



**Entrepreneur
& Family**
BUSINESS COUNCIL

A PRACTICAL APPROACH TO

Operations Management



B.J. Slater
Plant Marvel
Laboratories, Inc.

bjslater@plantmarvel.com

Presenter Intro

Co-Owner and Director of Operations for Plant Marvel Laboratories, Inc. a family manufacturing company.

Previously Director of Safety for Empire Airlines.

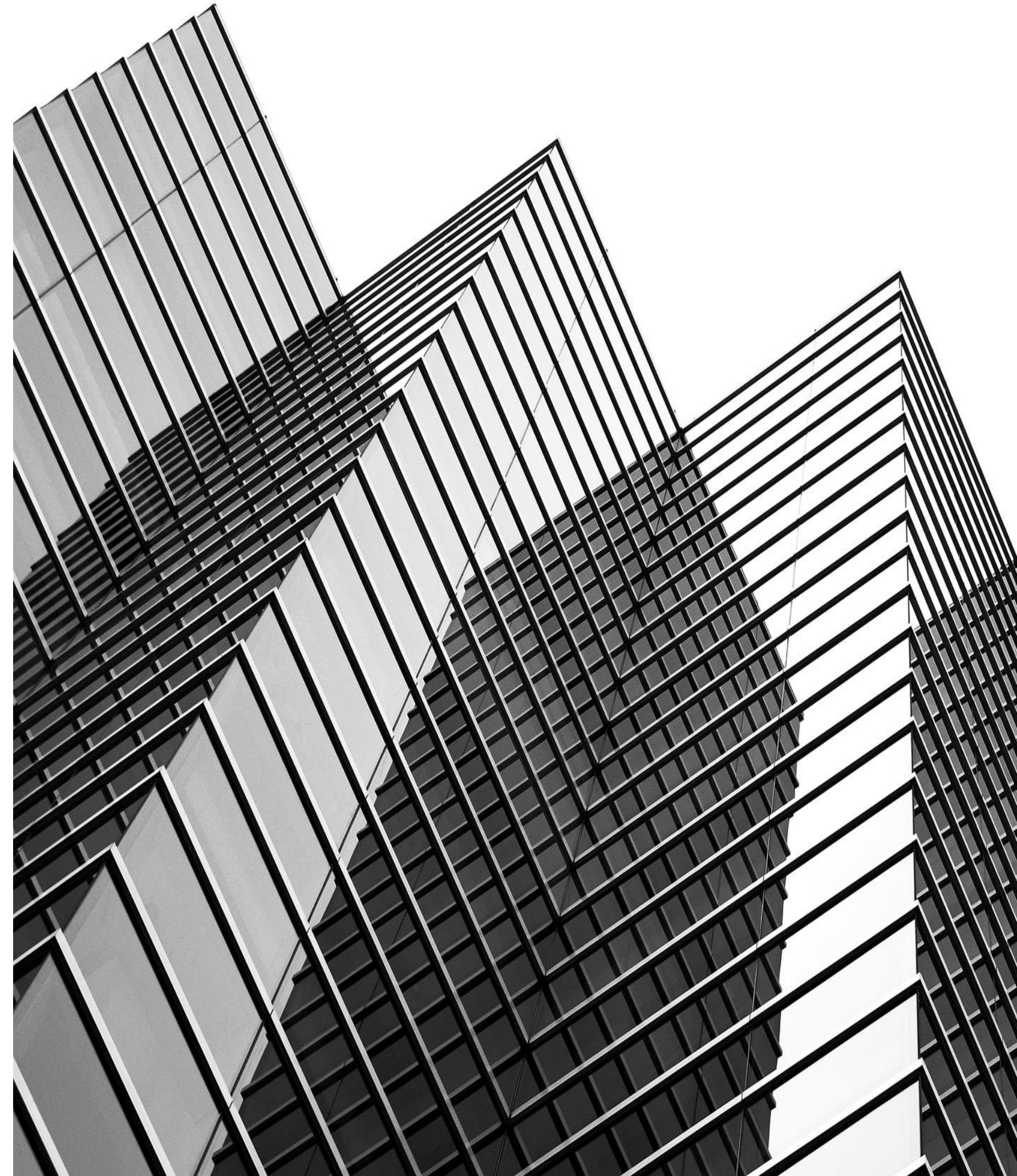
MBA, 2014 from University of Idaho



What is Operations Management?

