

Developing An Entrepreneurial Mindset

Self-Assessment

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What Are Value Streams?

*A **Value Stream** is the set of all actions (both value added and non value added) required to bring a specific product or service from raw material through to the customer.*

Types of Value Streams

“Whenever there is a product (or service) for a customer, there is a value stream. The challenge lies in seeing it.”

- 3 enterprise value streams:
 - Raw Materials to Customer - Manufacturing
 - Concept to Launch - Engineering
 - Order to Cash - Administrative Functions

Identifying the Value Stream

The starting point is to learn to distinguish **value** creation from **waste** in your whole value stream

By putting on **waste glasses**!

By choosing a product family

By assembling the team and **taking a walk** together up the value stream

And **drawing a map** of what you find!

Value Stream Mapping

Helps you visualize more than the single process level

Links the material and information flows

Provides a common language

Provides a blueprint for implementation

More useful than quantitative tools

Ties together lean concepts and techniques

Value Stream Mapping

The Current State

Typical Steps to Complete a Current State Drawing

Document customer information

Complete a quick walk through to identify the main processes (i.e., how many process boxes)

Fill in data boxes, draw inventory triangles, and count inventory

Document supplier information

Establish information flow: how does each process know what to make next?

Identify where material is being pushed

Quantify production lead time vs. processing time

The Current State

Where and how large are the inventories in the physical flow?

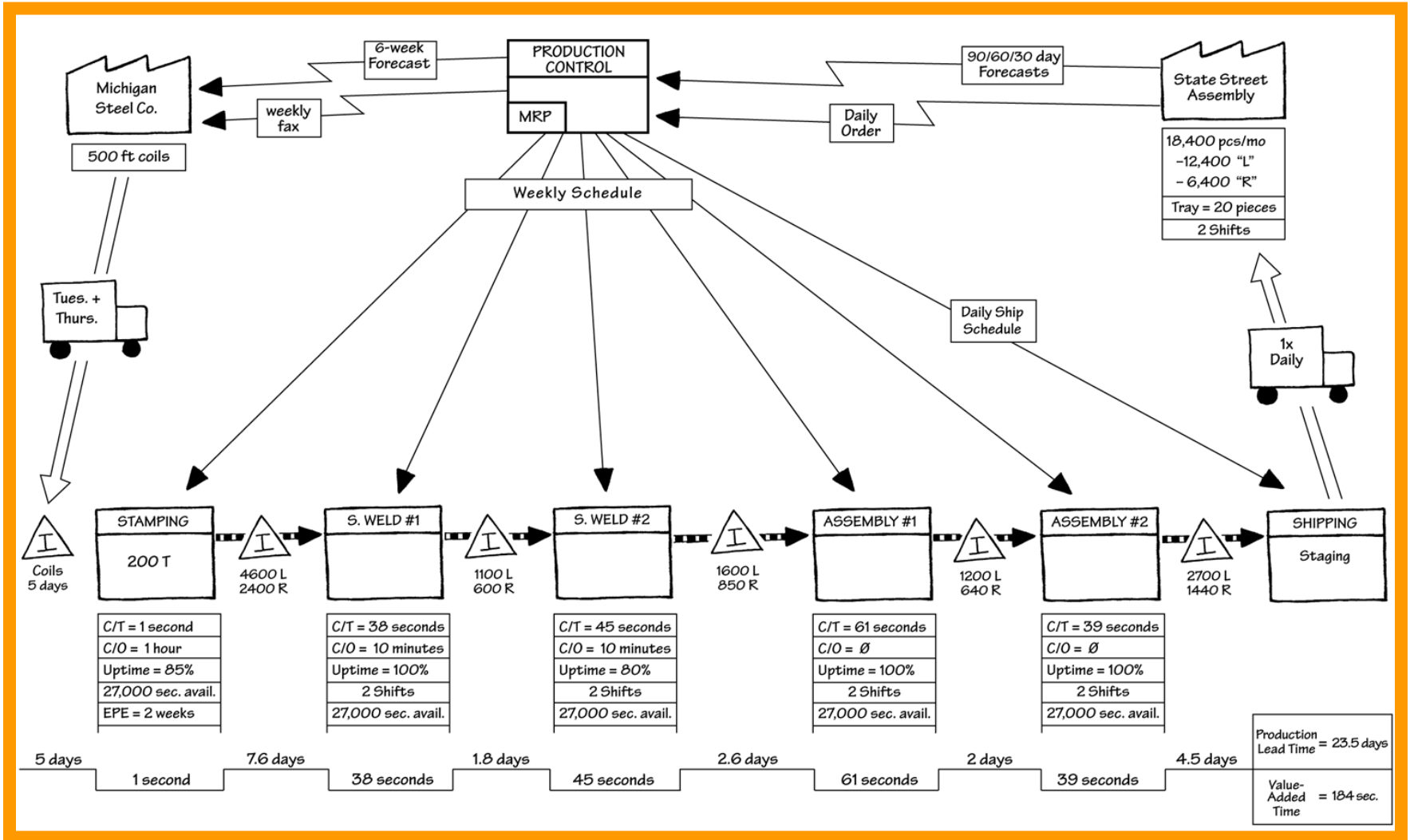
Hint: Carefully distinguish buffer stocks, safety stocks, and shipping stocks. Then determine “standard inventory” for current system design and capabilities.

