



Enabling Productivity on the Production Floor with Manufacturing Execution

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Meet Your Speaker

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Course Objectives

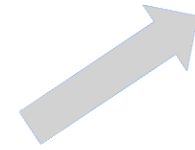
- Describe the terminology and concepts used with manufacturing execution.
- Describe the roles and functions that use manufacturing execution.
- Describe the steps that should be considered when planning an installation and configuration of manufacturing execution.
- Explain how the features of manufacturing execution integrate with other modules of Microsoft Dynamics 365 for Operations.
- Discuss how production orders are created and processed.
- Use the Job card terminal and devices to process production order jobs.
- Set up and view document in the job card terminal or device.

About Manufacturing Execution



About Manufacturing Execution

Insights



Record Costs

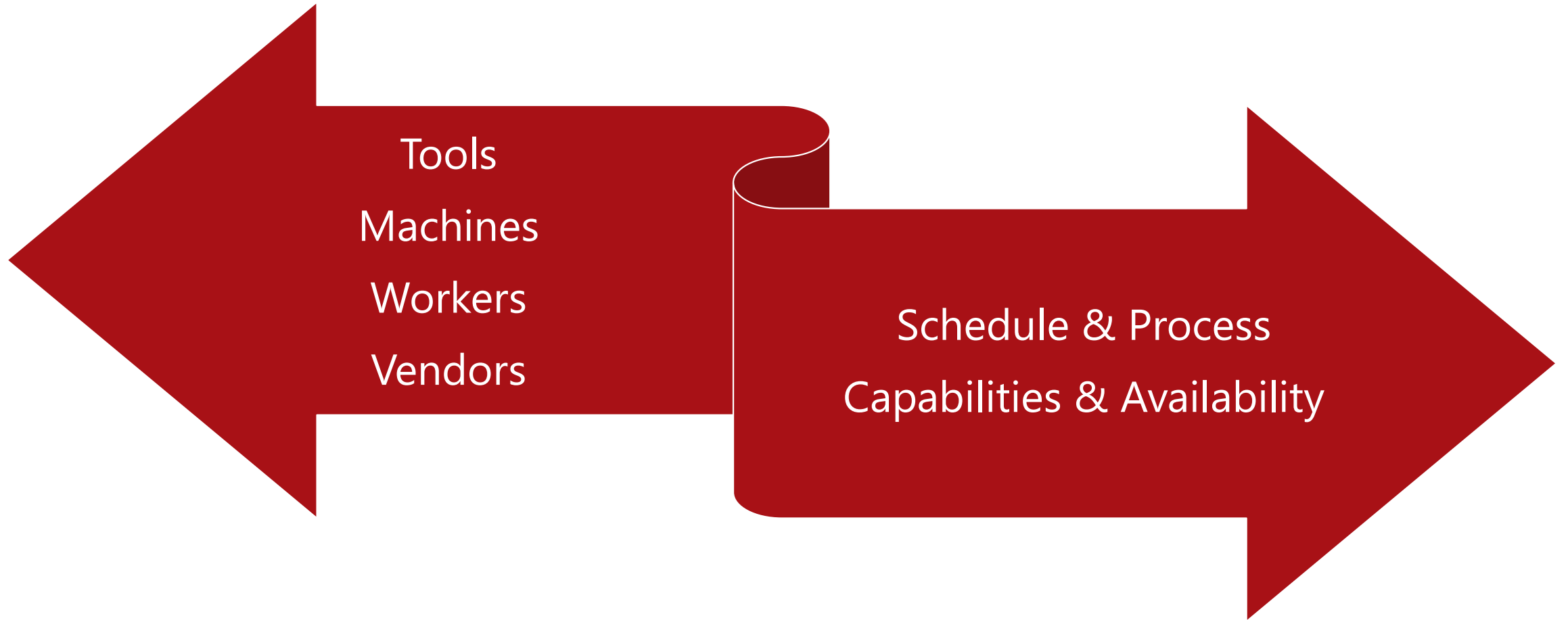


Monitor Performance



Trace History

Resource Management



Production Scheduling

Inputs

- Resources
- Inventory
- Master Planning

Outputs

- How much to produce?
- How to optimize resources?

