CLAIMS

1. A server for facilitating processing an order for an on-demand service, the server comprising:

a memory configured to store instructions; and

a processor for executing the stored instructions and configured to:

segment multiple historical orders into a plurality of segmentation groups based on a first set of one or more predetermined order criteria;

for each segmentation group including a plurality of historical orders:

obtain information about the plurality of historical orders of the segmentation group,

compute a plurality of ideal pick-up buffer times, each corresponding to a respective historical order of the plurality of historical orders of the segmentation group,

compute an average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group, and

determine a new pick-up buffer time for the segmentation group based on the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group; and

use the new pick-up buffer time for the segmentation group in delaying allocating a new order relating to the segmentation group to a new delivery service provider for a predetermined time,

wherein, for each historical order of the plurality of historical orders of the segmentation group, information about the historical order includes information about expected time and information about actual time relating to a completion of the historical order; and the processor is configured to compute the ideal pick-up buffer time corresponding to the historical order

based on the information about the expected time and the information about the actual time relating to the completion of the historical order.

2. The server according to claim 1, wherein the processor is configured to determine the new pick-up buffer time for the segmentation group further based on a sign value of the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group and a standard deviation of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group.

3. The server according to claim 2, wherein the processor is configured to determine the new pick-up buffer time for the segmentation group further based on a lambda value to control a variability of the new pick-up buffer time for the segmentation group.

4. The server according to claim 3, wherein the processor is configured to determine the new pick-up buffer time for the segmentation group by multiplying the sign value of the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group, the lambda value, and the standard deviation of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group, and adding the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group.

5. The server according to any one of claims 1 to 4, wherein the information about the expected time relating to the completion of the historical order includes an expected item preparation time, an estimated time of arrival, and an expected allocation buffer time; and

the information about the actual time relating to the completion of the historical order includes an actual item preparation time, an actual time of arrival, and an actual allocation buffer time.

6. The server according to claim 5, wherein the processor is configured to compute the ideal pick-up buffer time for the historical order, based on a first value obtained by subtracting the actual item preparation time from the expected item preparation time, a second value obtained by subtracting the actual time of arrival from the estimated time of arrival, and a third value obtained by subtracting the actual allocation buffer time from the expected allocation buffer time.

7. The server according to claim 6, wherein the processor is configured to compute the ideal pick-up buffer time for the historical order, by subtracting the first value and the second value from the third value.

8. The server according to any one of claims 1 to 7, wherein, for each segmentation group, the processor is configured to determine whether a number of the plurality of historical orders of the segmentation group is equal to or greater than a threshold.

9. The server according to claim 8, wherein the processor is configured to:

if it is determined that the number of the plurality of historical orders of the segmentation group is equal to or greater than the threshold, use the plurality of historical orders of the segmentation group to determine the new pick-up buffer time; and

if it is determined that the number of the plurality of historical orders of the segmentation group is less than the threshold, combine the segmentation group with one or

more other segmentation groups of the plurality of segmentation groups based on a second set of one or more predetermined order criteria, to obtain a new plurality of historical orders to determine the new pick-up buffer time,

wherein the second set of one or more predetermined order criteria includes fewer criteria than the first set of one or more predetermined order criteria.

10. The server according to claim 9, wherein the first set of one or more predetermined order criteria includes a certain geohash area, a certain item provider, and a certain time slot, and the second set of one or more predetermined order criteria includes the certain geohash area and the certain item provider.

11. A method for facilitating processing an order for an on-demand service, the method comprising:

segmenting multiple historical orders into a plurality of segmentation groups based on a first set of one or more predetermined order criteria;

for each segmentation group including a plurality of historical orders:

obtaining information about the plurality of historical orders of the segmentation group,

computing a plurality of ideal pick-up buffer times, each corresponding to a respective historical order of the plurality of historical orders of the segmentation group,

computing an average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group, and

determining a new pick-up buffer time for the segmentation group based on the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group; and

using the new pick-up buffer time for the segmentation group in delaying allocating a new order relating to the segmentation group to a new delivery service provider for a predetermined time,

wherein, for each historical order of the plurality of historical orders of the segmentation group, information about the historical order includes information about expected time and information about actual time relating to a completion of the historical order; and the method further comprises computing the ideal pick-up buffer time corresponding to the historical order based on the information about the expected time and the information about the actual time relating to the completion of the historical order.

12. The method according to claim 11, wherein the new pick-up buffer time for the segmentation group is determined further based on a sign value of the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group and a standard deviation of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group.

13. The method according to claim 12, wherein the new pick-up buffer time for the segmentation group is determined further based on a lambda value to control a variability of the new pick-up buffer time for the segmentation group.

14. The method according to claim 13, wherein determining the new pick-up buffer time for the segmentation group comprises multiplying the sign value of the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group, the lambda value, and the standard deviation of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group,

and adding the average value of the plurality of ideal pick-up buffer times corresponding to the plurality of historical orders of the segmentation group.

15. The method according to any one of claims 11 to 14, wherein the information about the expected time relating to the completion of the historical order includes an expected item preparation time, an estimated time of arrival, and an expected allocation buffer time; and

the information about the actual time relating to the completion of the historical order includes an actual item preparation time, an actual time of arrival, and an actual allocation buffer time.

16. The method according to claim 15, further comprising computing the ideal pick-up buffer time for the historical order, based on a first value obtained by subtracting the actual item preparation time from the expected item preparation time, a second value obtained by subtracting the actual time of arrival from the estimated time of arrival, and a third value obtained by subtracting the actual allocation buffer time from the expected allocation buffer time.

17. The method according to claim 16, further comprising computing the ideal pick-up buffer time for the historical order, by subtracting the first value and the second value from the third value.

18. The method according to any one of claims 11 to 17, further comprising, for each segmentation group, determining whether a number of the plurality of historical orders of the segmentation group is equal to or greater than a threshold.

19. The method according to claim 18, further comprising:

if it is determined that the number of the plurality of historical orders of the segmentation group is equal to or greater than the threshold, using the plurality of historical orders of the segmentation group to determine the new pick-up buffer time; and

if it is determined that the number of the plurality of historical orders of the segmentation group is less than the threshold, combining the segmentation group with one or more other segmentation groups of the plurality of segmentation groups based on a second set of one or more predetermined order criteria, to obtain a new plurality of historical orders to determine the new pick-up buffer time,

wherein the second set of one or more predetermined order criteria includes fewer criteria than the first set of one or more predetermined order criteria.

20. The method according to claim 19, wherein the first set of one or more predetermined order criteria includes a certain geohash area, a certain item provider, and a certain time slot, and the second set of one or more predetermined order criteria includes the certain geohash area and the certain item provider.