The Current State

How reliable is each transport link (on-time delivery percentage) and how many expediting trips per year are needed?

Note: By multiplying quality data from by on-time delivery data you can calculate the “fulfillment level” each facility as perceived by the next downstream customer. This is a key measure from a total value stream perspective.

The Current State



The Current State

Typical Results

- 80 – 90% of total steps are waste from standpoint of end customer.
- 99.9% of throughput time is wasted time.
- Demand becomes more and more erratic as it moves upstream, imposing major inventory, capacity, and management costs at every level.
- Quality becomes worse and worse as we move upstream, imposing major costs downstream.
- Most managers and many production associates expend the majority of their efforts on hand-offs, work-arounds, and logistical complexity.

The Future State

Completed in a day with the same team

Focused on:

- Creating a flexible, reactive system that quickly adapts to changing customer needs
- Eliminating waste
- Creating flow
- Producing on demand

The Future State

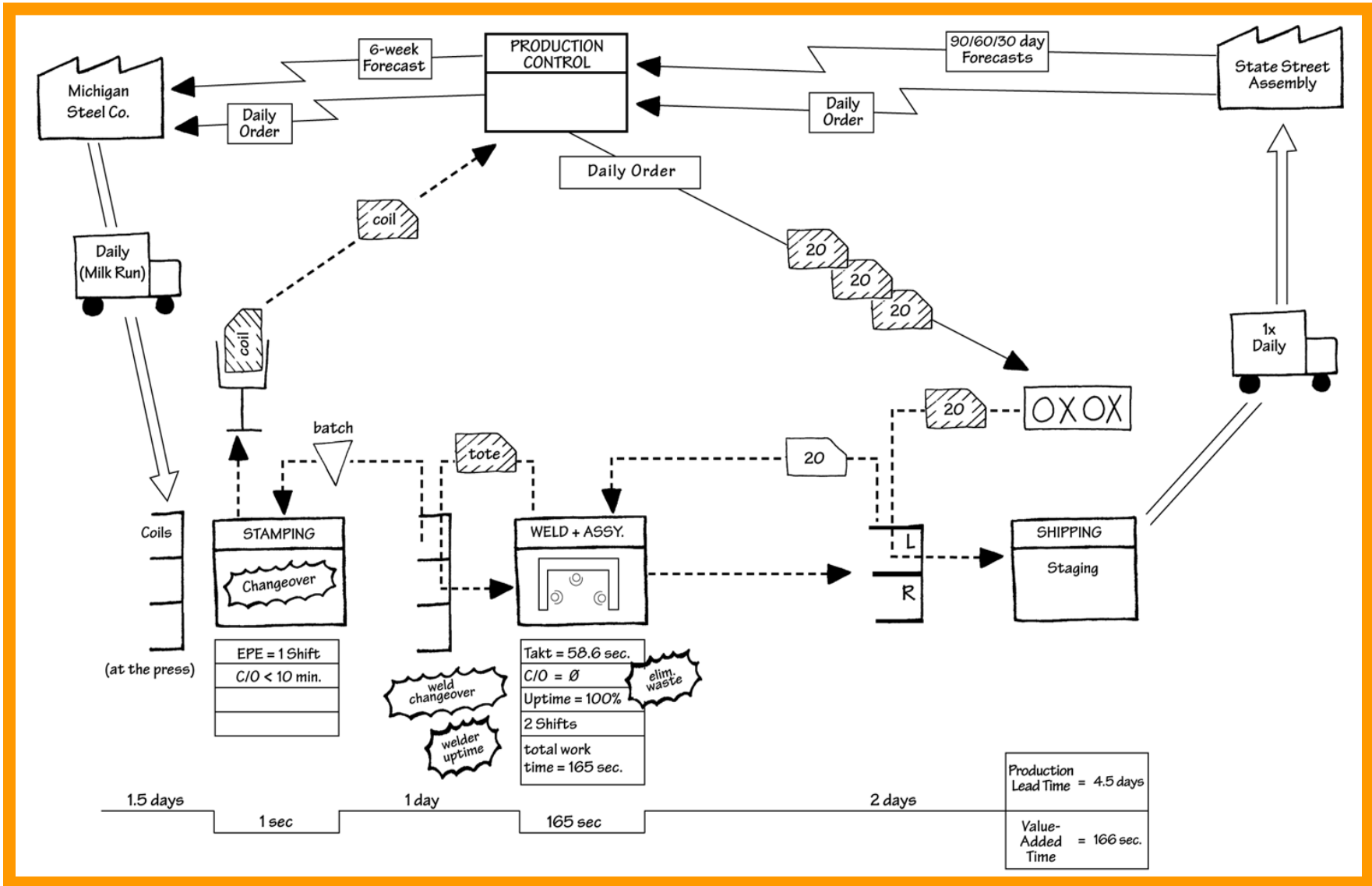
Activities aligned with our business strategy

