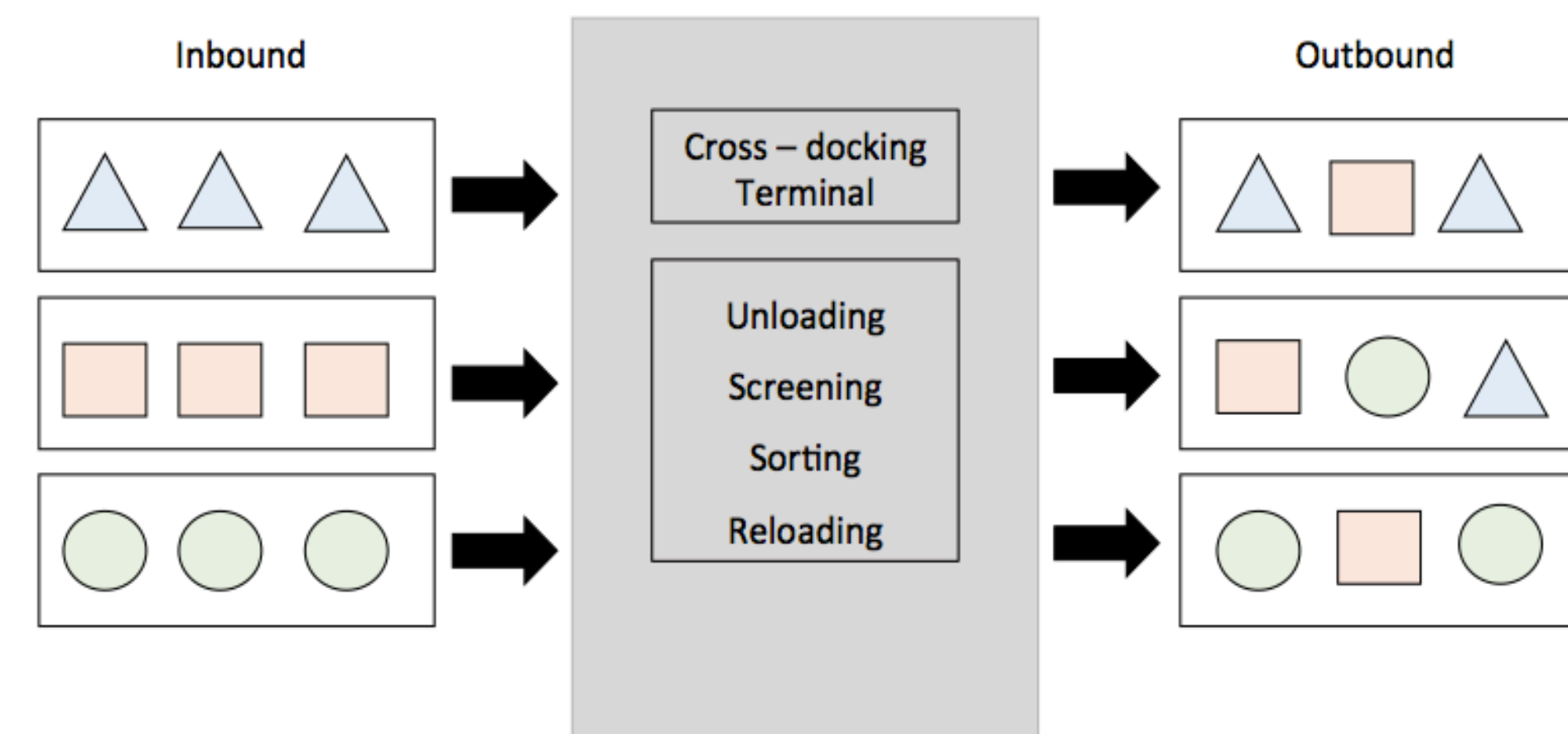


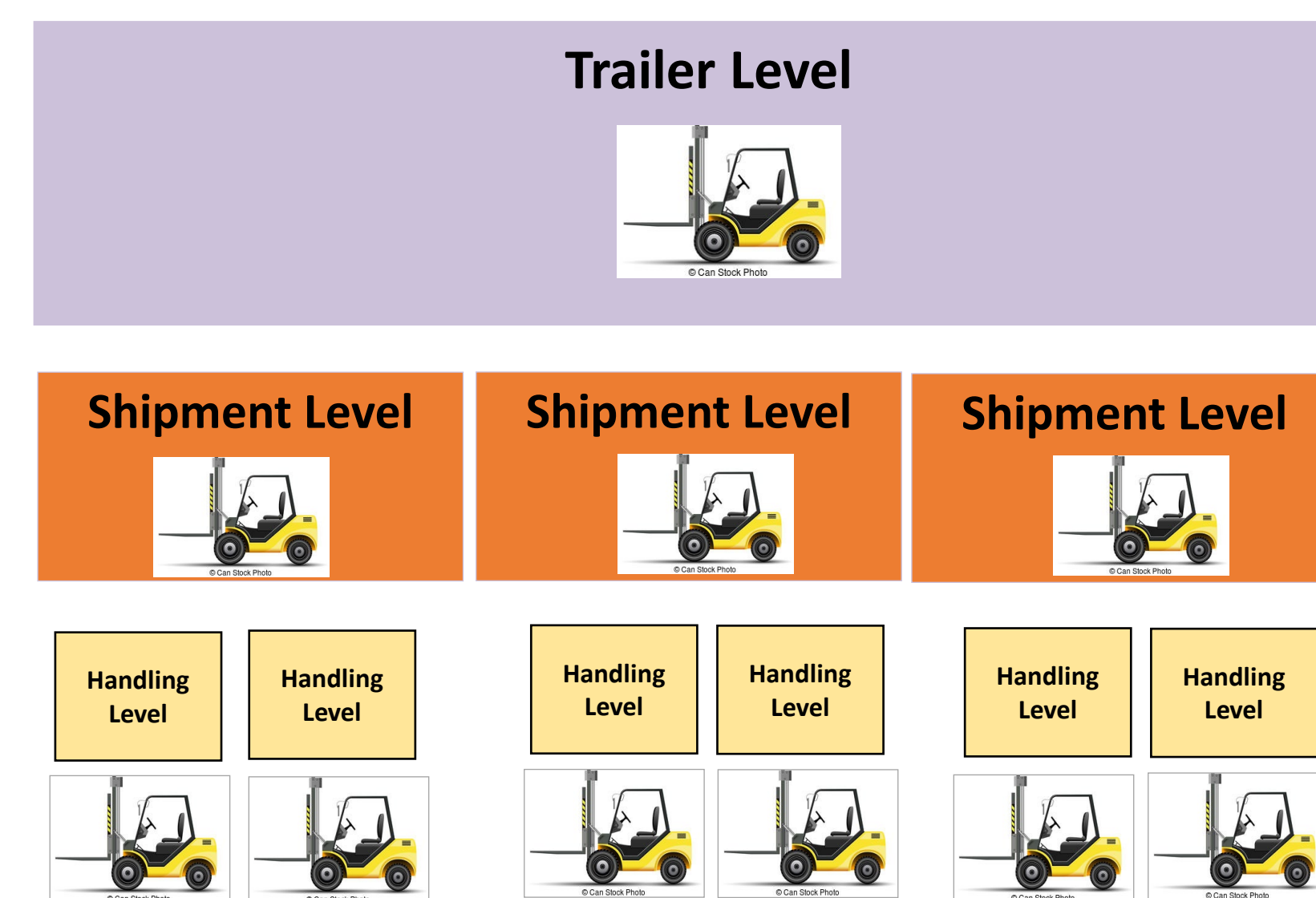
Maximizing FedEx Freight's Dock Performance Through Efficient Work Assignment Methods

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System Definition:



