

Spaghetti Diagrams in Warehousing & Distribution Flow

A Visual Tool to Reduce Waste and Improve Efficiency

What is a Spaghetti Diagram?

A Spaghetti Diagram is a lean tool used to visualize the flow of people, products, or information through a process or facility. Named for its resemblance to tangled spaghetti noodles, the diagram highlights inefficient movement and unnecessary travel paths in a workspace.

Purpose in Warehousing & Distribution

In warehouse and distribution environments, Spaghetti Diagrams are used to:

- Map the current flow of materials, workers, or forklifts.
- Reveal inefficiencies caused by layout design or process steps.
- Identify opportunities to shorten travel distances and streamline operations.
- Support continuous improvement and lean initiatives.

Common Uses:

- Tracking how far pickers travel during order fulfillment
- Analyzing forklift paths for staging and loading
- Studying the path of a product from receiving to shipping
- Visualizing operator movements at packing or kitting stations

How to Create One:

1. **Choose a process or area** – e.g., order picking or shipping.
2. **Observe and record** actual movement (don't rely on SOPs).
3. **Draw lines** over a facility layout to represent the paths taken.
4. **Analyze for waste** – look for loops, backtracking, excessive travel.
5. **Redesign** – propose layout or process improvements to reduce movement.

Benefits:

- ✓ Improves layout design for better flow
- ✓ Reduces motion waste and walking time
- ✓ Enhances safety by minimizing cross-traffic
- ✓ Leads to faster throughput and lower labor costs

Key Tip:

Combine Spaghetti Diagrams with time studies to fully understand the cost of inefficient movement and justify changes.

Spaghetti Diagram Example