Efforts focused on NET improvements for the company

Metrics supportive of fundamental change

Simple, constant communication of our plans and achievements as an enterprise

The Future State



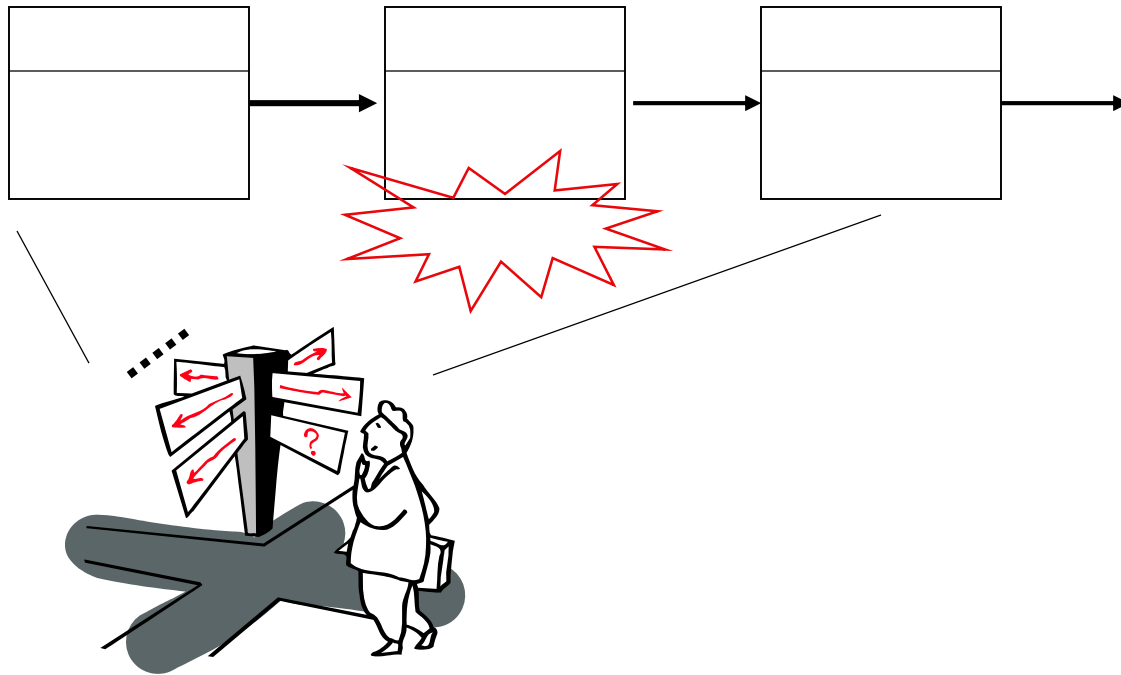
Implementing Change

Implementing Change

Critical Success Factors

- Management must understand, embrace, and lead the organization into lean thinking
- Value stream managers must be empowered and enabled to manage implementations
- Improvements must be planned in detail with the cross functional Kaizen teams
- Successes must be translated to the bottom line and/or market share

Implementing Change



Implementing Change

Typical Results

Throughput time falls from 44 days to 6 (87%)

Wasted steps fall from 65 to 27 (60%)

Transport distance falls from 5300 miles to 1100 miles

Demand amplification is reduced from 20% to 5%

Inventories shrink by 90% percent

Defects are reduced to the same rate at the start of the process as at the end

Throughput time shrinks to within customer wait time, meaning all production is to confirmed order

Roadblocks

75 years of bad habits

Financial focus with limited cost understanding

A lack of system thinking and incentives

Metrics supporting a 75 year old model

Limited customer focus

Absence of effective operating strategies

Roadblocks

Traditional approaches do not focus on the value stream

- Create “perfect competition” at the next level of supply upstream, by attracting many bidders.
- Improve bargaining power through scale economies in raw materials buys as well.
- Turn up the competitive pressure with reverse auctions where possible.
- Demand continuing price reductions in multi-year contracts whatever happens to volume.
- Note the lack of process analysis of the value stream!
- “Market will insure lowest costs & highest efficiency!”

Roadblocks

Margin squeezing rather than true cost reduction.

Persistent shortfalls in quality and delivery reliability.

Low-ball bidding and the engineering change game.

Collapse of “partnership” and “trust” in economic downturns (2001!), replaced by “survival of the fittest”.

Wrong Ways to Address Roadblocks

Programs of the month (band aids)

Meetings, meetings, meetings, meetings

Silo optimization

Pull Manufacturing

Outline

Why Pull Manufacturing?

The Problem of Inventory

Just In Time

Kanban

One Piece Flow

Demand / Pull

Standard Work & Takt Time

Production Smoothing

Why Pull Manufacturing?

