

## **ABSTRACT**

PT. XYZ is the paint and chemical manufacturing company that produce a variety of paint and chemical products Top Coat type such as wall paint, roof paint, synthetic paint, water repellent, boat finish. Primer and Sealer type such as alkali resisting primer, base coat, and sealer. Putty type such as wall filler and wood filler and the last type is Construction Chemical such as waterproofing, epoxy, bonding agent, water ponding, grout, PVC glue. PT. XYZ has a central warehouse that useful for storing the finished goods from the production floor, central warehouse divided into three sub-warehouses and designed with floor stack design. Based on the historical data, Around 62066 SKU's were not found in the warehouse from the data order picking activity. In addition, manual searching activity is the waste that occurs in the warehouse and it can cause delay time. This research is conducted to minimize delay time, especially for searching activity.

Big Picture Mapping using Value Stream Mapping and Detail Mapping were used to get the process time and the value of each activity. Moreover, the proposed future of product storage policy was used class-based storage policy using FSN Analysis, then the zoning and slotting were determined for storing product in put away activity. Furthermore, the routing method for picking activity is simulated under Genetic Algorithm. The results of the research, future condition show decrease the processing time from 3465, 35 seconds to 2767, 37 seconds. In addition, the value added time is increase 22%.

Keywords : Paint and Chemical Manufacturing, Warehouse, Storage Allocation, FSN Analysis, Routing Method, Genetic Algorithm