“TEXTBOOK” DEFINITION

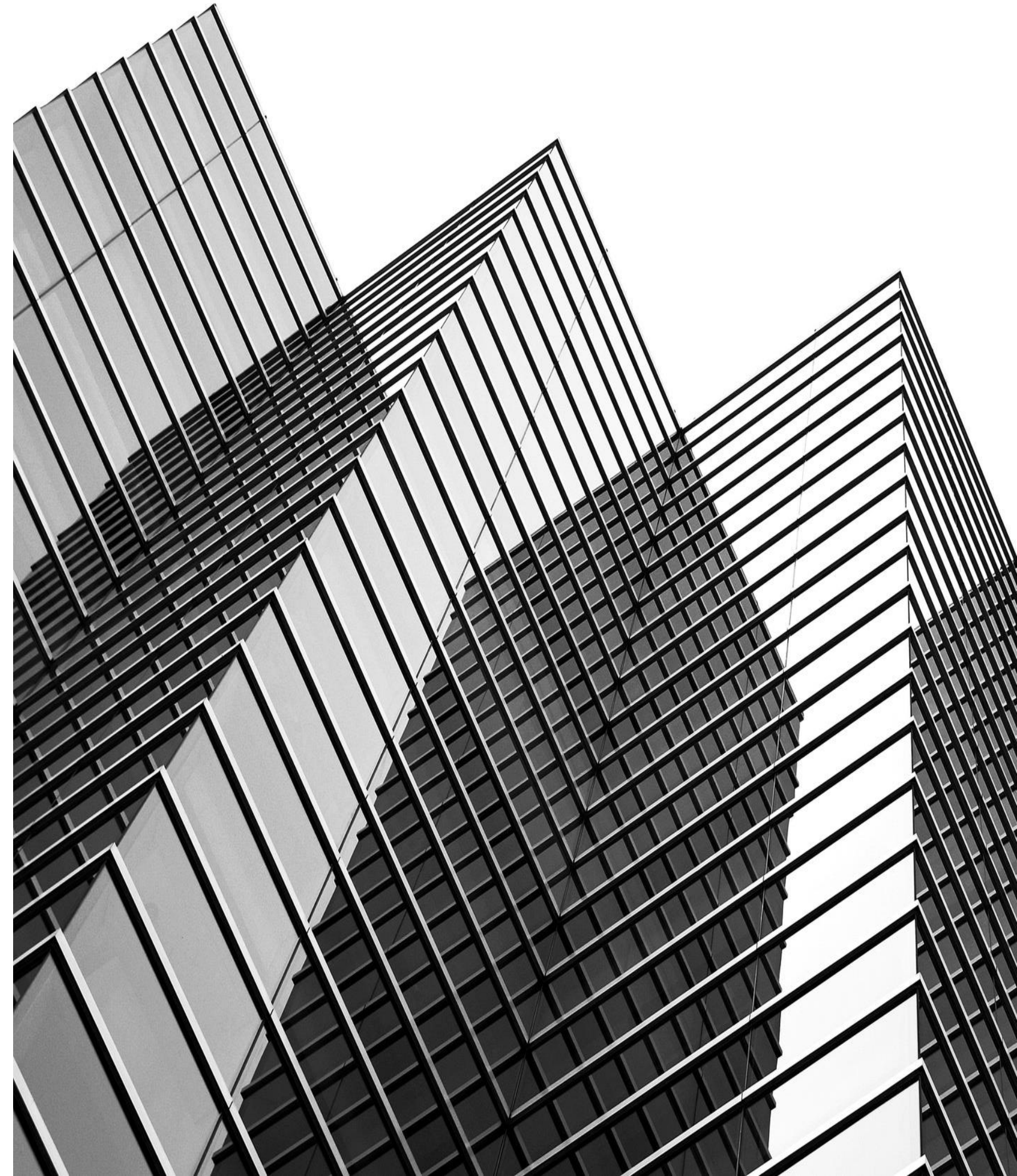
The design, optimization, and performance of processes that convert inputs (raw materials, human resources, and energy) into products and services that a business sells (output).



What is Operations Management Really?