Lean manufacturing is really about minimizing the need for overhead
which is about concentrating precisely on *only* what is necessary
which is about linking interdependent supply system decisions, and
actions
which needs to be visual, responsive and simple to manage

Push Vs. Pull Scheduling

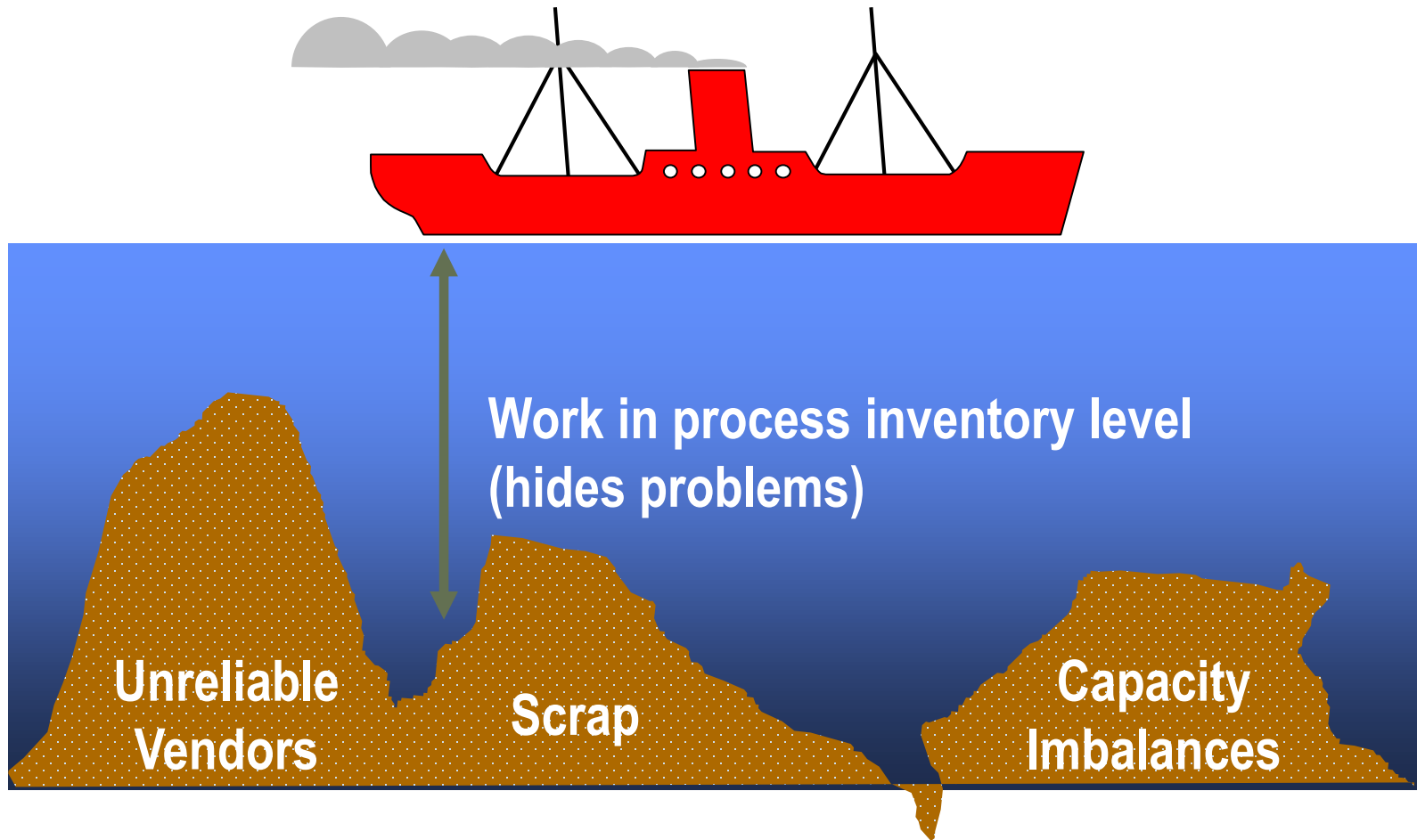
Push Scheduling

- traditional approach
- “move the job on when finished”
- problems - creates excessive inventory