- Cross docking is a common practice at FedEx Freight's hub and spoke terminals



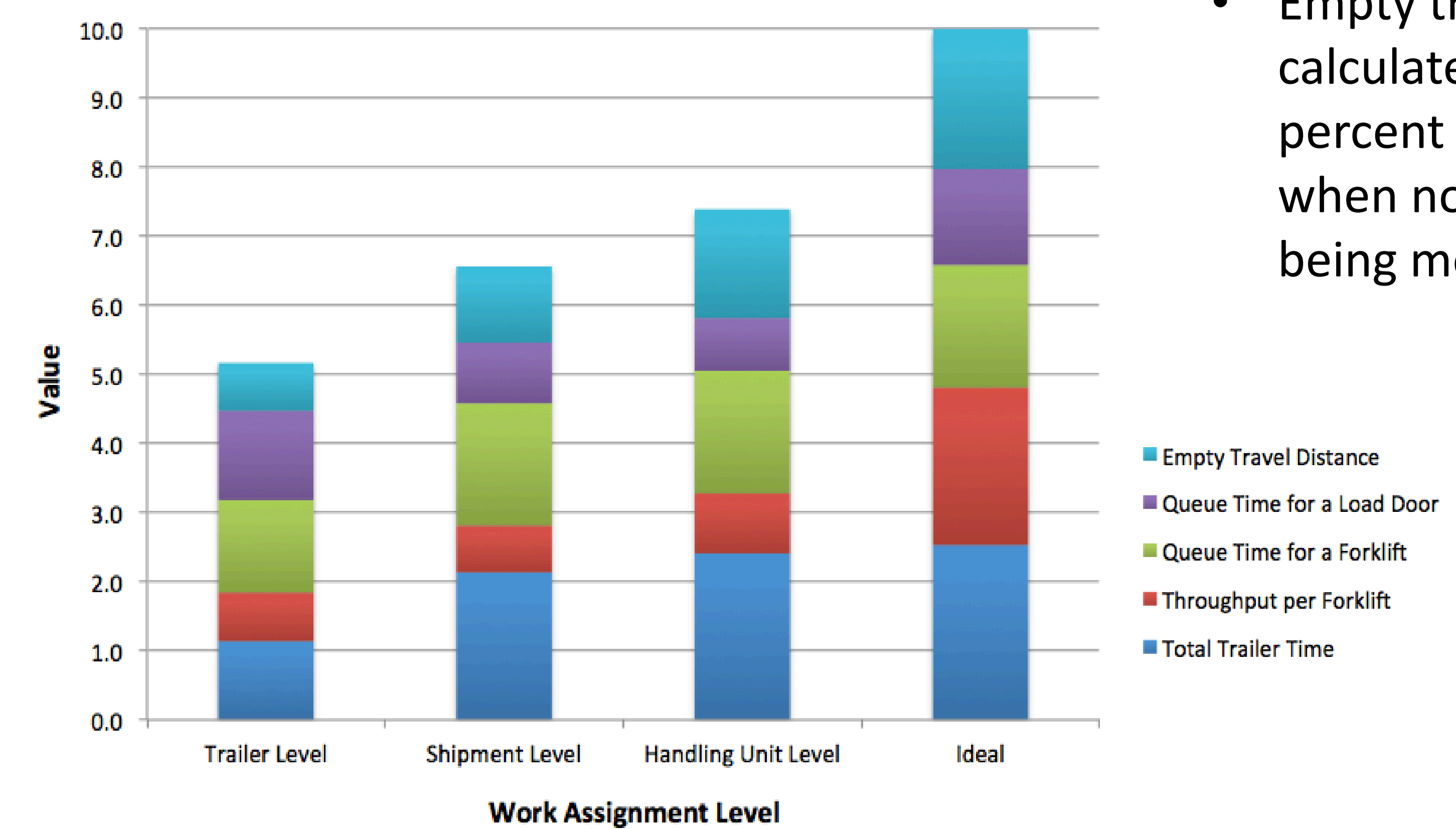
- A trailer can be broken down into 3 different work assignment levels
- Each level changes the way a dock worker unloads the trailer

Results:

Ideal Alternative:
 40 minutes
 70 Handling Units
 0 minutes
 0 minutes

Performance Measure	Trailer	Shipment	Handling Unit
Total trailer time in the system	81.22 minutes/trailer	51.81 minutes/trailer	43.54 minutes/trailer
Average throughput per forklift	40 handling units/shift	40 handling units/shift	44 handling units/shift
Average queue time for a load door	3.59 minutes	18.47 minutes	22.58 minutes
Average queue time for a forklift	1.43 minutes	0 minutes	0 minutes

