Spaghetti Diagram

The spaghetti diagram is named so because the lines of movement drawn on this diagram come to resemble a pile of tangled noodles, it is a movement path diagram by a more appetizing name. Spaghetti diagrams are a great way to view the material flow in a process and illustrate the wastes of transportation and motion that should be eliminated in producing a more lean operation.

Things You will Need:
- Floor layout of the area to be mapped
- Person who regularly does the work being mapped
- A pencil

Steps in Diagramming:

1. Select the process to be mapped. - It is generally good to start with work processes that are executed repeatedly and frequently. These processes will give the best returns on time invested.
2. Follow a person through the current state work process. As you follow, draw the person’s motion on the floor layout (you should not lift your pencil off of the paper, it should be 1 continuous line). Also note any safety or ergonomic hazards while you observe
3. Discuss the current state with those directly involved in the process. Share your diagram and talk about the total distance traveled and brainstorm ways that it could be reduced by moving equipment, bringing materials closer to the workplace, eliminating rework steps, or changing the order of steps.
4. Draw a map of the future state and implement. - Draw a map that anticipates the future state workflow based on the brainstormed ideas. Develop an action plan to implement the future state.
5. Verify the future state by following a person through it. - Verify that the future state works as you expected. Make corrections where necessary
6. Communicate and make permanent. - Communicate and train all users of the area on the new process. Show them the current state and future state spaghetti maps. Change standard work so that the new process becomes standard. Ask for feedback to continuously improve
The following is an example of a process that has been diagramed.

A few tips:

- The spaghetti should be cooked, not dry, so put down the ruler and forget about drawing neat straight lines. People don’t move in straight lines so the spaghetti diagram should represent the actual lines of motion.
- The diagram is not a piece of art so there is no need to draw things to scale or to use every color in your pencil box.
- This is a tool to expose the condition of badness so don’t be concerned about the precise walking distance. Do however keep track of the number of trips made to remote locations and note the reasons why.