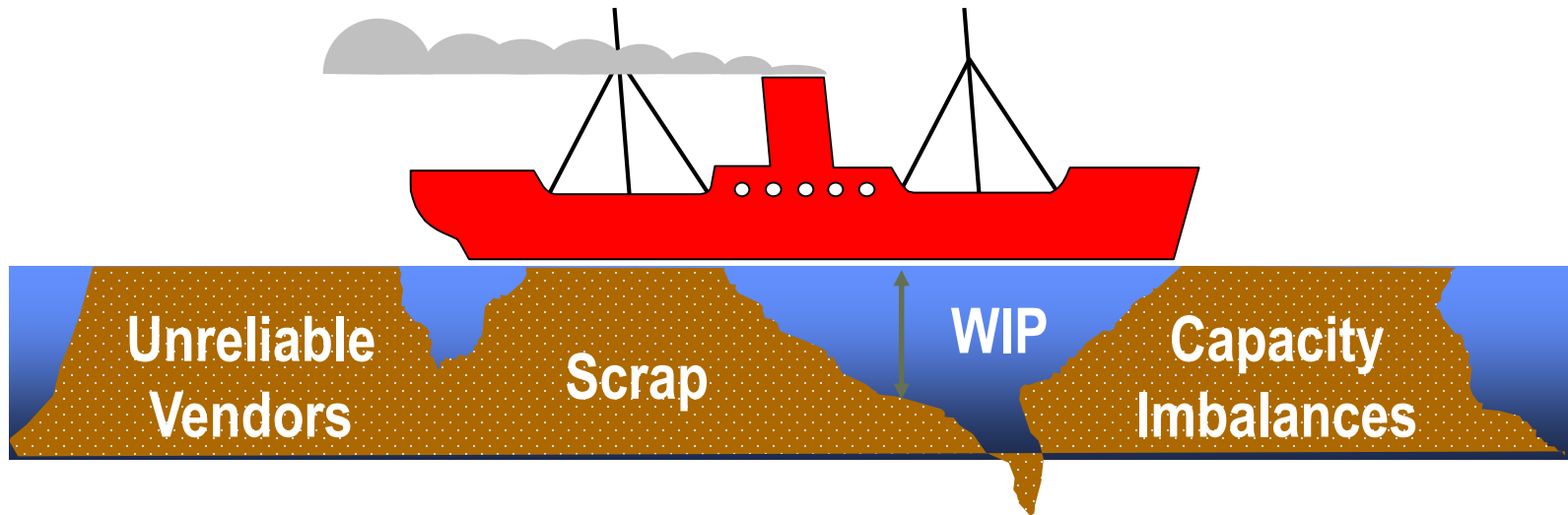
Pull scheduling

- coordinated production
- driven by demand (pulled through system)
- extensive use of visual triggers
(production/withdrawal kanbans)

Inventory Hides Problems



Lowering Inventory Reveals Problems



What is Just-in-Time?

Management philosophy of continuous and forced problem solving (forced by driving inventory out of the production system)

Supplies and components are 'pulled' through system to arrive where they are needed when they are needed.

Objective of JIT

Produce only the products the customer wants

Produce products only at the rate that the customer wants them

Produce with perfect quality

Produce with minimum lead time

Produce products with only those features the customer wants

JIT Principles

Create flow production

- one piece flow
- machines in order of processes
- small and inexpensive equipment
- U cell layout, counter clockwise
- multi-process handling workers
- easy moving/standing operations
- standard operations defined

Quality enables JIT

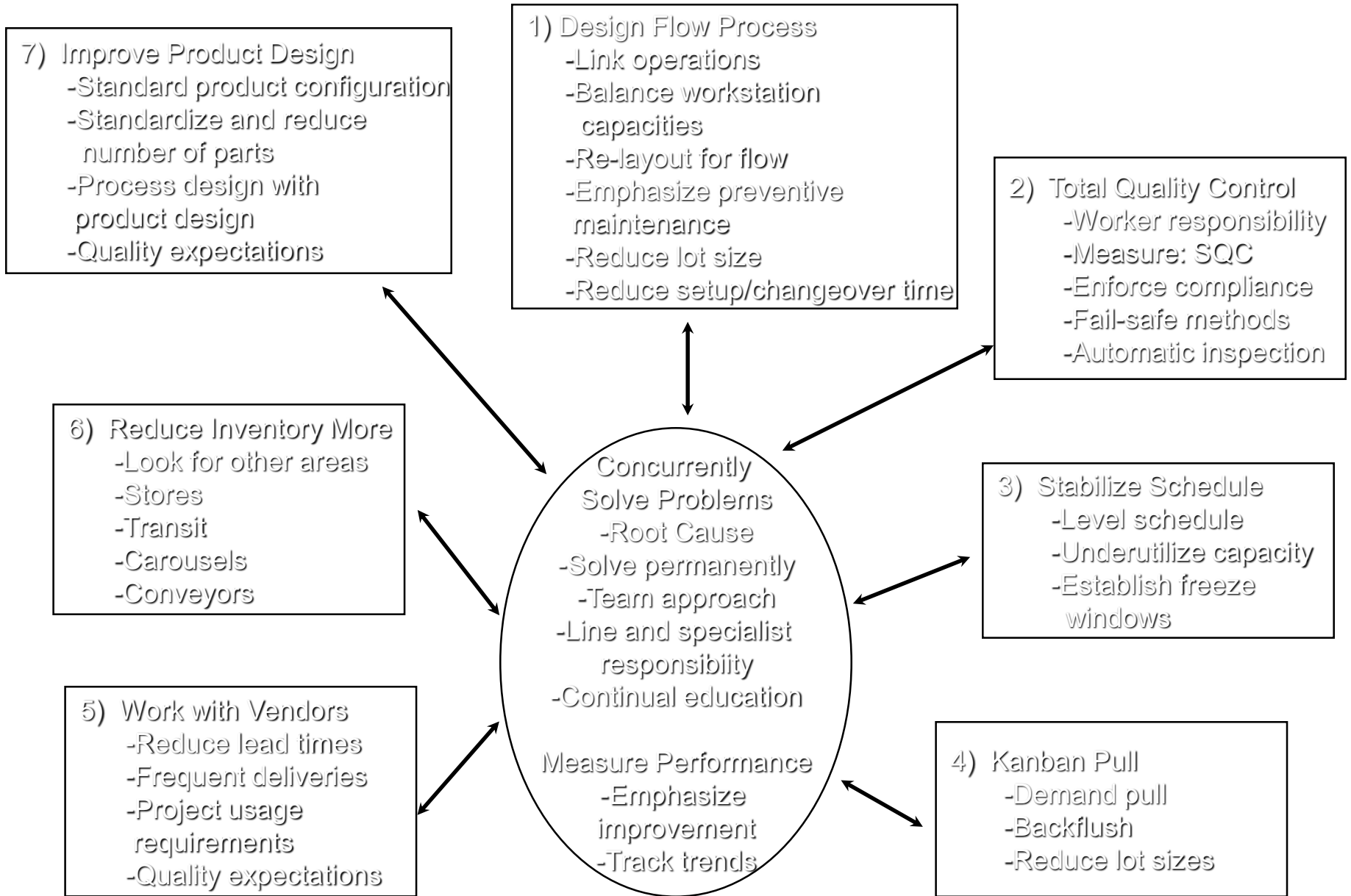
Processes are easy to understand—visible

