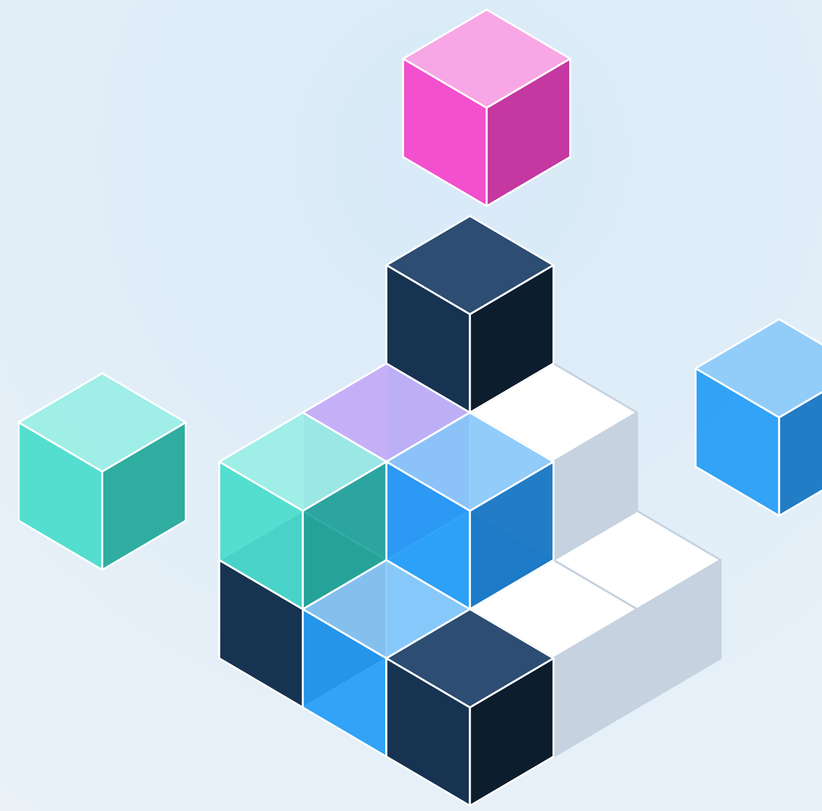
OPERATIONAL EXCELLENCE

The OEE Loss Tree



Overall equipment effectiveness (OEE) shows how much of planned production time is truly productive. The loss tree splits the gap into three factors and six big losses.

01 THE CORE MODEL

THREE FACTORS · SIX BIG LOSSES

OEE = Availability × Performance × Quality
Share of planned time that produces good parts

- **Availability loss** — Planned time not running
  - Breakdowns
  - Setups and adjustments
- **Performance loss** — Running below ideal speed
  - Small stops and idling
  - Reduced speed
- **Quality loss** — Parts that are not good
  - Process defects and rework
  - Start-up rejects

Availability

Run time ÷ planned production time. Lost to breakdowns and setups.

Performance

(Ideal cycle time × total count) ÷ run time. Lost to stops and slow running.

Quality

Good count ÷ total count. Lost to defects and start-up rejects.

02 USING OEE WELL

OEE is a loss map for one machine, not a score to compare plants.

SCORE ——— LOSS MAP

OEE AS A SCORE

- − Plants compared on different definitions
- − Planned time quietly redefined
- − Nobody knows which loss to attack

OEE AS A LOSS MAP

- + Losses ranked, biggest attacked first
- + One definition, stable over time
- + Linked to daily problem solving

03 WORKED EXAMPLE

INJECTION MOLDING MACHINE · ONE SHIFT · ILLUSTRATIVE FIGURES

AVAILABILITY		PERFORMANCE		QUALITY		OEE
87.5 %	×	90 %	×	98 %	=	77 %
420 of 480 min run		actual vs ideal rate		good ÷ total parts		0.875 × 0.90 × 0.98

04 MANAGEMENT TAKEAWAYS

01 — Fix one definition
Agree planned time and ideal cycle time once and keep them stable.

02 — Attack the biggest loss
Use the tree to pick one loss per machine and solve it.

03 — Watch the trend
A machine improving week by week matters more than its absolute score.

05 COMMON MISTAKE

LIMITATION

A slow "ideal" cycle time

Setting a conservative ideal cycle time makes performance look high and hides the speed loss.