

# Scheduling

GETTING MORE FROM HIGH-MIX MANUFACTURING



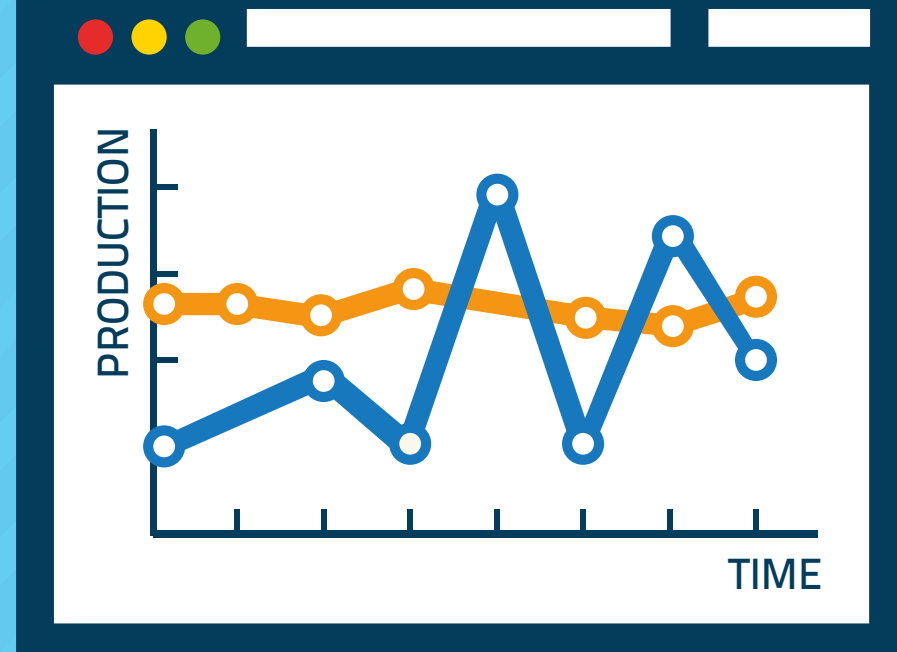
Scheduling determines what each resource should do to fulfill a certain mix of orders in a near-term timeframe.

The goal is to improve on-time delivery, shorten total cycle time, and make better use of resources.

## Why Scheduling is important

Scheduling is a buffer between demand and production.

It enables effective use of plant resources by implementing the production plan driven by customer demand.