Quality issues are apparent immediately

Scope of problems are limited because of lower inventory levels

TQM management methods are very important

How to accomplish JIT production



Kanban

Japanese word for card

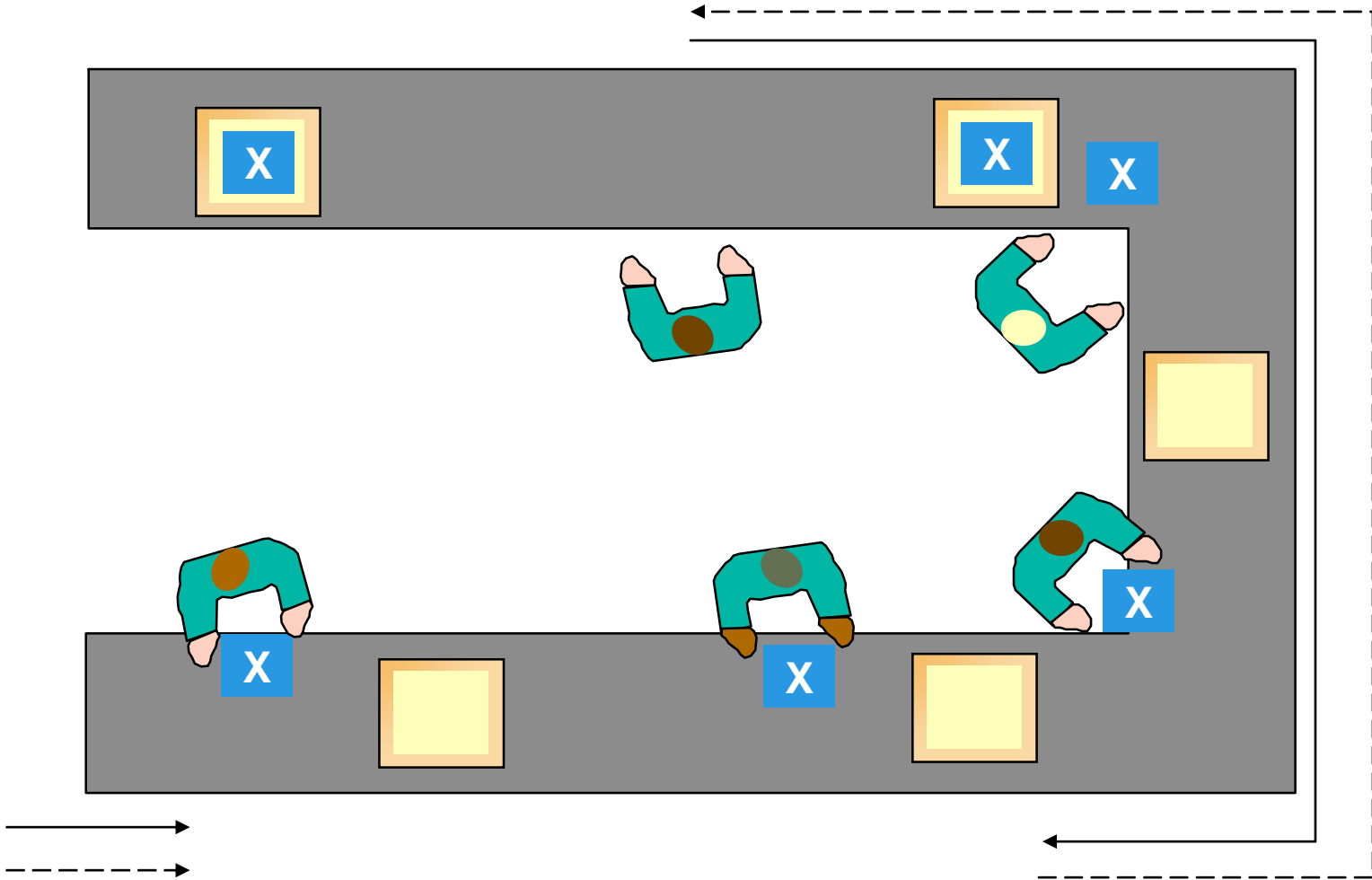
Authorizes production from downstream operations based on physical consumption

May be a card, flag, verbal signal, etc.