A PRACTICAL APPROACH

Effectively running and improving the processes your business uses to deliver goods and/or services to your customers.





Components of Operations Management

SUPPLY CHAIN

The flow of products from supplier to customer. Supplier relations, logistics, planning, and financing.

FORECASTING & PLANNING

Ensuring you have the resources necessary to meet future customer demand.

MANUFACTURING OR SERVICE DELIVERY

All the processes used to create value for your customers.

MANAGEMENT, TRAINING & QUALITY ASSURANCE

Measuring outcomes and improving processes to produce better outcomes.

Ops Management Soup

TOTAL QUALITY
MANAGEMENT

GOOD
MANUFACTURING
PRACTICES

LEAN

TOYOTA
PRODUCTION
SYSTEM

SCRUM

THEORY OF
CONSTRAINTS

ISO 9000

JUST IN TIME

AGILE

SIX
SIGMA

KAIZEN

Entire Organization

Committed Leadership, Change from the bottom-up.

Process Focus

A System of Documented Processes

Continuous Improvement

Measure KPIs, Incremental Changes, Repeat



Why Document Processes?

Lessons from the Underpants Gnomes of South Park



Step 1

Collect
Underpants



Step 2

?



Step 3

Profit

Documenting Processes

IDENTIFY



Identify your core business processes and select one to document.

GATHER INFORMATION



Learn the steps in the process from the people who do it.
Record how it's *actually* done.

DOCUMENT



Write out or sketch the list of steps with a focus on Who? What? and When?

SIMPLIFY & PUBLISH



Simplify a process to its essence making it easy to explain to others.

Process Components

Authority & Responsibility	Procedures	Interfaces	Process Measures	Process Controls
Who?	What?	When?	Outcome Metrics	Guardrails
Who performs steps in the process?	Clear description of the steps to be completed.	What triggers/starts the process?	How well is the process working?	Ensures the process works as intended.
What decisions can they make? (Authority)	Enough detail for clarity.	What comes next?	Does the output meet the standard?	Many forms: • Training • Checklists • Signage • Supervision • Procedures
Who owns the outcome? (Responsibility)	Simple enough to understand and use.	What is affected by the process?	Quality, Efficiency, Customer Satisfaction	

