FUJITSU

Hatmill

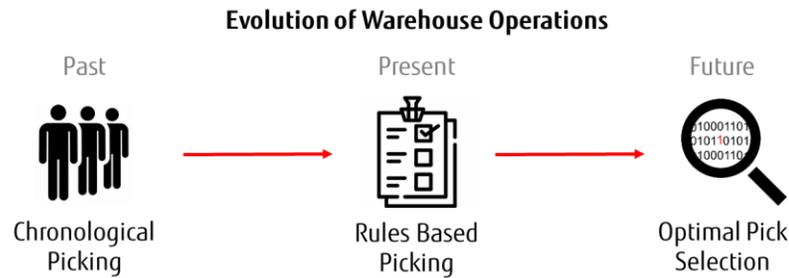# Warehouse Operations
Quantum Inspired Optimization

Continually optimise the release of orders from the order well considering all possible permutations using all your live data to reduce pick walk time

Challenges
- Increasing customer demand, doubling in last 12 months
- Reduce cost to serve
- Increased cost and limited availability of labour & warehousing

Solution
Continually optimise the release of orders from the order well considering all possible permutations using all your live data to reduce pick walk time. Quantum inspired performance enables rapid calculation on the fly to provide enhanced order clustering, which would previously only periodically (if at all) be optimised. Today conventional computing significantly limits operational efficiency, no matter how clever rules based algorithms are.

Evolution of Warehouse Operations

Past — Chronological Picking → Present — Rules Based Picking → Future — Optimal Pick Selection

Potential outputs include:
- optimal clustering of order allocation to pickers based on SKU location and real-time order well review
- optimal SKU locations calculated daily rather than periodically
- optimal order vs batch picking mix

The solution integrates into your existing warehouse management systems (WMS) to provide a more optimal output, whilst minimising the risk, disruption and cost of deployment.

Benefits within 12 months
- Reduced cost of order picking through optimised order clustering
- Increased labour productivity through reduced pick walk times, decreasing demand for additional staffing
- Increased order throughput with operational efficiency, delaying need for new warehousing

References
- 45% productivity increase for Fujitsu's own warehouse picking
- 8% capacity increase & 7% cost reduction in last mile delivery for Japan Post
- 2-5% cost reduction in supply chain logistics for Toyota Systems

Optimisation Process

Order Data · Warehouse Location Data → Digital Annealer → WMS · Optimised Pick Routes