

AMAZON – PROBLEM SOLVE

OUTBOUND PROBLEM SOLVE ELIMINATION

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Amazon is the largest online-based retailer in the United States. To manage inventory owned by both Amazon and sellers in Fulfillment by Amazon (FBA), the company operates 80+ Fulfillment Centers (FCs) across North America. As Amazon continues its steep trajectory of year-on-year growth, its fulfillment network also continues to expand at an exponential rate. Amazon plans to open over 10 new FCs in the last two quarters of 2017 alone; with such rapid expansion, the need for robust processes against defects in customer order fulfillment has become more important than ever.

Currently, between 1–2% of all outbound shipments experience an issue that requires intervention by problem-solve associates for their successful fulfillment. However, due to the complexity of the problem- solve process, these interventions result in reduced throughput and increased variable cost per unit (VCPU). Therefore, the Tauber team was tasked with improving the current problem-solve process and reducing the number of issues occurring in the outbound process. The use case site was selected to be BFI4, which is an Amazon Robotics (AR) Sortable FC located in Kent, WA with a footprint of 900,000+ square feet and more than 18 million units of inventory.

The team identified the Pack function as the process path where the majority of problem solve labor hours are spent, and missing item shipments as the most prevalent issue in the outbound process, based on Pareto analyses. Diving deeper into the missing item shipments occurring in Pack, the team laid out each resolution path followed under each case by using process maps to decode the complexity of problem solving and identify non-value added activities. Two metrics were developed on which to base process improvements moving forward: number of re-picks for fixing shipments and number of missing item shipments. The team identified the key factors influencing these metrics by running two pilots, and developed a future state based on the insights gained from those pilots.

The team redesigned the outbound process to be robust to incoming defects by utilizing the usual workflows of direct functions, as well as the current physical layout and conveyor systems of FCs. In this future state, software buildouts will be employed to automate decision making and guide associates accordingly, thereby enabling problem solving to silently occur on the pack wall. As a result, the project will eliminate problem solve as a separate function, and reduce VCPU by 50% and issues arising in Pack by 30%. These benefits were validated by testing the concept in action in a final experiment. Hence, the successful implementation of this project across the North America AR Sortable network is projected to yield savings of over \$200M. To secure the future of the project, the team led discussions with Amazon Fulfillment Technologies (AFT) and Subject Matter Expert (SME) teams to obtain funding and hand off the project to Amazon Customer Excellence System (ACES) Ops Integration team.