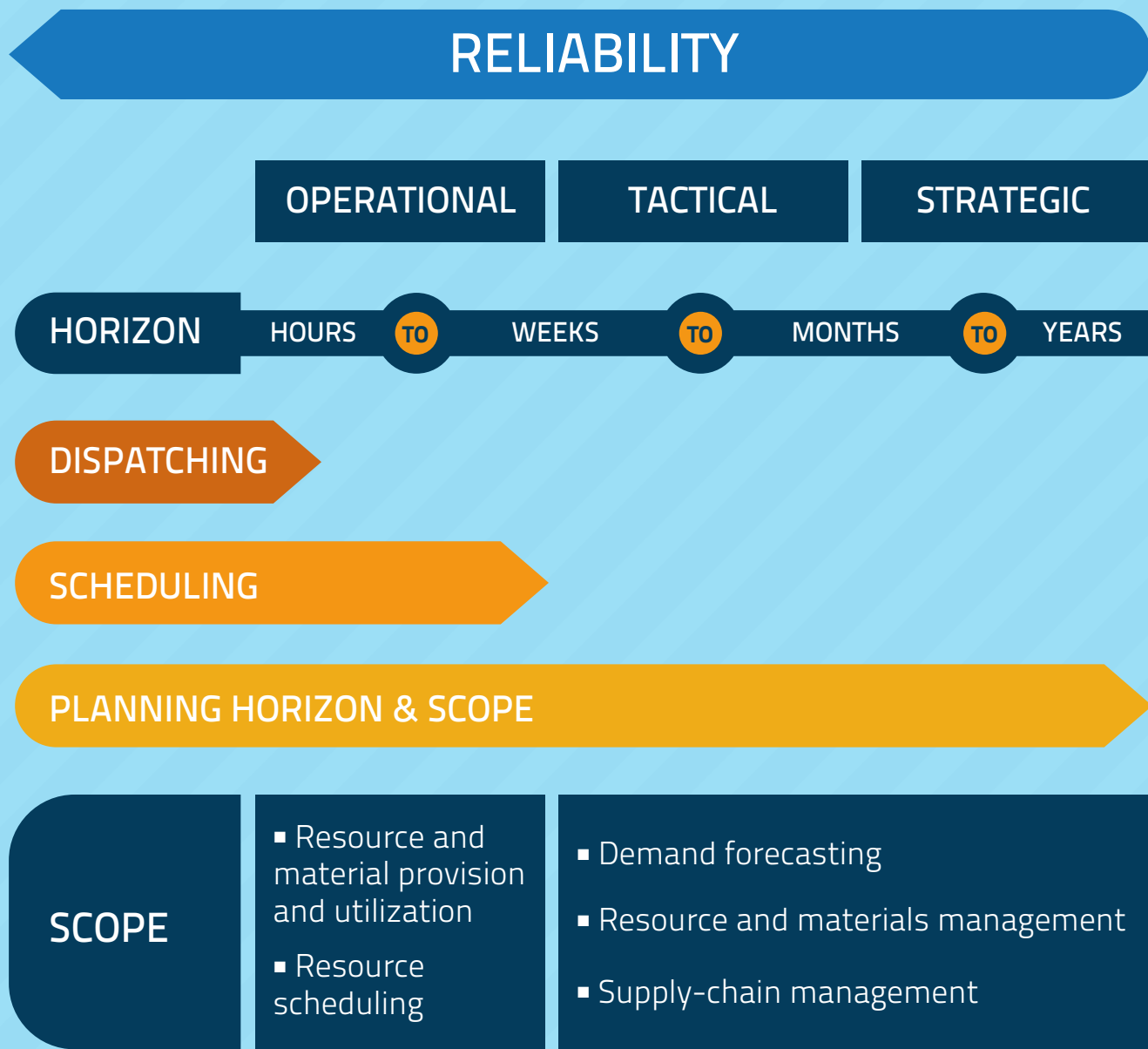
WITH SCHEDULING

WITHOUT SCHEDULING

## Key benefits of Scheduling



## Scheduling vs. Planning vs. Dispatching



Scheduling optimizes operations execution and management for a period of hours to a few weeks.

It does not replace other tools for tactical (mid term) and strategic (long term) planning.

It ensures that the very short-term dispatching of orders is based on optimum loading of each resource at that time.