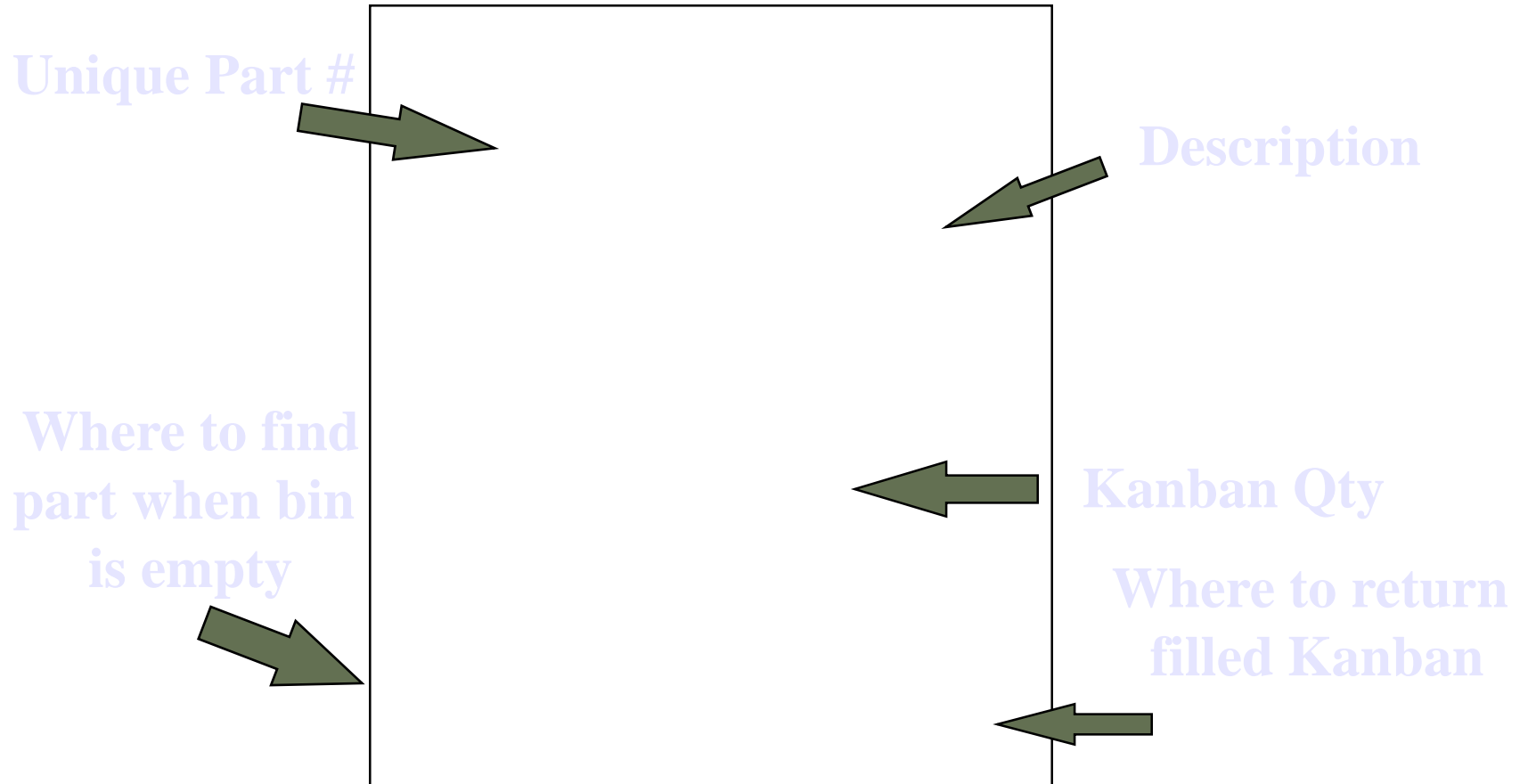
Used often with fixed-size containers

Kanban quantities are a function of lead-time and consumption rate of the item being replenished ($\text{min qty} = (\text{demand during lead-time} + \text{safety stock}) / \text{container quantity}$)

Kanban Squares



Kanban Card



Quality at the Source

For JIT & Kanban to work, quality must be high

- **There can be no extra inventory to buffer against the production or use of defective units**

Producing poor-quality items, and reworking or rejecting them is wasteful

The workers must be responsible for inspection & production quality

*The philosophy is, “**NEVER** pass along defective item”*

One Piece Flow

A philosophy that rejects batch, lot or mass processing as wasteful.

States that product should move (flow) from operation to operation, only when it is needed, in the smallest increment.

One piece is the ultimate (one-piece-flow)

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Pull Production

Actual customer demand drives the manufacturing process.

It creates a system of cascading production and delivery instructions from downstream demand to upstream production in which nothing is produced by the upstream supplier until the downstream customer signals a need.

The rate of production for each product is equal to the rate of customer consumption.

