IPB FINAL PROJECT

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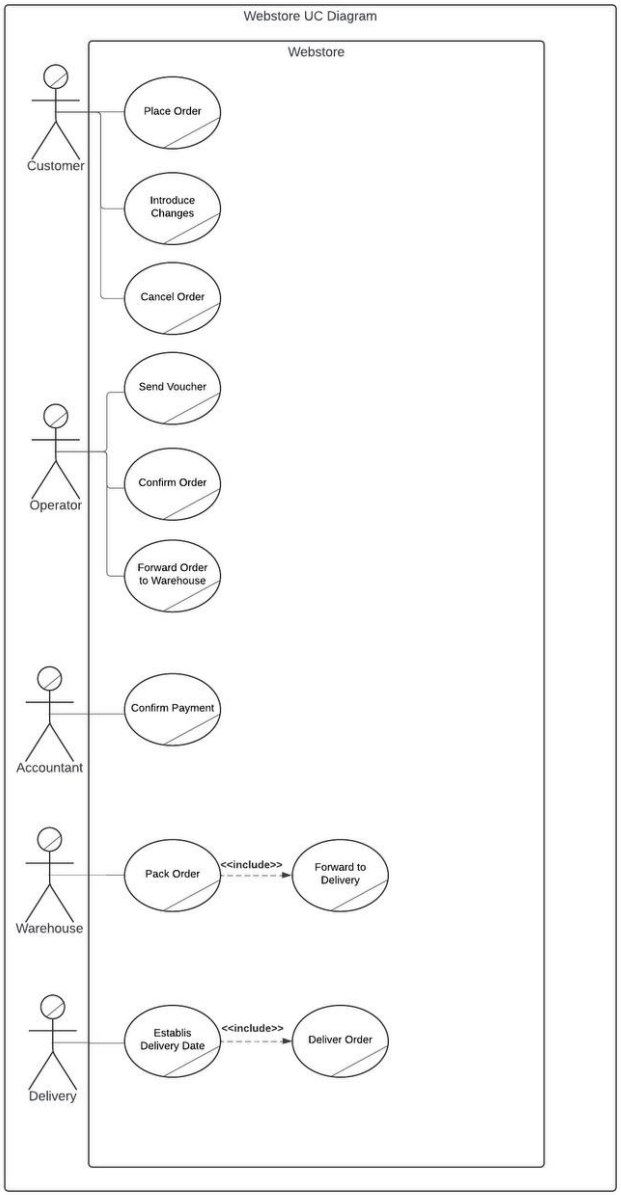
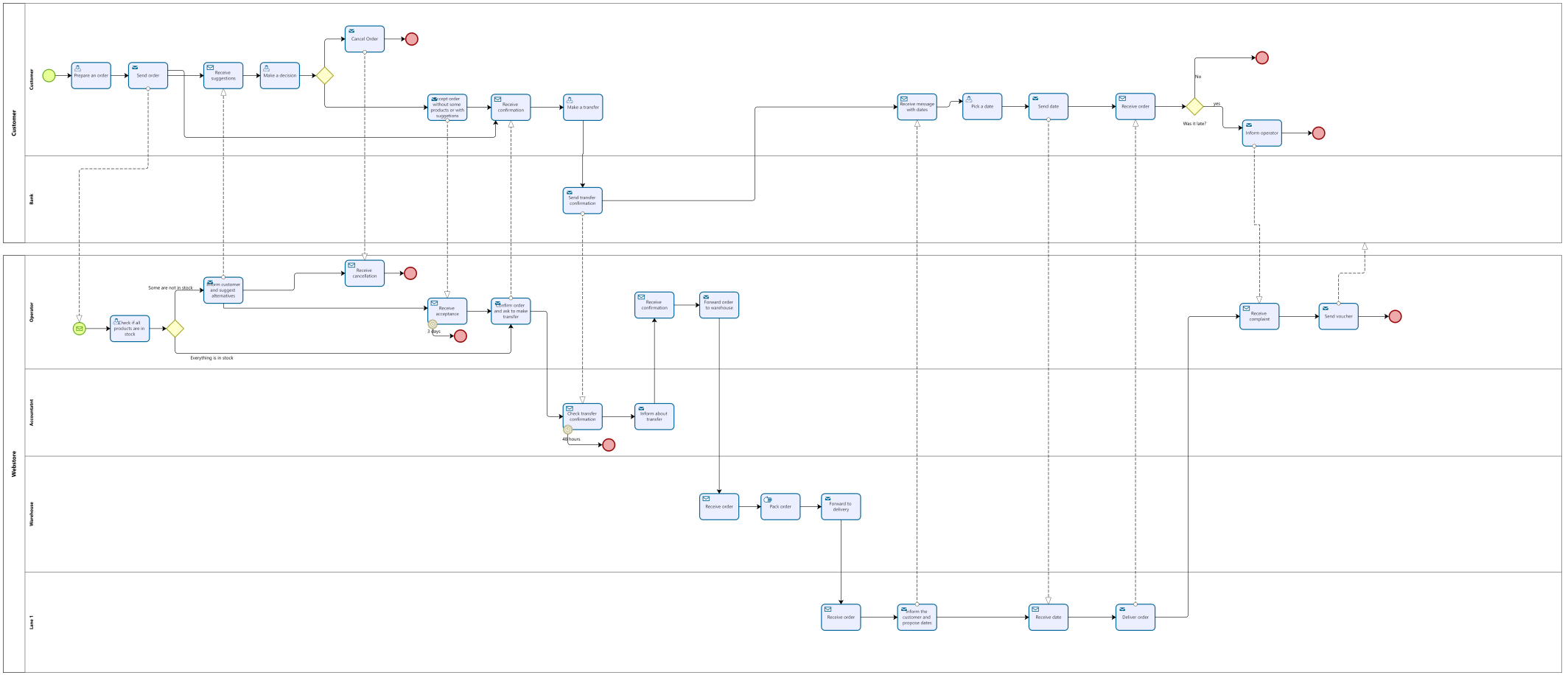
Description