Measure vs. Control

Examples from a Fertilizer Manufacturer

Process Measure

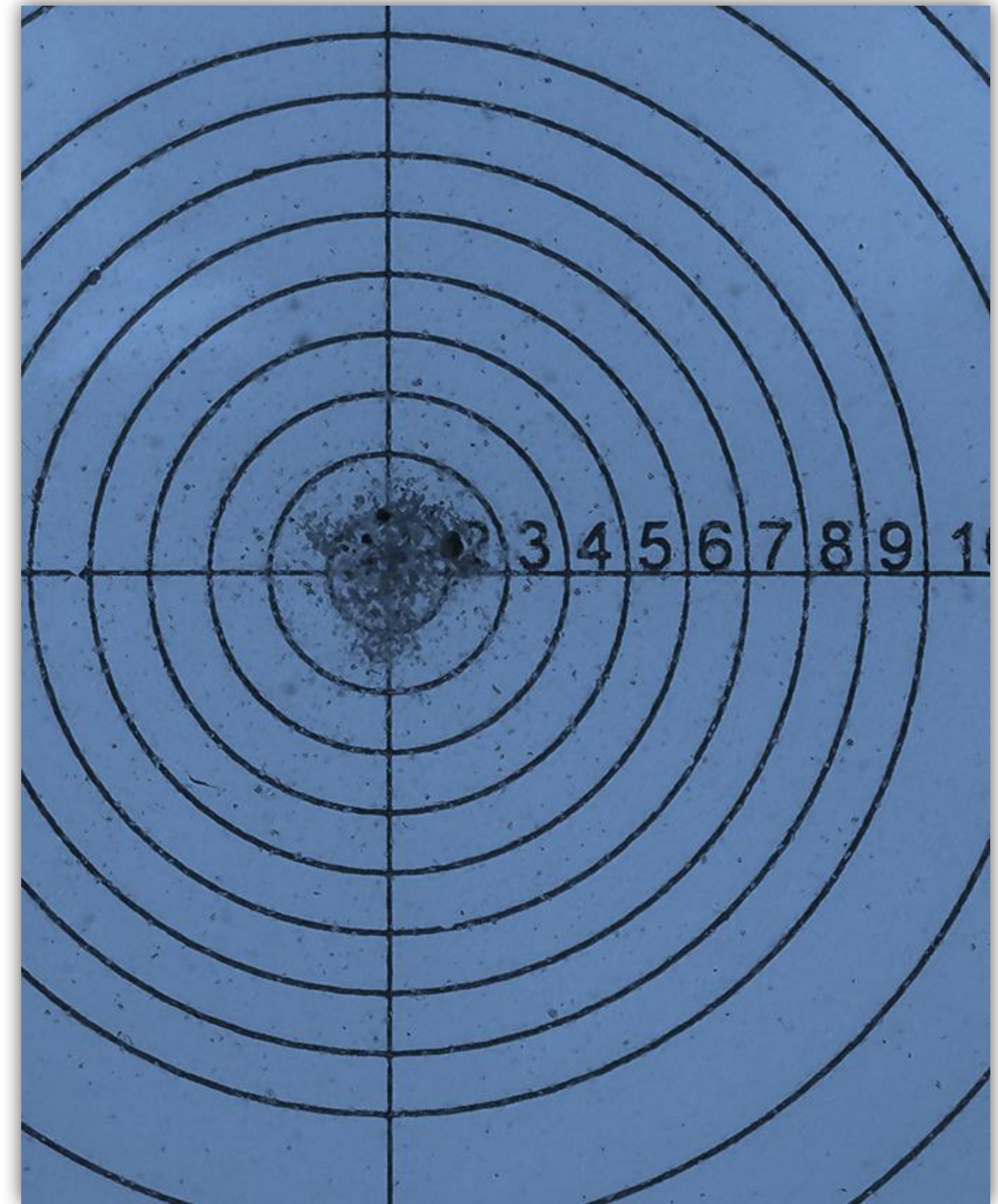
Solubility of Product

- Important to customer
- Measured during QA testing.
- Pass/Fail Criteria

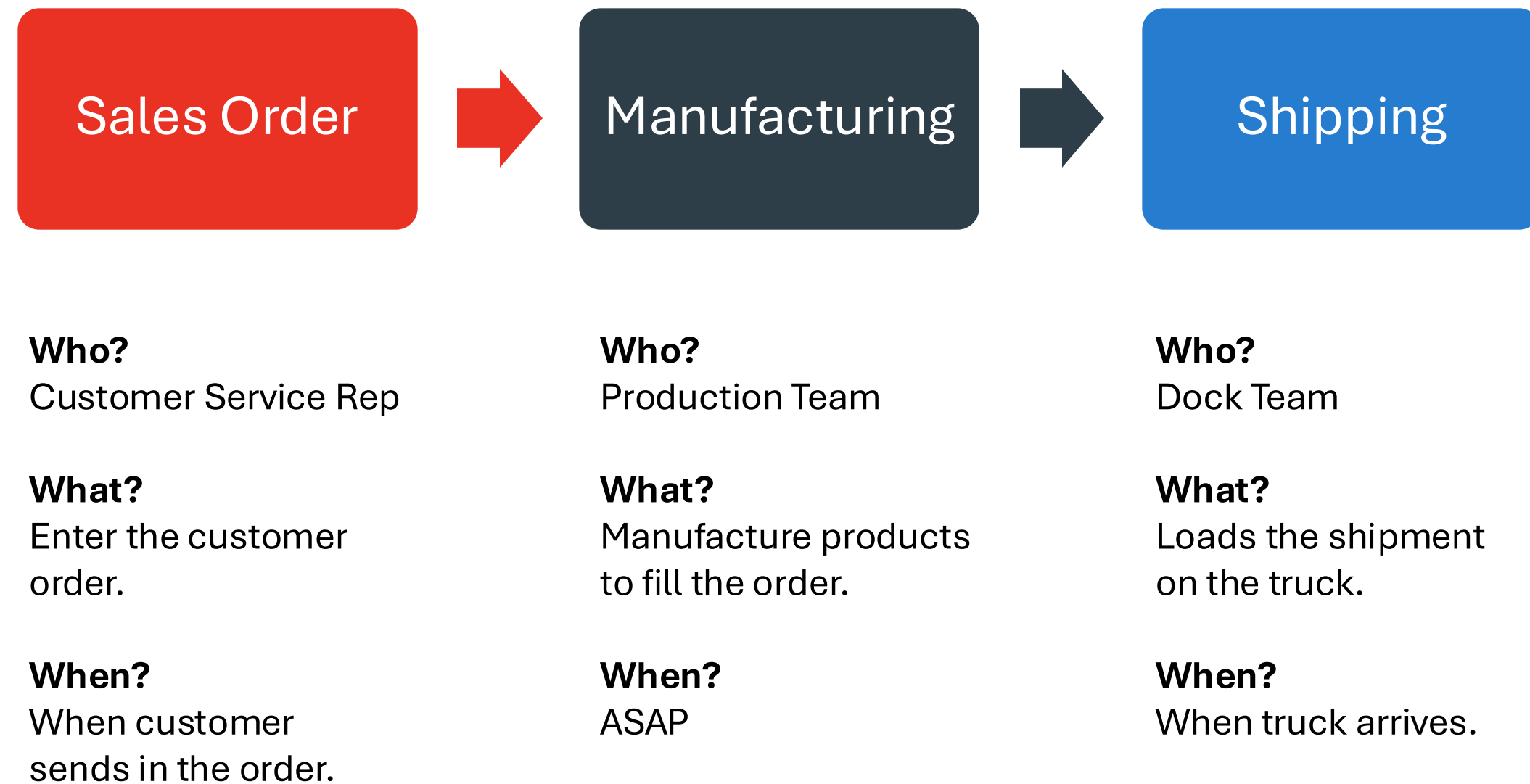
Process Control

Ensuring Product Solubility

- Separate incompatible blends on different assembly lines.
- Clean equipment and containers on a schedule.
- Ingredients to enhance solubility.



Plant Marvel's Basic Order Fulfillment Process