Production Order Processing

Enter Details in
MES

Integration
with Production
Control

Production
Control
Executes

Performance Analysis and Tracing

Detailed WIP information

Resource performance statistics

Trace orders, batches, or serial numbers

General Terminology and Concepts



Production Control > Manufacturing Execution

Job card terminal

Job card device

Handle messages

Production jobs

Inquiries

Project activities

Periodic

Setup

Other Modules

Human Resources

- Workers

Time and Attendance

- Approve
- Calculate
- Indirect Activities
- Configuring Job Card Terminals and Devices

Additional Terminology and Concepts



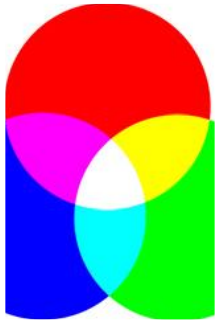
Terminology



Manufacturing
execution



Job list



Job bundling

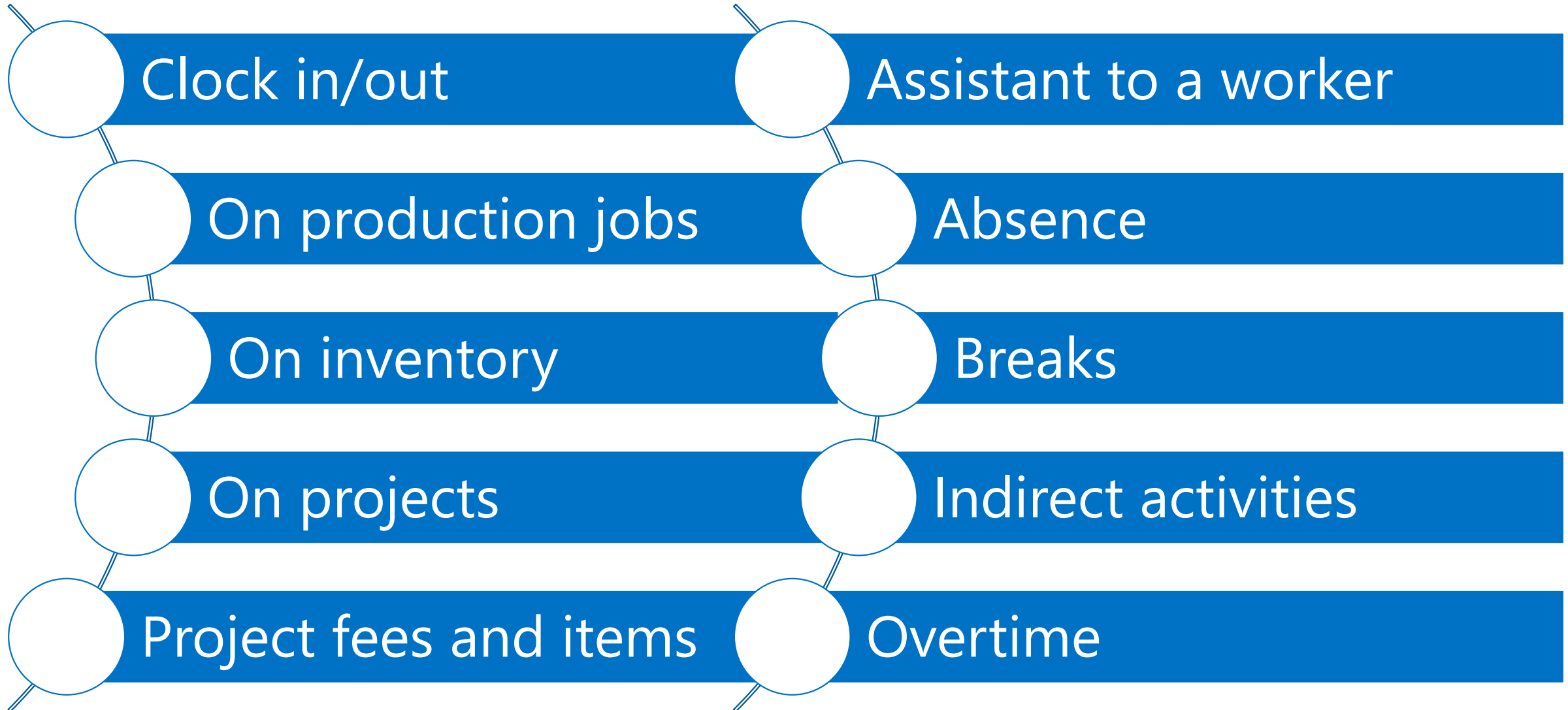


Pilot/assistant
registrations



Indirect
activities

Registration Types



Planning and Job Scheduling Terminology



Planning Methods for Production

Job

- More detail
- Explodes each job
- After operations or on its own
- Short term scheduling

Operations

- Less detail
- General estimate of time
- Scheduling direction
- Capacity of resources
- Materials optimization
- Estimate costs first

Job Scheduling

Split operations into jobs.



Schedule resources for related operations.



Calculate starting and ending times.



Determine resources.



Explode operations into jobs.