Process begins when customer places an order.
Currently online store is too small and have only one employee (main worker).
An operator verifies if required products are in stock (later done by system) and can be delivered to the specified address (later replaced by a system).
If some products are missing, the operator sends a message informing the customer about missing products with alternatives that can substitute them.
The customer decides whether he/she wants to introduce changes. Then sends a confirmation message with or without changes.
The customer can cancel the order at this point, which would kill the process.
The operator waits for a response for 3 days. If that time exceeds, the process ends.
After receiving a positive response, the operator informs the customer that the order has been placed.
Now the customer has to make money transfer in 48 hours.
A web store accountant checks if the payment came through (later done by system). If not the process ends.
If payment came through, the accountant informs the operator about that. Then the operator forwards the order to the warehouse (later done by the system). The warehouse packs the order and forwards it to delivery.
The delivery informs the customer about receiving an order, at the same time asking him/her to specify the delivery date in a specified range. Then they deliver the order.
If the order comes in time, the customer receives it and process ends. If order comes late, the customer may inform the operator, and then the operator sends a 25% discount voucher to the customer and process ends.

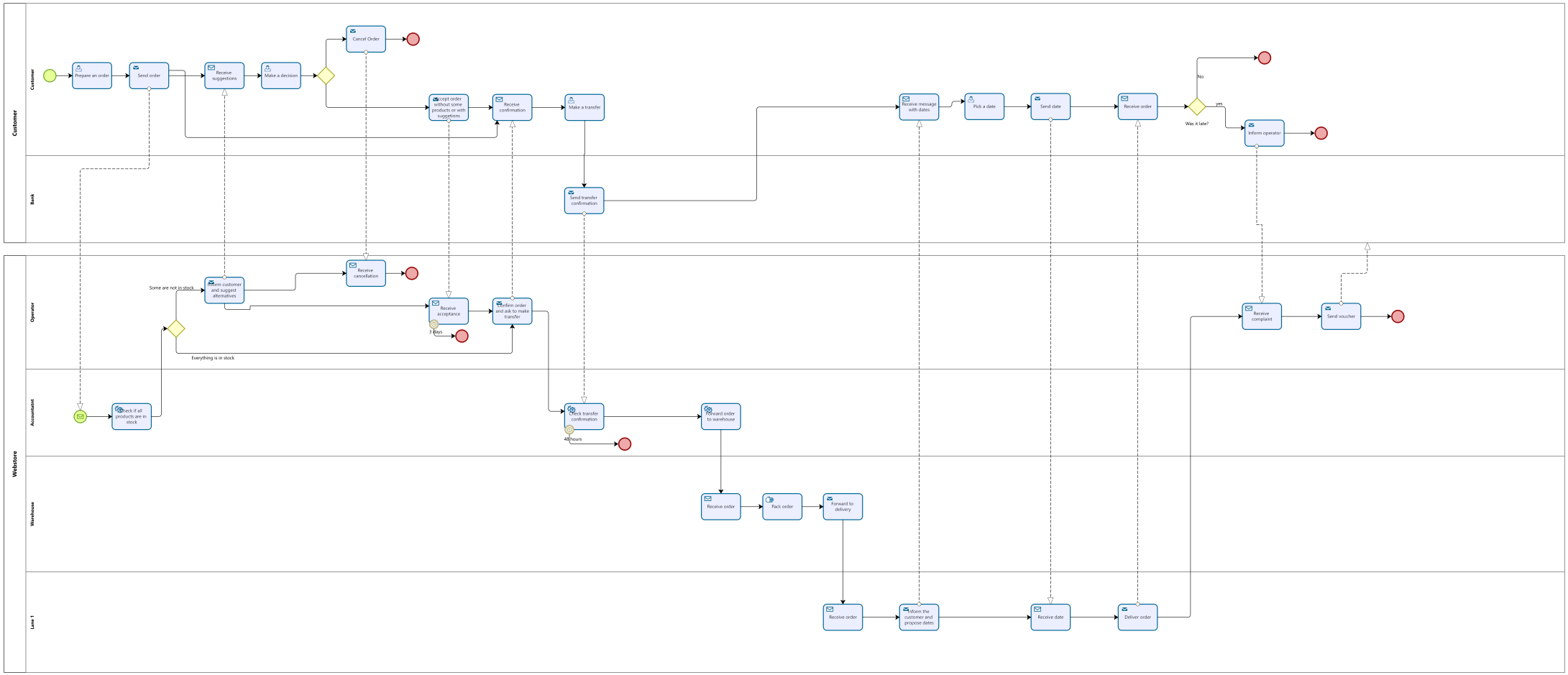
Business use-case diagram for current process



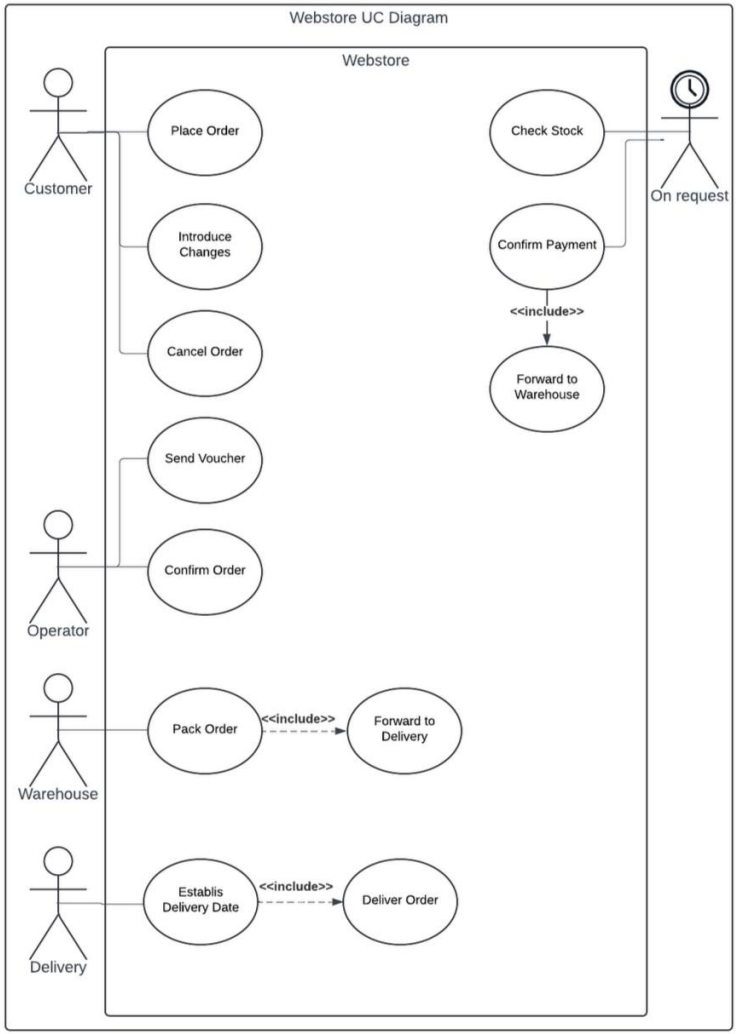
BPMN (current process)