Plant Marvel's Basic Order Fulfillment Process

**Who?**

Customer Service Rep

What?

Customer order is entered into the ERP software and verification sent to customer and salesperson.

When?

Within 3 hours of receipt of customer order via e-mail, phone, or fax.

Who?

Production Team

What?

Ingredients for order are weighed, blended, and packaged into pre-labeled bags. Bags stacked on pallets.

When?

On the day work orders are scheduled for completion.

Who?

Operations Specialist & Dock Team

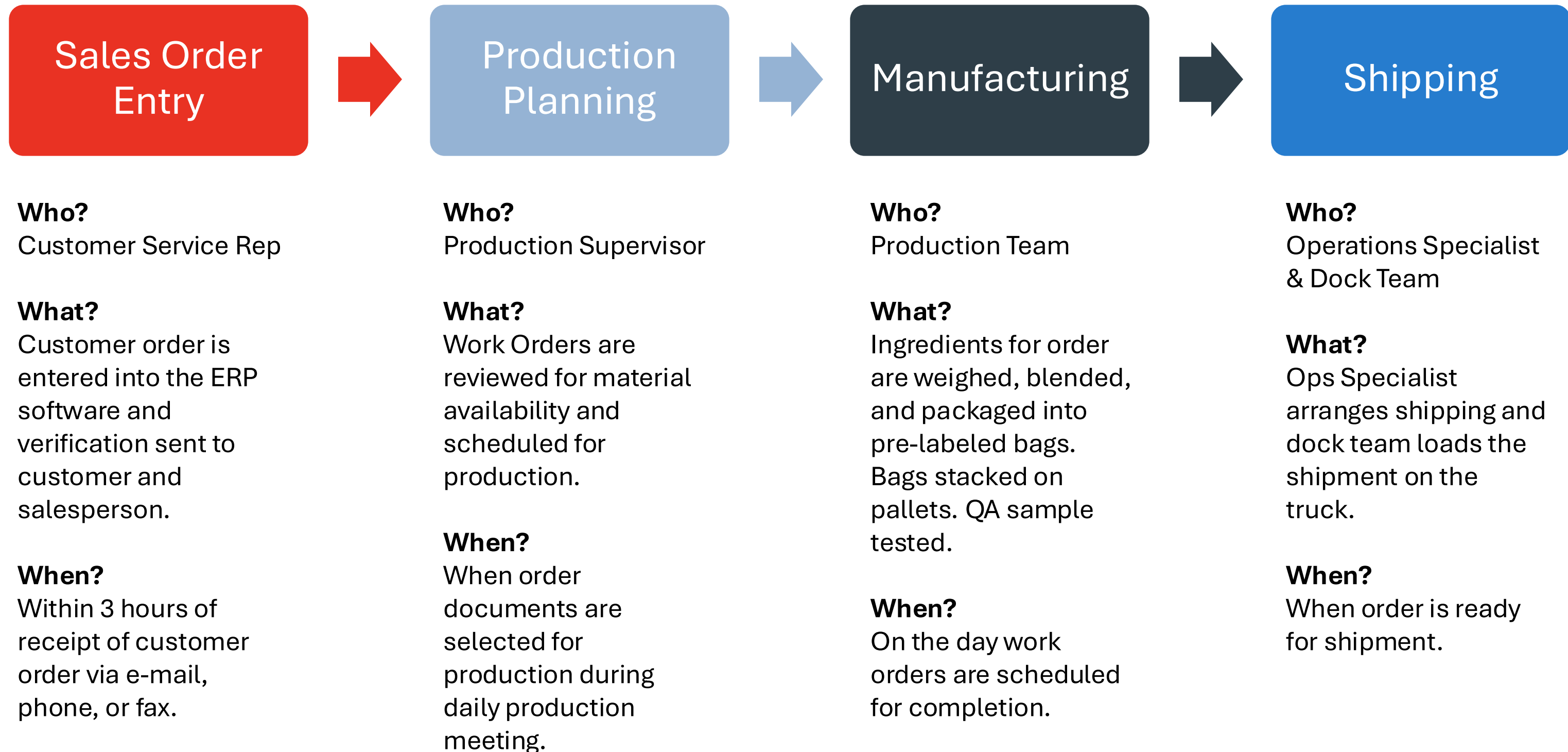
What?

