

CLAIMS:

1. A computer-implemented system for managing inventory in a fulfillment center, the system comprising:
  - a memory storing instructions; and
  - at least one processor configured to execute the instructions to:
    - determine a quantity of an item available for picking;
    - generate a supplement request for the item based on a comparison of the quantity of the item available with a predefined quantity of the item; and
  - send, to at least one user-device for display, the supplement request to transport the item from a first zone to a second zone of the fulfillment center;
  - generate a dynamically adjusted order of urgency for the generated supplement request based on a delivery schedule for the item;
  - send, to the at least one user-device, an indication requesting to prioritize transportation of the item based on the dynamically adjusted order of urgency;
  - send, to the at least one user-device for display, a first indication requesting input of identification information;
  - receive, from the at least one user-device, a first input to verify the identification information;

send, to the at least one user-device for display, based on the identification information, an item identifier comprising at least one of a location information of the item in the first zone, a description of the item, or a supplemental quantity of the item to be transported to the second zone;

receive, from the at least one user-device, a second input representing the item identifier;

send, to the at least one user-device for display, a second indication requesting recording of the location information of the item, the description of the item, and the supplemental quantity of the item to be moved to the second zone; and

store the first input, the second input and the recorded information in a database associated with the computer-implemented system.

2. The system of claim 1, wherein the predefined quantity comprises a safety amount based on a popularity grade of the item, and wherein the popularity grade is based on a shelf-time of the item in a picking zone.
3. The system of claim 1, wherein the at least one processor is configured to access the recorded information in the database to generate the supplement request.

4. The system of claim 1, wherein the comparison comprises determining whether the quantity of the item available for picking is less than the predefined quantity of the item.
5. The system of claim 1, wherein the at least one processor is configured to further execute the instructions to generate the supplement request in response to determining that the quantity of the item available for picking is less than the predefined quantity of the item in a picking zone.
6. The system of claim 1, wherein the at least one processor is configured to further execute the instructions to:
  - receive a plurality of supplement requests from the system; and
  - arrange the received plurality of supplement requests in the dynamically adjusted order of urgency.
7. The system of claim 6, wherein the dynamically adjusted order of urgency is generated based further on a critical pull time for the item.
8. The system of claim 1, wherein the at least one processor is configured to further execute the instructions to send, to the at least one user-device, a third indication of a transportation means to transport the item from the first zone to the second zone, the third indication being based on the supplement request.

9. The system of claim 1, wherein the at least one processor is configured to further execute the instructions to receive, from the at least one user-device, information associated with an identifier scanned from the user-device.
10. A computer-implemented system for managing inventory in a fulfillment center, the system comprising:
- a memory storing instructions; and
  - at least one processor configured to execute the instructions to:
    - send, to at least one user-device for display, a work request to transport a replenishment quantity of an item from a first zone to a second zone of the fulfillment center;
    - generate a dynamically adjusted order of urgency for the work request based on a delivery schedule for the item;
    - send, to the at least one user-device for display, a fourth indication to prioritize transportation of the item based on the dynamically adjusted order of urgency;
    - send, to the at least one user-device for display, a first indication requesting recording of a location information of the item in the first zone, a description of the item, and the replenishment quantity of the item to be transported to the second zone;

receive, from the at least one user-device, a first input indicating whether a moving device configured to transport the replenishment quantity of the item is full;

send, to the at least one user-device for display, a second indication requesting shelving each of the replenishment quantity of the item in a storage space in the second zone based on the received first input;

send, to the at least one user-device for display, a third indication requesting recording of at least one of a location information of the storage space in the second zone, the replenishment quantity of the item shelved, and the description of the item shelved;

receive, from the at least one user-device, a second input to determine whether the each of the replenishment quantity of the item is shelved; and

store the first input, the second input, and recorded information in a database associated with the computer-implemented system.

11. The system of claim 10, wherein the at least one processor is configured to further execute the instructions to determine the replenishment quantity based on at least one of past daily sales and forecasted daily sales.

12. The system of claim 10, wherein the at least one processor is configured to further execute the instructions to:  
receive a plurality of work requests from the system; and  
arrange the received plurality of work requests in the dynamically adjusted order of urgency.
13. The system of claim 12, wherein the dynamically adjusted order of urgency is generated based further on a critical pull time for the item.
14. The system of claim 13, wherein the at least one processor is configured to send, to the at least one user-device for display, a fifth indication of the moving device to transport the item from the first zone to the second zone, based on the work request.
15. The system of claim 10, wherein at least one of the first indication, the second indication, the third indication, and the fourth indication comprises an audio-visual, a visual, or a haptic indication.
16. The system of claim 10, wherein each of the storage space in the second zone is identified by a unique location identifier.
17. The system of claim 10, wherein the at least one processor is configured to access the recorded information in the database to generate the work request.

18. A computer-implemented method for moving items between physical zones in a fulfillment center, the method comprising:

determining, using a computer-implemented system, a quantity of the item available for picking;

generating, using the computer-implemented system, a supplement request for the item based on a comparison of the available quantity with a predefined quantity of the item;

sending, to at least one user-device for display, the supplement request to transport the item from a first zone to a second zone of the fulfillment center;

generating a dynamically adjusted order of urgency for the generated supplement request based on a delivery schedule for the item;

sending, to the at least one user-device, an indication requesting to prioritize transportation of the item based on the dynamically adjusted order of urgency;

sending, to the at least one user-device for display, a first indication requesting input of identification information;

receiving, from the at least one user-device, a first input to verify the identification information;

sending, to the at least one user-device for display, based on the identification information, an item identifier comprising at least one of a location information of the item in the first zone, a description of

the item, or a supplemental quantity of the item to be transported to the second zone;

receiving, from the at least one user-device, a second input representing the item identifier;

sending, to the at least one user-device for display, a second indication requesting recording the location information of the item, the description of the item, and the supplemental quantity of the item to be moved to the second zone;

sending, to the at least one user-device for display, a work request to transport a replenishment quantity of an item from the second zone to a third zone of the fulfillment center;

sending, to the at least one user-device for display, a third indication requesting recording of a location information of the item in the second zone, a description of the item, and the replenishment quantity of the item to be transported to the third zone;

receiving, from the at least one user-device, a third input indicating whether a moving device configured to transport the replenishment quantity of the item is full;

sending, to the at least one user-device for display, a fourth indication requesting shelving of each of the replenishment quantity of the item in a storage space in the third zone based on the received third input;

sending, to the at least one user-device for display, a fifth indication  
requesting recording at least one of a location information of the  
storage space in the second zone, the replenishment quantity of  
the item shelved, and the description of the item shelved;  
receiving, from the at least one user-device, a fourth input to determine  
whether each of the replenishment quantity of the item is shelved;  
and  
storing each of the first input, the second input, the third input, the fourth  
input, and recorded information in a database associated with the  
computer-implemented system.