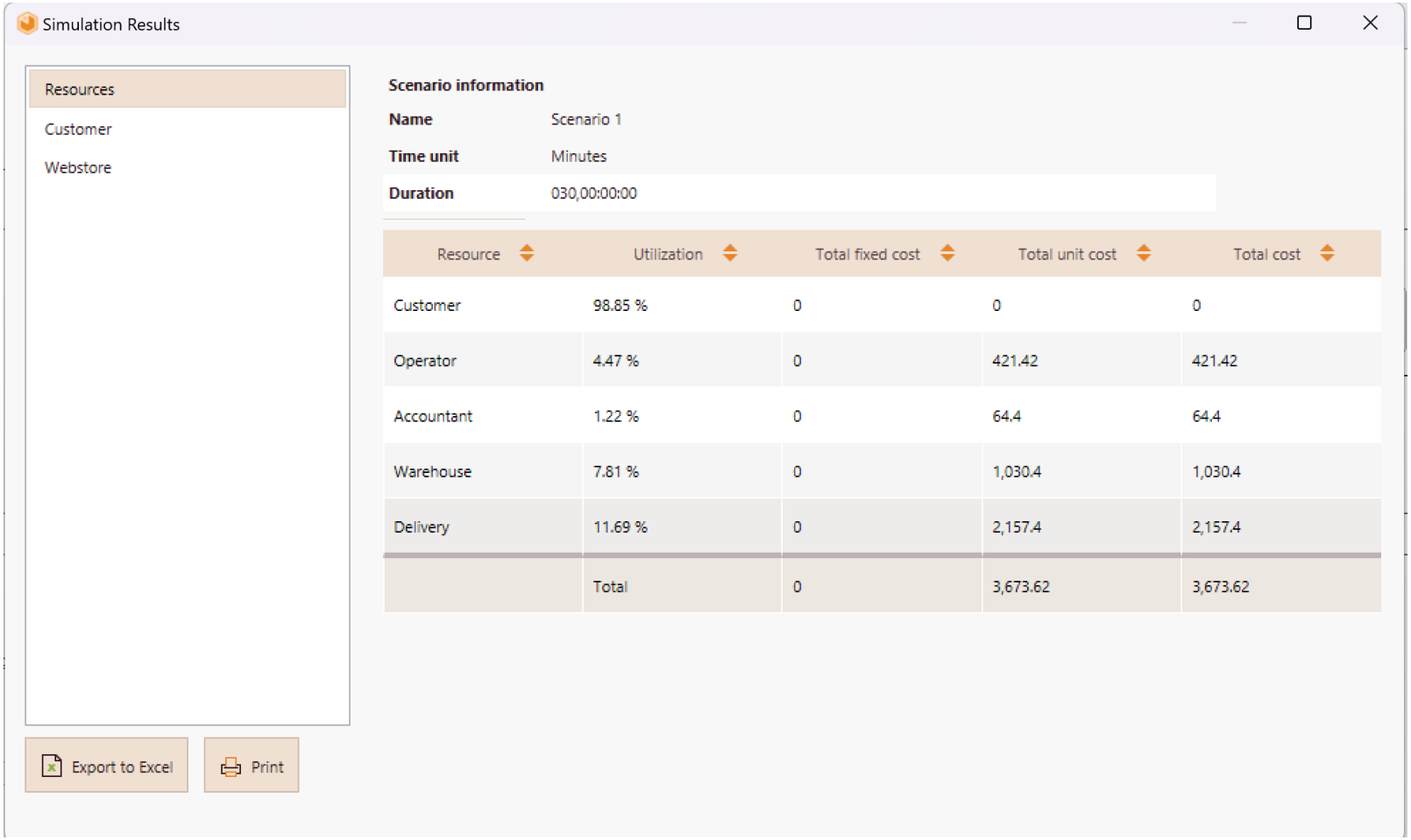
BPMN (new improved process)



Use Case diagram (new improved process)