Ops Specialist arranges shipping and dock team loads the shipment on the truck.

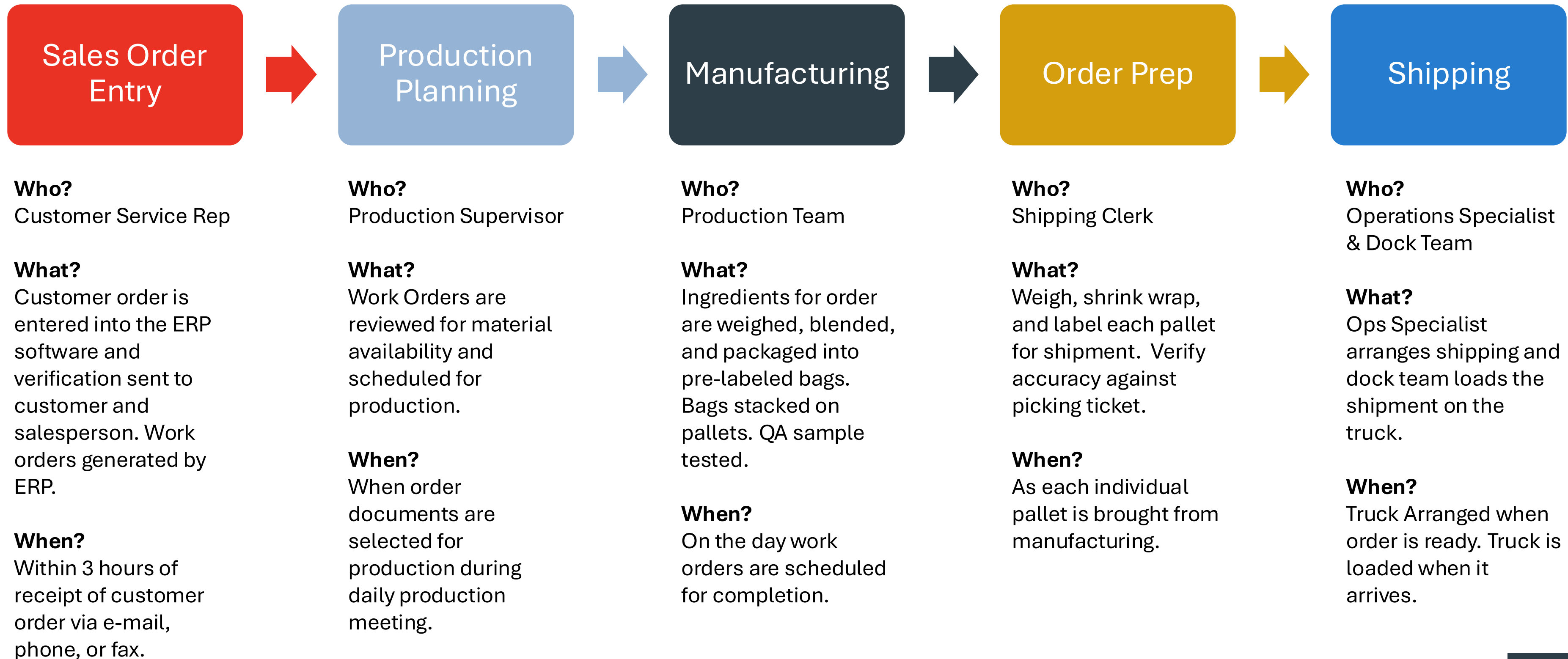
When?