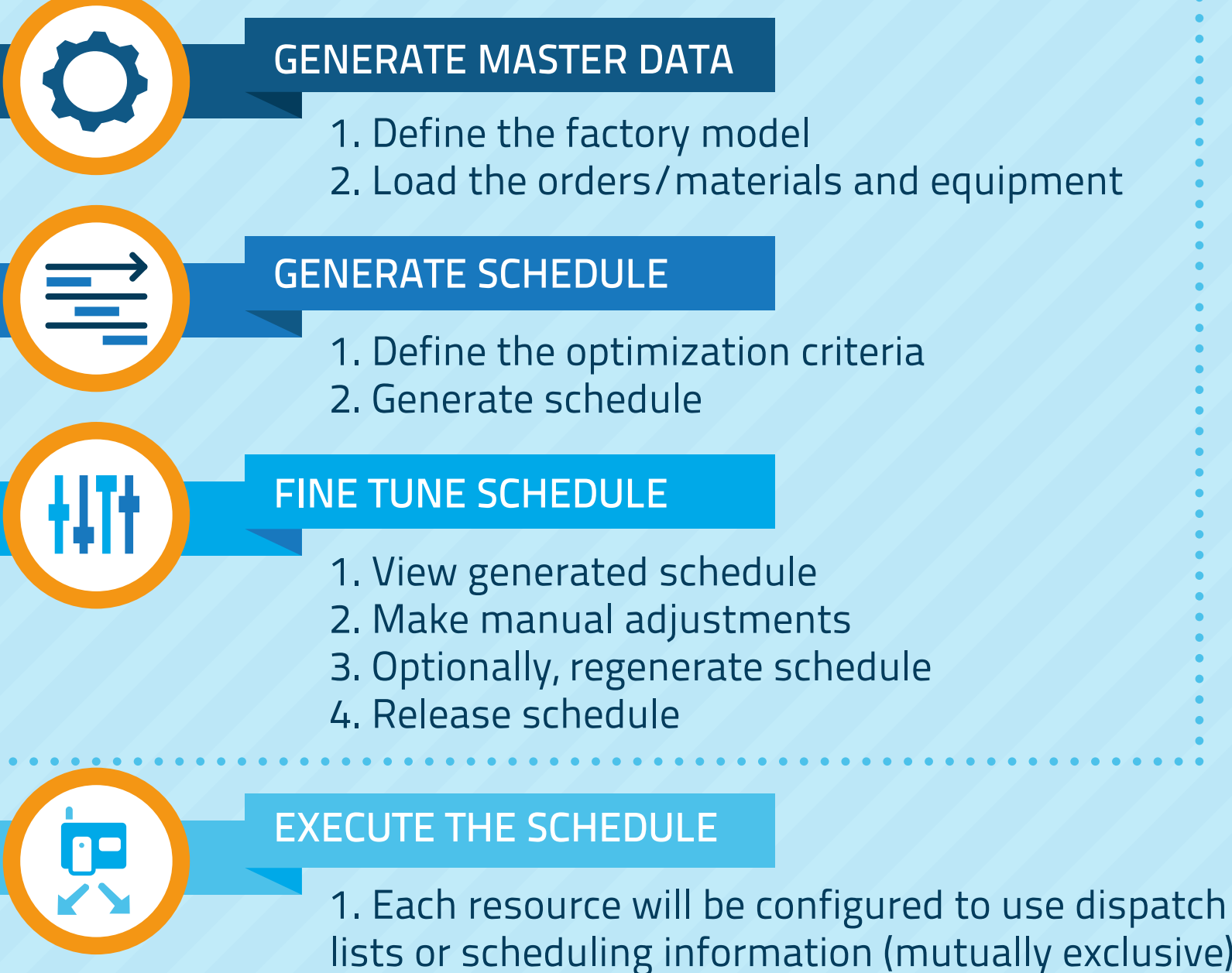
## Why integrate Scheduling into MES?

Scheduling is natively integrated into the cmNavigo MES in order to:

- Avoid Master Data duplication;
- Always consider the real-time status of the shop floor;
- Include all planned shop-floor activities managed by other MES modules;
- Allow using scheduling or dispatching in different areas of the shop floor;
- Eliminate the need to maintain an interface between the MES and scheduling.



## How it works



## The optimization process algorithm

To generate the schedule, cmNavigo uses two-step optimization process:



## Optimization Multi-Criteria

Schedules can be tailored to the specific needs of the facility by applying different weights to optimization criteria.

MINIMIZE SETUP TIMES	2%
MINIMIZE WAITING TIMES	3%
MINIMIZE DELIVERY DELAY TIMES	7%
MAXIMIZE MACHINE LOAD	4%
MINIMIZE BIGGEST DELIVERY DELAY	9%
MINIMIZE DELIVERY DATE DEVIATIONS	10%
MAXIMIZE DELIVERY FULFILLMENT	8%
MINIMIZE NUMBER OF LATE DELIVERIES	11%
MINIMIZE QUANTITY WEIGHTED CYCLE TIME	13%
MINIMIZE PRIORITY AND QUANTITY WEIGHTED CYCLE TIME	18%
MINIMIZE PRIORITY WEIGHTED DELIVERY DELAYS	15%