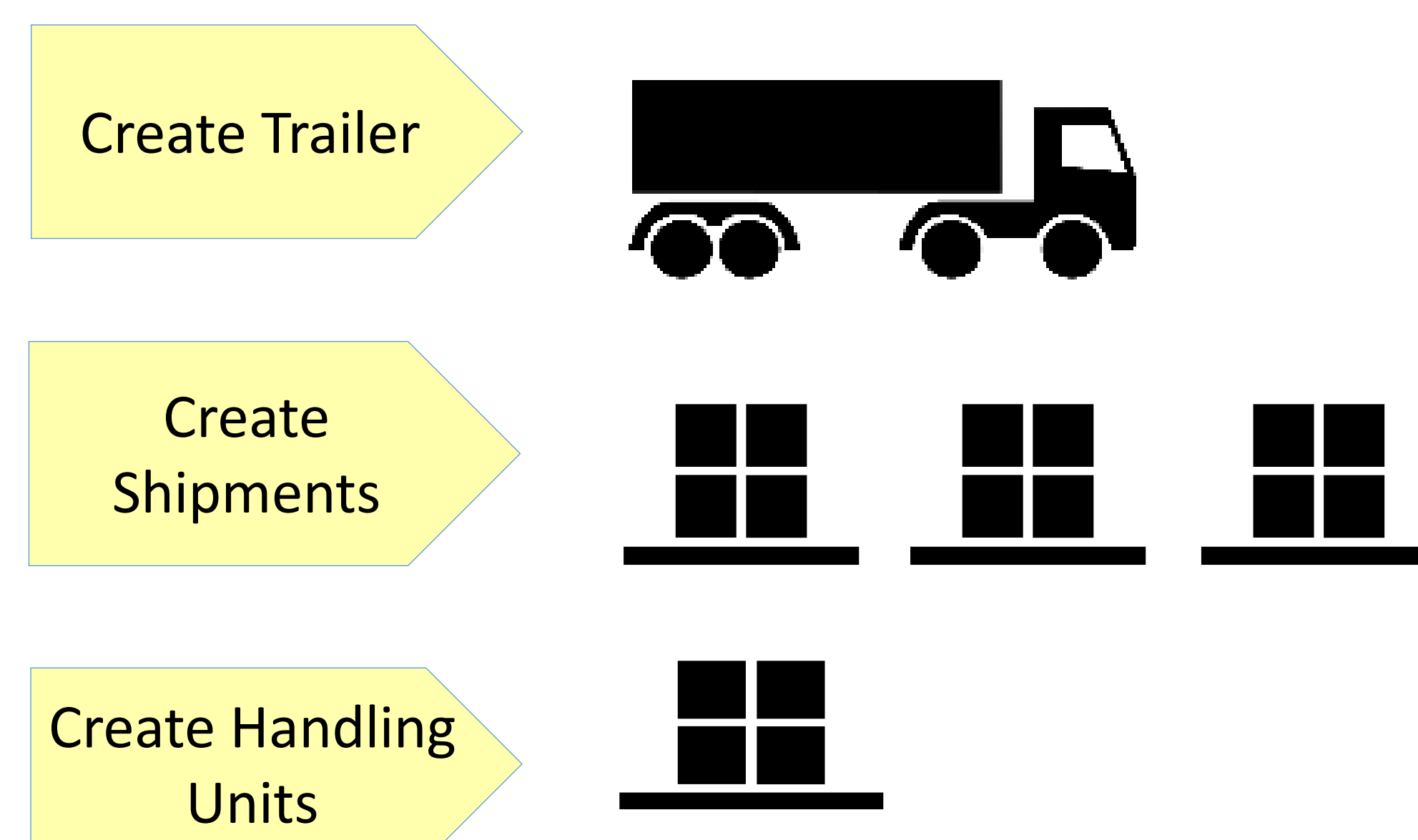
Value Component Chart



- Empty travel distance was calculated by finding the percent of distance traveled when no handling unit were being moved

Computer Modeling:

- Simulation models real life processes over time and allows the user to change constraints to evaluate alternatives.
- A simulation was created for the three alternatives and evaluated them on each of our 4 performance measures.
- Results were compiled and used to evaluate which work assignment method was most efficient.

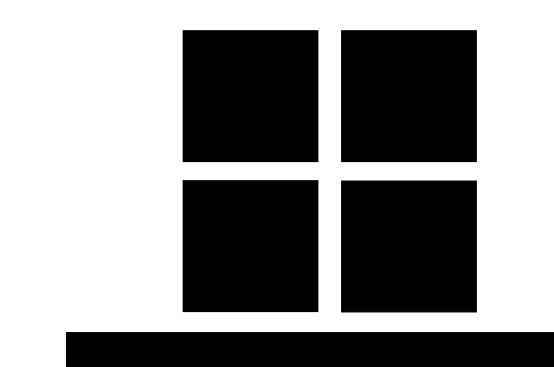


Performance Measures

- Total Trailer Time
- Average Throughput per Forklift
- Average Queue Time per Load Door
- Average Queue Time per Forklift

Recommendation:

Assign dockworkers at a Handling Unit-At-A-Time Level



Future Analysis:

- Lower handling level could increase congestion on the dock.



- Risk of misplacing a handling unit could increase because additional hands are touching each shipment