When order is ready for shipment.

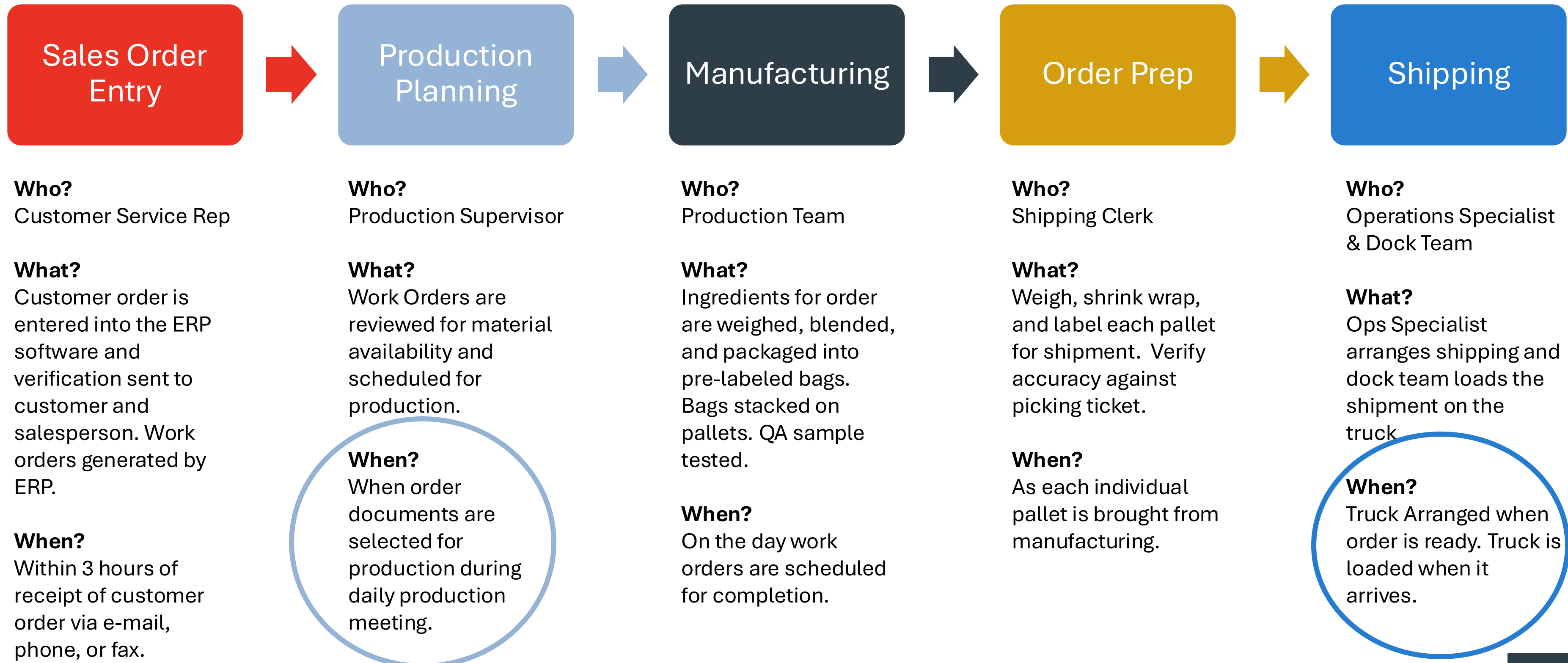
Plant Marvel's Basic Order Fulfillment Process



Plant Marvel's Basic Order Fulfillment Process



Plant Marvel's Basic Order Fulfillment Process



Improving the Process

Production Planning Timing

Problem: Customers complained about excessive turn around time on some orders.

