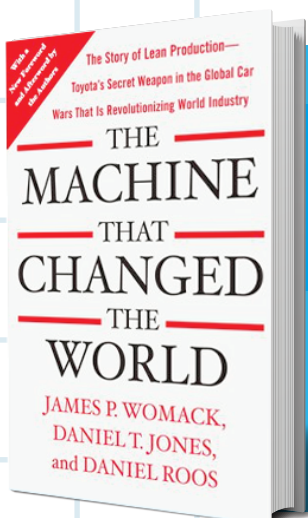


The Five Principles of **LEAN** Manufacturing



Lean manufacturing is a method for **reducing waste in manufacturing** (though it can also be used in non-manufacturing environments).

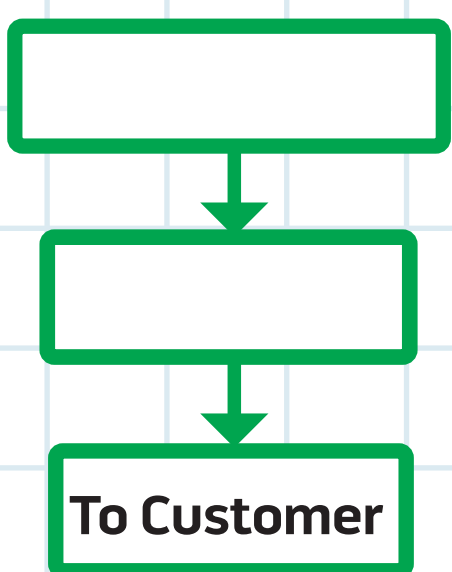


In 1991, James P. Womack, Daniel T. Jones, and Daniel Roos wrote a book called *The Machine that Changed the World* that helped to explain lean, its methods, and its success. In that book, they listed five principles of lean manufacturing.

1

Define Value

Value is what your customers want and what they're willing to pay for.



Map the Value Stream

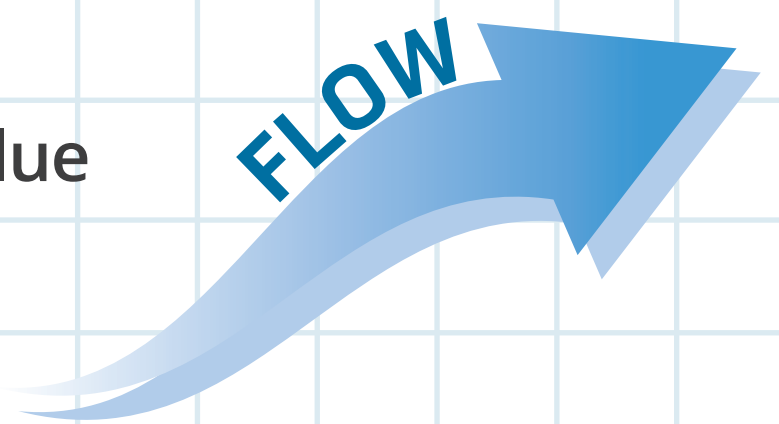
When you map your value stream, you map every step involved in the creation of a product and its delivery to your customers. The purpose of mapping your value stream is to identify the waste within it, which does not contribute to value, and then eliminating the waste.

2

3

Create Flow

After you've eliminated waste from your value stream, check to make sure things move smoothly from step-to-step without interruptions or delay. Reducing these interruptions or inefficiencies will increase flow.



Establish Pull

Reduce inventories and stockpiles of materials, using your improvements in flow to allow customers to "pull" products from you as you utilize just-in-time manufacturing. You can think of pull internally as well, with each step of your production process pulling from the previous step when necessary.

4

PULL

5

Seek Perfection

Keep defining value, reconsidering your value stream, creating flow, establishing pull, and making sure everyone at the workplace is dedicated to your lean manufacturing methods to create a never-ending cycle of continuous improvement.



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