Before


Simulation Results
Resources
Customer
Webstore
Scenario information
Name
Scenario 1
Time unit
Minutes
Duration
030,00:00:00
Resource
Utilization
Total fixed cost
Total unit cost
Total cost
Customer
98.85 %
0
0
0
Operator
4.47 %
0
421.42
421.42
Accountant
1.22 %
0
64.4
64.4
Warehouse
7.81 %
0
1,030.4
1,030.4
Delivery
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2,157.4
2,157.4
Total
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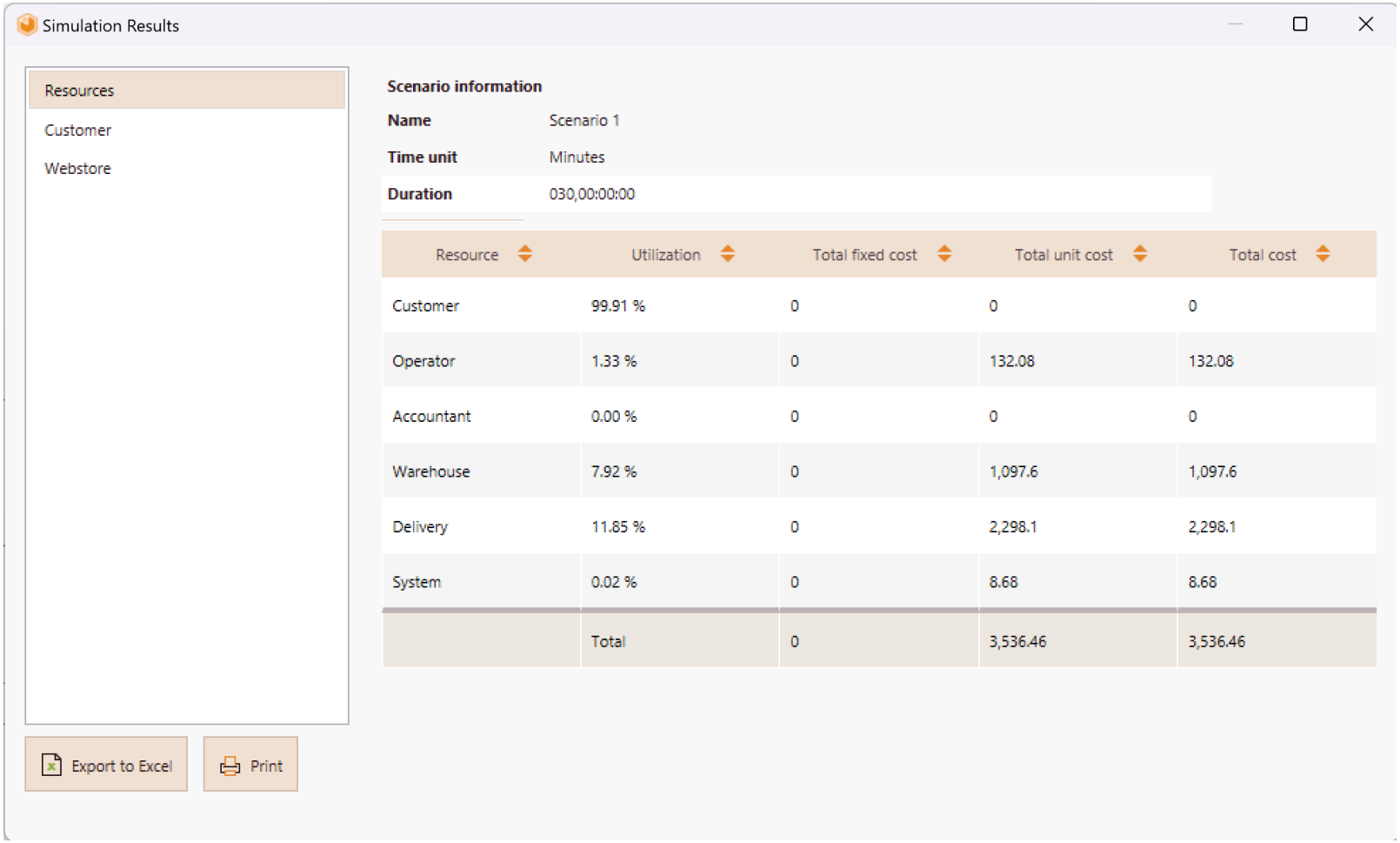
3,673.62
3,673.62
Export to Excel
Print

