tripatra

## Proven Way of Improving

# PROJECT DELIVERY

Project Production Management with the combination of **Lean Construction Approach**


TK0202
TK0204
TK0206
TK0208
TK0210
Vopak Terminal Jakarta

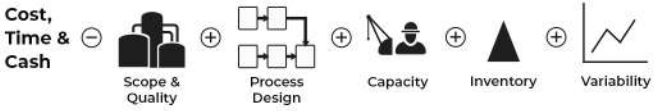
# What is Project Production Management?

## Project Management

Considers scope and quality, scheduling, and resources to maximize earned value and resource productivity.


## Project Production Management

Additionally optimizes capacity, inventory, and variability to manage flow through the system.




## Main Difference

Current project management practices focus on earned value and resource productivitivity, while **Project Production Management (PPM)** also considers **capacity, inventory, and variability**—this **closes the gap in current project management.**

Project Production Management (PPM) is based on **operations science,** like was leveraged to transform manufacturing performance 50 years ago.

**Production flow is the primary metric in PPM,** with productivitiy is a secondary outcome.

# Project Production Management (PPM) can be deployed at any point of the project lifecycle.

| Deployments | Activities | Outcomes |
|---|---|---|
| **Production System Optimization**<br><br>Deployed during execution planning (i.e. pre-mobilization) | **Optimizing the configuration of the production system** to reduce work in process, optimize capacity allocation, and reduce variability.<br>• Mapping standard processes and overall production system<br>• Modelling behavior of the production system under different execution strategies<br>• Optimizing the configuration of the production system | **Schedule/cost compression** embedded in execution strategy via:<br>• Optimized the allocation of capacity<br>• Minimized work in process inventory<br>• Reduced variability<br><br>**Major project risks identified** |
| **Production System Control**<br><br>Deployed at any point during engineering or construction | **Managing and controlling** work in process, capacity, and variability on a daily basis through:<br>• Standard process optimization<br>• Production schedule development/optimization<br>• Production planning including daily capacity allocation<br>• Continuous improvement of the system based on metrics (e.g., commitment reliability) | **Capacity allocation is optimized** on a day-to-day basis<br><br>**Work in process inventory is managed** throughout execution<br><br>**Variability is decreased** throughout the production system. |

# Significant benefits of PPM over conventional project management:

| | Current Project Management | **Project Production Management (PPM)** |
|---|---|---|
| **Standard process mapping** | Typically does not invest in optimizing standar processes | **Standard processes are optimized** which drives value each time the process is executed |
| **Production Scheduling** | Work is loosely aligned with high-level 3-week lookaheads, but generally superintendents do whatever earns the most value | **Granular production schedules are developed** which allow the team to manage flow through the system |
| **Production Planning** | Lack of accountability for achieving targets enables variability | **Daily cadence drives accountability** for achieving targets and reduces variability |
| **Execution** | Targets communicated to the frontline are not aligned with the overall schedule | **Frontline targets tightly aligned with the overall production schedule** |
| **Continuous Improvement** | Continuous improvement is unstructured and focused on increasing resource productivity | **Structured continuous improvement process based on new factors** (e.g., commitment reliability) is focused on driving variability out of the system |

# Production Management enables proactive management of progress and early detection and mitigation of bottlenecks

## Planning and Execution

### Schedule

Classic planning tool that provides timing of all necessary tasks

### Weekly Task Tracking

More detailed version of the schedule, with required tasks for the week broken down by day, responsible party, and urgency

### Root Cause Analysis

Analysis of main sources of issues or delays during the design process, preventing schedule adherence or commitment reliability

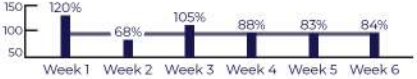

## Performance Metrics

### Schedule Adherence

Tracks what activities have been performed vs planned: Indicates whether the right activities are being actioned


### Commitment Reliability

Measures the predictability of plans made in the field; Tracks percentage of weekly (or daily) completed actions over commited actions




### Progress

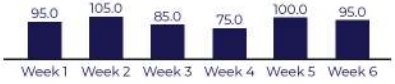
Measures the percentage of the work completed per week, in terms of 'planned' and 'estimated' work


### Variability Tracking

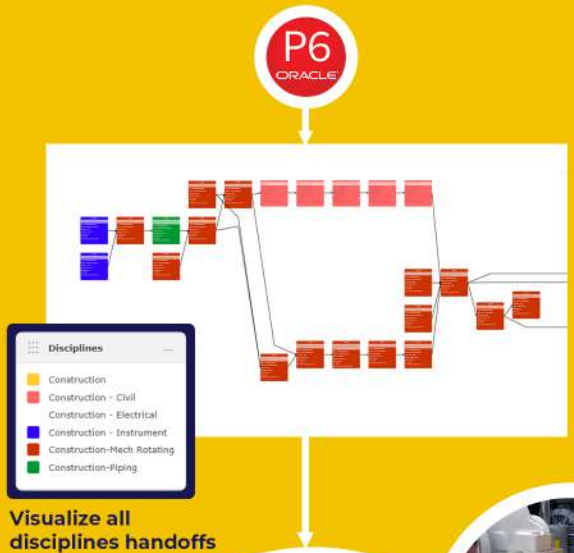
Measures the variability in terms of # drawings finished per week, against an expected average target define x


### Productivity

Measures efficiency of the team in terms of how many hours it takes to deliver vs. the expected number of hours




# Connect the Master Schedule to the Field




**Visualize all disciplines handoffs**

# Benefits We Got by the Implementation of PPM

## Engineering Case

| Project Budget | PPM | Gap |
|---|---|---|
| Process 1452 | Process 744 | Process 708 (+49%) |
| Process Safety 709 | Process Safety 613 | Process Safety 96 (+14%) |
| Structure 6691 | Structure 5389 | Structure 1302 (+19%) |

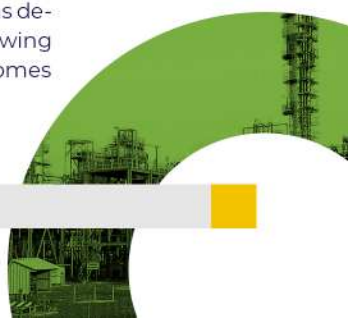
**49%**
**Reduction**
of manhours

## Construction Case

**Work of Heater and Ducting Package:**

- Enhance real-time communication and streamline integration among subcontractors, contractors, project owner, and project control.
- Before the introduction of PPM, the forecast completion was delayed by 30 days, but following its implementation, it becomes on time.

**30 days**
**Construction Acceleration**



# Let's join the movement with us!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