Cause: Orders were selected for production arbitrarily, and raw material requirements were not evaluated in advance.

Solution: Review order scheduling and materials requirements at weekly planning meeting. Schedule orders based on customer need.

Quality Assurance Release

Problem: Some orders shipped with products that failed QA tests.

Cause: Shipping was being scheduled as soon as orders were ready – even if QA testing wasn't complete.

Solution: Require entire order to pass before shipping is arranged.

Process Improvement

Systematically Improve Your Business through incremental changes



MEASURE

Identify a metric to improve. What do we want to do better?



DECIDE

Set a Goal. What is the desired outcome?



CHANGE

Update the Process. What do we need to do differently to achieve the goal?



COMMUNICATE

Implement the new process. Who needs to receive training, documentation, and communication?



EVALUATE

Re-measure the key metric. Did the change achieve the goal? Why or why not?

Step 1: Measure

Production Planning Timing

Problem: Customers complained about excessive turn around time on some orders.

What to Measure: The maximum sales order turn time from order placement to shipping date.

Quality Assurance Release

Problem: Some orders shipped with products that failed QA tests.

What to Measure: The number of orders released for shipment with failed QA Tests.

Step 2: Decide

Production Planning Timing

Problem: Customers complained about excessive turn around time on some orders.

Selected Goal: The maximum sales order turn time will be within 3 days of the average turn time for the quarter for orders of similar size.

Quality Assurance Release

Problem: Some orders shipped with products that failed QA tests.

Selected Goal: ZERO

Step 3: Change

Production Planning Timing

Problem: Customers complained about excessive turn around time on some orders.

Cause #1: Orders were selected for production arbitrarily with the loudest voices getting priority.

Cause #2: Raw material requirements were not evaluated in advance. Some orders wait for raw materials to arrive.

Process Change: The production manager brings all open work orders to production planning meeting to address aging orders and special raw material requirements.

Quality Assurance Release

Problem: Some orders shipped with products that failed QA tests.

Cause: Shipping was being scheduled as soon as orders were ready, even if QA testing wasn't complete.

Process Change: The QA tech will provide a release to the operations specialist for orders that pass QA. Trucks may not be scheduled without the release.

Step 4: Communicate

Production Planning Timing

Process Change: The production manager brings all open work orders to production planning meeting to address aging orders and special raw material requirements.

Training:

- Production Manager
- Attendees of planning meeting.

Documentation:

- Process Diagram Update
- Production Planning Manual

Other Communication: Planning Meeting Agenda

Quality Assurance Release

Process Change: The QA tech will provide a release to the operations specialist for orders that pass QA. Trucks may not be scheduled without the release.

Training:

- Operations Specialist
- QA Technicians
- Production Manager

Documentation:

- Process Diagram Update
- QA Manual
- Shipping Manual

Other Communication: QA Release Form (new)

Step 5: Evaluate

Assess Process Change and Effect on Selected Metric.

Process Change: Is the change in process being adhered to? Is the team executing the process as intended?

Original Metric: Did the change in process have the intended effect?

Unintended Effects: Did the change in process create any new, unforeseen issues?



Key Takeaways

GOAL OF OPERATIONS MANAGEMENT

To reliably achieve better business results through process improvement.

BUSINESS IS A SYSTEM OF PROCESSES

Document, simplify, and publish your processes for use in training, management, and continuous improvement.

DOCUMENT & SHARE KEY PROCESSES

Clearly Identify Who, What, When/Where for each process step.

SYSTEMATIC, INCREMENTAL, IMPROVEMENT

5 steps of process improvement: Measure, Decide, Change, Communicate, Evaluate.

Presenter Contact Info



B.J. Slater

Plant Marvel Laboratories, Inc.

bjslater@plantmarvel.com