region, and a
30 delivery position of the delivery order does not belong to the supply region, the type of the delivery order is determined to be a long-distance order.

5. The method of claim 1, wherein, in the determining the type of the delivery orders,

when a store position of a delivery order does not belong to the service region of the branch, and the store position of the delivery order and a delivery position of the delivery order belong to the supply region of the branch, the type of the delivery order is determined to be a shared order.

6. The method of claim 1, wherein, in the determining the type of the delivery orders,

when the terminal position does not belong to the supply region of the branch, a store position of a delivery order is within a certain distance from the terminal position, and a delivery position of the delivery order belongs to the supply region of the branch, the type of the delivery order is determined to be a return order.

7. The method of claim 3, wherein the providing the delivery orders and the determined type of the delivery orders comprises:

when the terminal position belongs to the supply region, providing the delivery orders of which the type of the delivery order is either a long-distance order or a shared order.

8. The method of claim 3, wherein the providing the delivery orders and the determined type of the delivery orders further comprises:

when the terminal position does not belong to the supply region, providing the delivery orders of which the type of the delivery order is either a service order or a return order.

9. A method of providing a region-based delivery order performed by a server, the method comprising:

receiving delivery orders comprising information on a store position that is a departure position of each of the delivery orders and information on a delivery position that is an arrival position of each of the delivery orders;

identifying information on terminal positions of each of wireless terminals of

riders performing delivery according to the delivery orders and information on a service region of branches to which each of the riders belongs and a supply region of the branches;

determining i) a store position of each of the delivery orders and a delivery position of each of the delivery orders, ii) the service region of the branches and the supply region of the branches, and iii) a type of a delivery order according to each of the wireless terminals based on a relationship of the terminal positions; and

providing the delivery order and the determined type of the delivery order according to each of the wireless terminals to the wireless terminals.

10 10. The method of claim 9, wherein
the service region is a region determined based on a store position of stores requesting the delivery orders to a branch, and
the supply region is determined based on an operation range of the rider to process delivery orders from the service region in the branch.

15 11. The method of claim 9, wherein the determining the type of the delivery order comprises:
when a store position of the delivery order belongs to a service region of a branch to which a specific rider among the riders belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a service order.

12. The method of claim 9, wherein the determining the type of the delivery order further comprises:
when a store position of the delivery order belongs to a service region of a branch to which a specific rider among the riders belongs, and a delivery position of the delivery order does not belong to a supply region of the branch to which the specific rider belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a long-distance order.

30 13. The method of claim 9, wherein the determining the type of the delivery order further comprises:
when a store position of the delivery order does not belong to a service region of

a branch to which a specific rider among the riders belongs, and the store position of the delivery order and the delivery position of the delivery order belong to a supply region of the branch to which the specific rider belongs, determining the type of the delivery order for a wireless terminal of the specific rider to be a shared order.

5

14. The method of claim 9, wherein the determining the type of the delivery order further comprises:

when a terminal position of a wireless terminal of a specific rider among the riders does not belong to a supply region of a branch to which the specific rider belongs, a store position of the delivery order is within a certain distance from the terminal position, and a delivery position of the delivery order belongs to the supply region of the branch to which the specific rider belongs, determining the type of the delivery order for the wireless terminal of the specific rider to be a return order.

15. The method of claim 11, wherein the providing the delivery order and the determined type of the delivery order comprises:

when a terminal position of a wireless terminal of a specific rider among the riders belongs to a supply region to which the specific rider belongs, providing a delivery order of which the type of the delivery order is determined for the wireless terminal of the specific rider to be one of a service order, a long-distance order, and a shared order to the wireless terminal of the specific rider.

16. The method of claim 11, wherein the providing the delivery order and the determined type of the delivery order further comprises:

when a terminal position of a wireless terminal of a specific rider among the riders does not belong to a supply region to which the specific rider belongs, providing a delivery order of which the type of the delivery order is determined for the wireless terminal of the specific rider to be either a service order or a return order to the wireless terminal of the specific rider.

30

17. A method of providing a region-based delivery order performed by a wireless terminal, the method comprising:

receiving delivery orders comprising information on a store position and a delivery position and a type of the delivery orders from a server; and

displaying a type of each of the delivery orders, a store position of each of the delivery orders, and a delivery position of each of the delivery orders on a display of the wireless terminal, wherein

the type of each of the delivery orders is determined based on i) information on the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) information on a service region of a branch to which a rider performing delivery through the wireless terminal belongs and a supply region of the branch, and iii) a relationship of a terminal position of the wireless terminal.

18. A server configured to perform a method of providing a region-based delivery order, the server comprising:

a processor, wherein the processor is configured to receive delivery orders comprising information on a store position and a delivery position, identify a service region of a branch to which a rider performing delivery according to the delivery orders and a supply region of the branch and information on a terminal position of a wireless terminal of the rider, determining i) information on a store position of each of the delivery orders and a delivery position of each of the delivery orders, ii) the service region of the branch and the supply region of the branch, and iii) a type of the delivery orders according to a relationship of the terminal position, and providing the delivery orders and the determined type of the delivery orders to the wireless terminal.

19. A server configured to perform a method of providing a region-based delivery order, the server comprising:

a processor, wherein the processor is configured to receive a delivery order comprising information on a store position and a delivery position, identify a service region of branches to which riders performing delivery according to the delivery order and a supply region of the branches and information on terminal positions of wireless terminals of the riders, determining i) information on the store position of the delivery order and the delivery position of the delivery order, ii) the

service region of the branches and the supply region of the branches, and iii) a type of a delivery order according to each of the wireless terminals based on a relationship of the terminal positions, and providing the delivery order and the determined type of the delivery order according to each of the wireless terminals to the wireless terminals.

5

20. A wireless terminal configured to perform a method of providing a region-based delivery order, the wireless terminal comprising:

a processor, wherein the processor is configured to

10 receive delivery orders comprising information on a store position and a delivery position from a server and display a type of each of the delivery orders, a store position of each of the delivery orders, and a delivery position of each of the delivery orders on a display of the wireless terminal, and

15 the type of each of the delivery orders is determined based on i) information on the store position of each of the delivery orders and the delivery position of each of the delivery orders, ii) information on a service region of a branch to which a rider belongs and a supply region of the branch, and iii) a relationship of a terminal position of the wireless terminal.