After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0
0
0
Operator
1.33 %
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132.08
132.08
Accountant
0.00 %
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0
Warehouse
7.92 %
0
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1,097.6
Delivery
11.85 %
0
2,298.1
2,298.1
System
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8.68
Total
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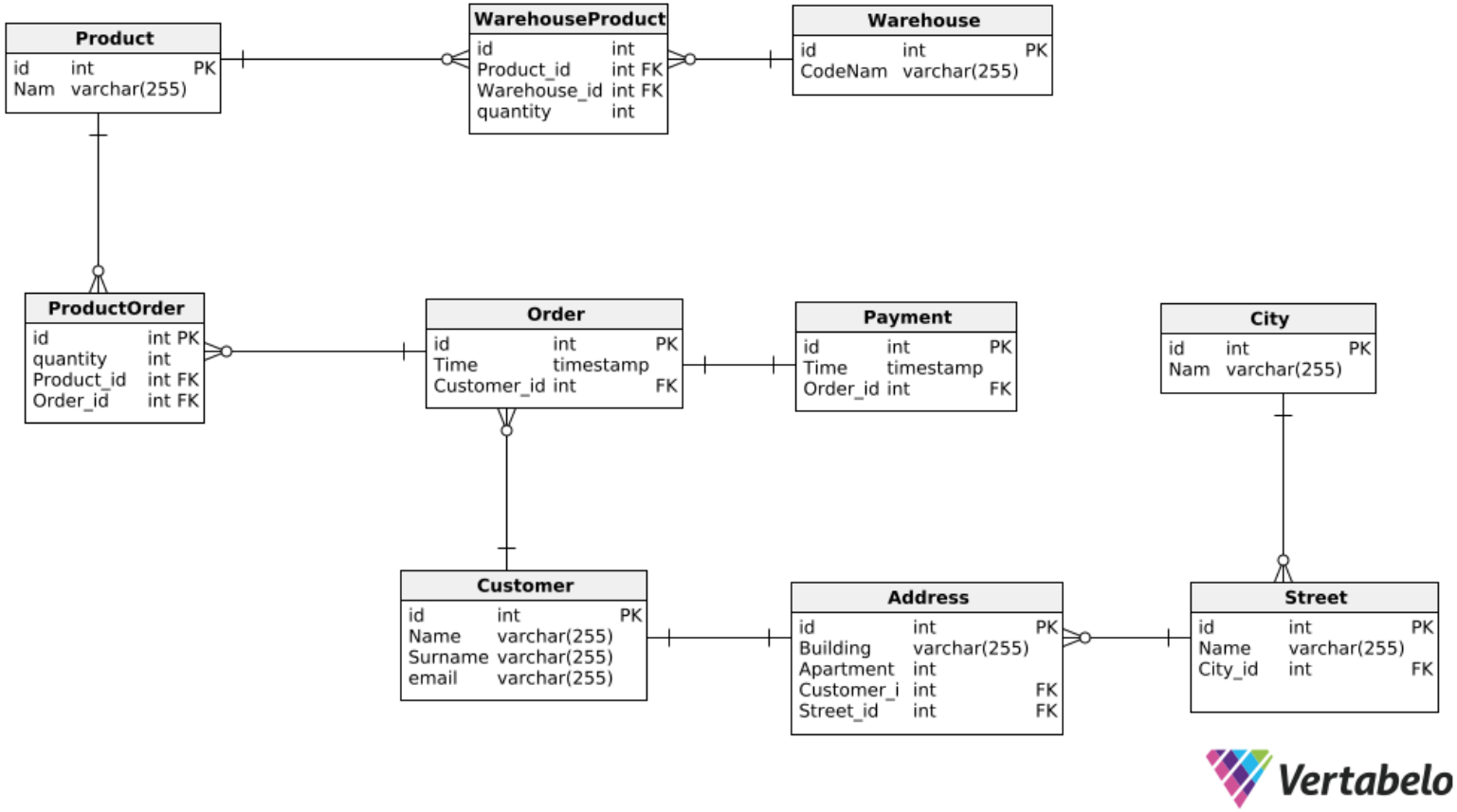
3,536.46
Export to Excel
Print

Process modelling in Vertabelo



Summary

Based on the simulation results, we can see that we have significantly improved the efficiency of the online store's order processing through automation.

The previous process relied heavily on manual tasks, with the operator handling inventory checks, order forwarding, and payment verification. This resulted in high operator utilization. Customer (98.85%) and Delivery (with a unit cost of 2,157.4) were likely the most significant cost factors. Accountant utilization was low (1.22%) suggesting potential for automation. The total cost for all resources was 3,673.62 during the simulation period.

The improved process incorporates a system to automate tasks previously done by the operator, leading to a significant reduction in operator utilization (down to 1.33%). System resource usage is minimal (0.02%) suggesting it can handle the increased workload efficiently. Significant reduction in manual work suggests improved process efficiency. The total cost for all resources was 3,536.46 during the all improved simulation period.