Key Roles in Manufacturing Execution



Production Manager



- Calendar management



- Setup for MES and Production



- Resource setup



- Time and attendance setup



- Inquiries for MES and production costs



- Maintain indirect activities and costs



- Review time and attendance performance

Production Planner



- Inquire into MES process



- Inquire into Production order



- Inquire into resource capacity



- Firm planned orders



- Maintain the master schedule



- Maintain planned orders and actions

Production Supervisor



- Approve indirect activities



- Inquire into MES and Time and attendance



- Maintain job approvals and assignments



- Maintain job calculations and corrections



- Maintain production orders, completion, and preparation



- Maintain time and attendance profiles

Shop Supervisor



- Set up Kanban process



- Maintain inventory adjustments



- Maintain job corrections



- Maintain project journals and transactions



- Maintain time registration



- Access to the Production floor management workspace

Machine Operator



- Execute Kanbans



- Maintain inventory adjustments



- Maintain production order feedback



- Maintain project journals and transactions



- Maintain time registration

Production Floor Management Workspace



Demonstration

- Demonstrate the Production floor management workspace

Planning for Manufacturing Execution




Primary Planning Tools



- Profile Calendar



- Work Planner



- Special Days

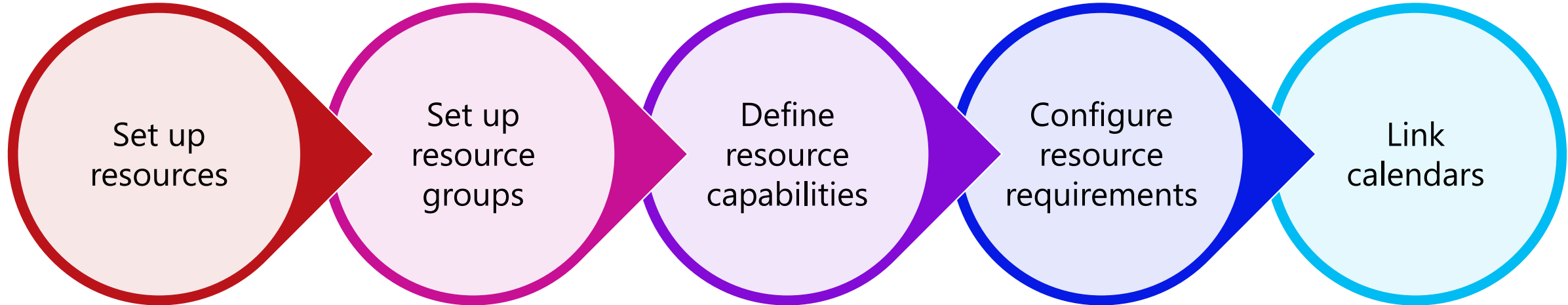


- Planned Absence



- Scheduled Loan

Resource Scheduling



Operations Resources

Resources

Machine

Tool

Location

People

Vendors

Properties

Working time templates

Cost categories

Capabilities

Ability to perform a given activity

Assigned to operations resources

Date effective

Link requirements to the operations

Resource Groups

About

- Create resource groups before resources
- Organize according to business

Example

- Group machines and operators that do the same type of work
- Group based on capacity of machines
- Group based on skills

Master Planning

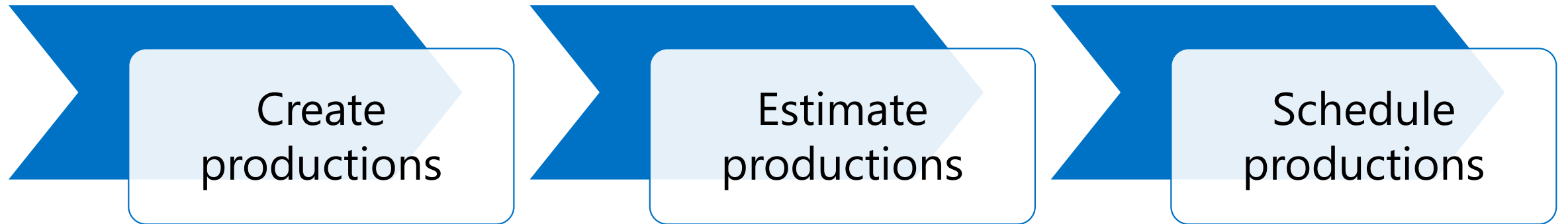


What is required to complete production?

What is currently available?

What is needed?

