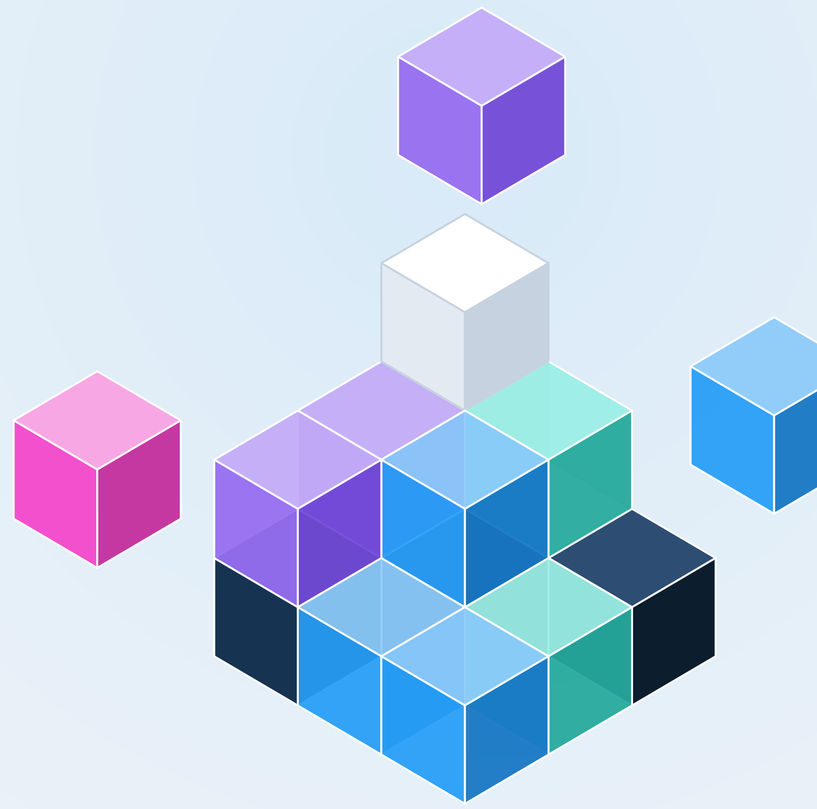
OPERATIONAL EXCELLENCE

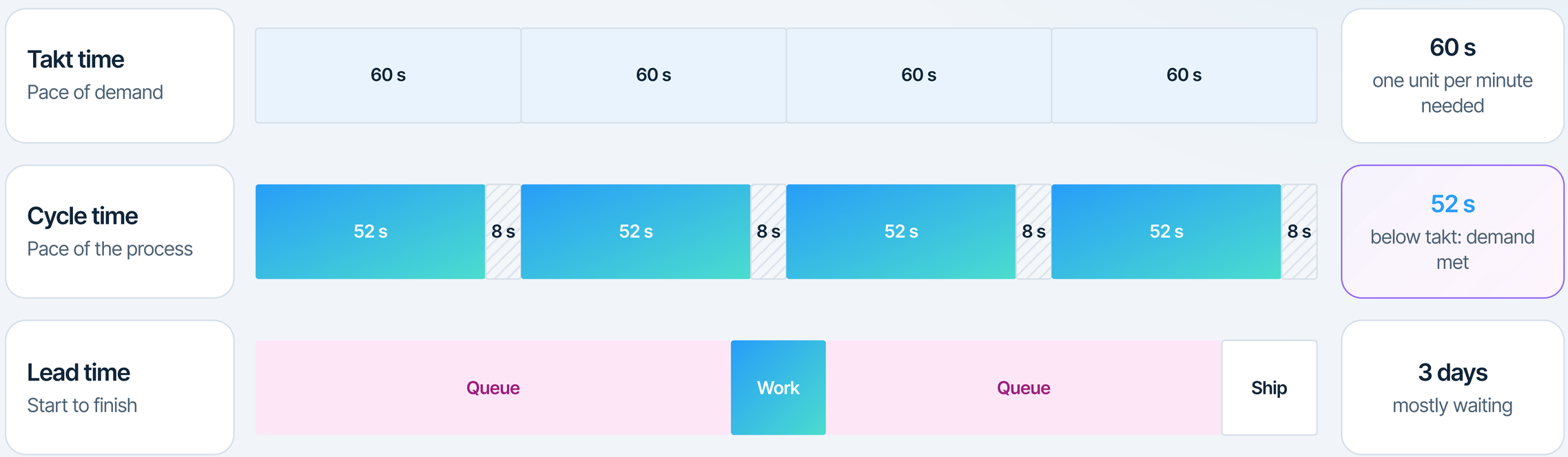
Takt Time vs Cycle Time vs Lead Time

Takt time is the pace the customer demands, cycle time is the pace a process actually achieves and lead time is how long one unit spends in the system from start to finish.



01 THE CORE MODEL

THREE MEASURES · THREE QUESTIONS



Takt time

Available time ÷ customer demand. How often the customer needs one unit.

Cycle time

How often a process actually completes one unit, measured at the process.

Lead time

Total time one unit spends from release to delivery, waiting included.

02 WHAT EACH TELLS YOU

Cycle time must stay below takt; lead time reveals the waiting.

RATE — TIME IN SYSTEM

TAKT AND CYCLE TIME

- Compare the process rate with demand
- Cycle above takt means overtime or misses
- Used for line design and balancing

LEAD TIME

- What the customer actually experiences
- Driven mainly by queues and batches
- Cut by reducing WIP, not by working faster

03 WORKED EXAMPLE

VALVE ASSEMBLY LINE · ILLUSTRATIVE FIGURES

TAKT TIME
60 s
27,000 s ÷ 450 units

CYCLE TIME
52 s
slowest station

LEAD TIME
3 days
WIP ÷ output rate

04 MANAGEMENT TAKEAWAYS

01
Set takt from demand
Recalculate it when demand or shift patterns change.

02
Watch the slowest step
The longest cycle time sets the output of the whole line.

03
Shrink lead time via WIP
Fewer parts waiting shortens lead time more than faster machines.

05 COMMON MISTAKE

LIMITATION
Using the terms as synonyms
Mixing them up leads to wrong staffing and wrong delivery promises. Define each one on the board.