

Claims

1. A computerized system for delivery wave scheduling, comprising:
 - at least one processor; and
 - at least one non-transitory storage medium comprising instructions that, when executed by the at least one processor, cause the at least one processor to perform steps comprising:
 - receiving, from a remote system, order information comprising a plurality of products and associated identifiers;
 - determining a first fulfillment center and a first delivery wave, from a plurality of delivery waves, for a first product of the plurality of products, based on the associated identifier and the remote system;
 - storing the first delivery wave in association with the first product in a database;
 - determining a second fulfillment center and a second delivery wave, from the plurality of delivery waves, for a second product of the plurality of products, based on the associated identifier and the remote system, the second delivery wave being different from the first delivery wave;
 - storing the second delivery wave in association with the second product in the database;
 - determining that the first delivery wave is associated with an earlier time period than the second delivery wave, and responsive thereto:
 - modifying the database to associate the first product with the second delivery wave;
 - preventing a scan even from insertion into a database of completed events when the scan event occurs during a time period associated with the first delivery wave and not associated

with the second delivery wave, the scan event comprising an identifier of the first product, by:

receiving, from a mobile device, a scan event comprising an identifier of the first product;

intercepting a data packet including information indicating that the scan event occurred, wherein the data packet is sent to the database upon completion of the scan event; and

deleting the data packet.

2. The system of claim 1, wherein the first fulfillment center and the second fulfillment center are different.
3. The system of claim 2, wherein the order information comprises two customer orders, having the first product in a first customer order and the second product in a second customer order.
4. The system of claim 1, wherein the steps further comprise:
forwarding a second set of computer instructions to a printing device, the second set of computer instructions configured to cause the printing device to print a label listing the information associated with the second delivery wave.
5. The system of claim 1, wherein each delivery wave occurs during a period of time comprising a plurality of delivery waves, and the steps further comprising determining that the first delivery wave and the second delivery wave occur during the same period of time.

6. The system of claim 1, wherein determining the first and second fulfillment centers comprises:

determining a region associated with the remote system information; and

determining a fulfillment center from a set of fulfillment centers associated with the determined region.
7. The system of claim 1, wherein determining the first and second fulfillment centers comprises:

storing in a database a plurality of previous electronic requests and associated fulfillment centers;

dividing the previous electronic requests into a training dataset and a validation dataset, the training dataset having more requests than the validation dataset;

generating a predictive model based on the training data set associating request information and fulfillment centers;

validating the predictive model using the validation dataset; and

determining the first and second fulfillment centers by applying the predictive model to an electronic request.
8. The system of claim 1, wherein determining the first and second fulfillment centers comprises comparing a schedule of delivery waves of a product with the average travel time of the product through each fulfillment center in a plurality of fulfillment centers.
9. A computer implemented method for delivery wave scheduling, comprising:

receiving, from a remote system, order information comprising a plurality of products and associated identifiers;

determining a first fulfillment center and a first delivery wave, from a plurality of delivery waves, for a first product of the plurality of products, based on the associated identifier and the remote system;

storing the first delivery wave in association with the first product in a database;

determining a second fulfillment center and a second delivery wave, from the plurality of delivery waves, for a second product of the plurality of products, based on the associated identifier and the remote system, the second delivery wave being different from the first delivery wave;

storing the second delivery wave in association with the second product in the database;

determining that the first delivery wave is associated with an earlier time period than the second delivery wave, and responsive thereto:

 modifying the database to associate the first product with the second delivery wave;

 determining that a scan event occurs during a time period associated with the first delivery wave and not with the second delivery wave, the scan event comprising an identifier of the first product; and

 preventing the scan even from insertion into a database of completed events, by:

 receiving, from a mobile device, a scan event comprising an identifier of the first product;

 intercepting a data packet including information indicating that the scan event occurred, wherein the data packet is sent to the database upon completion of the scan event; and

 deleting the data packet.

10. The method of claim 9, wherein the first fulfillment center and the second fulfillment center are different.

11. The method of claim 10, wherein the order information comprises two customer orders, having the first product in a first customer order and the second product in a second customer order.
12. The method of claim 9, further comprises:
forwarding a second set of computer instructions to a printing device, the second set of computer instructions configured to cause the printing device to print a label listing the information associated with the second delivery wave.
13. The method of claim 9, wherein each delivery wave occurs during a period of time comprising a plurality of delivery waves, and the method further comprises determining that the first delivery wave and the second delivery wave occur during the same period of time.
14. The method of claim 9, further comprises:
determining a region associated with the remote system information; and
determining a fulfillment center from a set of fulfillment centers associated with the determined region.
15. The method of claim 9, wherein determining the first and second fulfillment centers comprises:
storing in a database a plurality of previous electronic requests and associated fulfillment centers;
dividing the previous electronic requests into a training dataset and a validation dataset, the training dataset having more requests than the validation dataset;

generating a predictive model based on the training data set associating request information and fulfillment centers;

validating the predictive model using the validation dataset; and

determining the first and second fulfillment center by applying the predictive model to an electronic request.

16. The method of claim 9, wherein determining the first and second fulfillment centers comprises comparing a schedule of delivery waves of a product with the average travel time of the product through each fulfillment center in the plurality of fulfillment centers.

17. A computerized system for delivery wave scheduling, comprising:
at least one processor; and
at least one non-transitory storage medium comprising instructions that, when executed by the at least one processor, cause the at least one processor to perform steps comprising:
receiving, from a remote system, order information comprising a plurality of products and associated identifiers;
determining a first fulfillment center and a first delivery wave, from a plurality of delivery waves, for a first product of the plurality of products, based on the associated identifier and the remote system, the first delivery wave being associated with a condition;
storing the first delivery wave in association with the first product in a database;
determining a second fulfillment center and a second delivery wave, from the plurality of delivery waves, for a second product of the plurality of products, based on the associated identifier and the remote system, the second delivery wave being associated with a different

time period than a time period associated with the first delivery wave;

storing the second delivery wave in association with the second product in the database;

determining that the time period associated with the first delivery wave and the time period associated with the second delivery wave occur during the same period of time, the period of time comprising a plurality of waves;

determining that the first delivery wave is associated with an earlier time period than the second delivery wave and that the second delivery wave was determined based on the second product not meeting the condition, and responsive thereto:

modifying the database to associate the second product with the first delivery wave;

preventing a scan even from insertion into a database of completed events when the scan event occurs during a time period associated with the first delivery wave and not associated with the second delivery wave, the scan event comprising an identifier of the first product, by:

receiving, from a mobile device, a scan event comprising an identifier of the first product;

intercepting a data packet including information indicating that the scan event occurred, wherein the data packet is sent to the database upon completion of the scan event; and

deleting the data packet.