Production Scheduling Process



Production Scheduling Concepts

Scheduling Options

- Operations vs. Job
- Direction
- Finite vs. Infinite
- Efficiency
- Finite materials
- Resource allocation

Gantt Chart

- Reschedule a resource
- Reschedule a job
- Reschedule an operation
- Reschedule an order
- Cancel scheduling changes

Outsourced Production

- Sub contract production
- Sub contract purchase orders

Production Overview



About Production Feedback

Time is posted to production orders



Update operation and quantity feedback

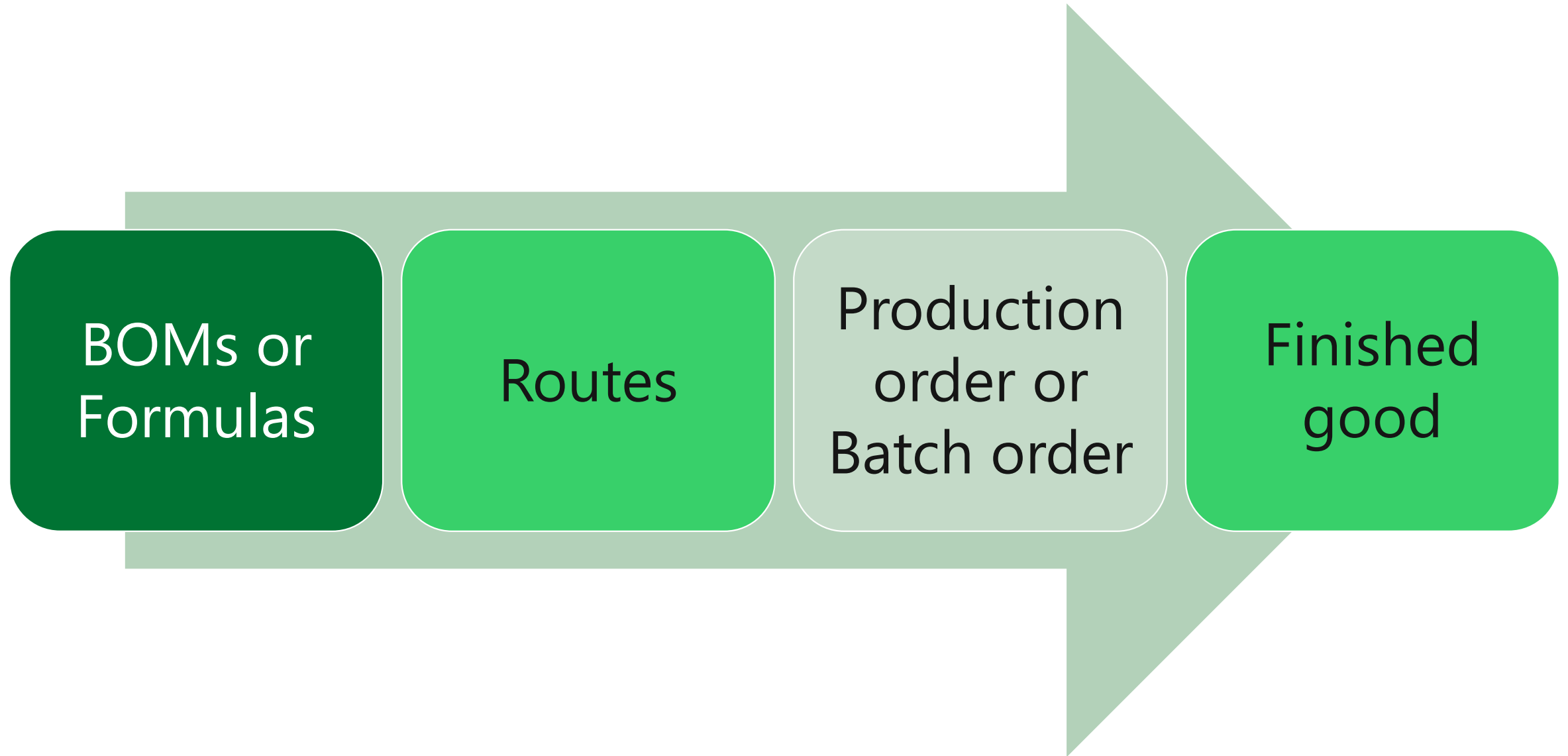


Automatically report as finished



Define when progress must be recorded

Production Order Process



Production Order Features

In-House

Meet sales demand

Supply subassemblies

Meet forecast

Increase safety stock

External

Part provided to vendor

Vendor provides part

Purchase orders

Routes with vendor resources

Statuses

Created

Estimated

Scheduled

Released

Started

Reported as finished

Ended

Production Order Demonstration



Demonstration

- View and create production orders.

Job Card Terminal Demonstration



Demonstration

- Use the job card terminal.

About the Job Card Device



Benefits

- Less information overload
- More intuitive
- Perform traditional tasks
- Jobs are queued in sequence
- Targeted for discrete manufacturers
- Designed for touch
- Can be access from all types of devices

Job Card Device Demonstration



Demonstration

- Use the job card device.

Documents



Demonstration

- Setup document groups.
- Attach files to a job.
- Read files in the job card terminal.