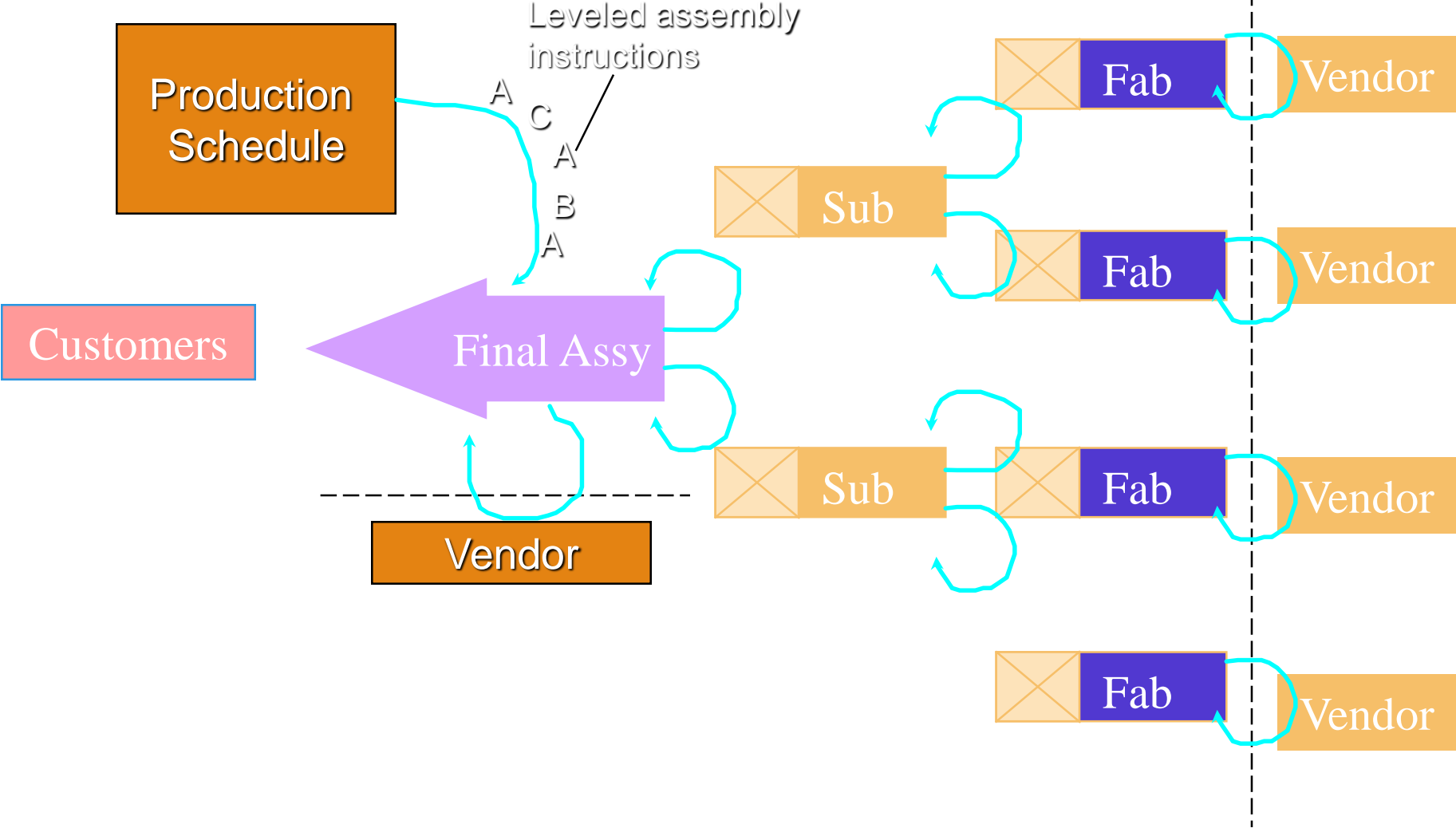
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Pull System



Reference

DEVELOPING AN ENTREPRENEURIAL MINDSET (Ultradatum E-Illuminations Series Book 1) by Ron Lanning | Oct 26, 2011

1 Habit™ for Entrepreneurial Success: 300 Life-Changing Habits to Turbo-Charge Business Book 6 of 7: 1 Habit | by Steven Samblis, Forbes Riley, et al

The Kingdom Driven Entrepreneur's Guide: Doing Business God's Way by Shae Bynes and Kingdom Driven Publishing

New to Big: How Companies Can Create Like Entrepreneurs, Invest Like VCs, and Install a Permanent Operating System for Growth by David Kidder and Christina Wallace | Apr 2, 2019

Dream Toolbox: Building an Entrepreneurial Mind and Financial Abundance by Kenneth C. Aldrich | Apr 25, 2019

Capacity Building in Developing and Emerging Countries: From Mindset Transformation to Promoting Entrepreneurship and Diaspora Involvement (Contributions to Management Science) Part of: Contributions to Management Science (154 Books) | by Elie Chrysostome | Jul 16, 2019

Entrepreneurial Leadership: The Art of Launching New Ventures, Inspiring Others, and Running Stuff by Joel Peterson, Josh Childs, et al.