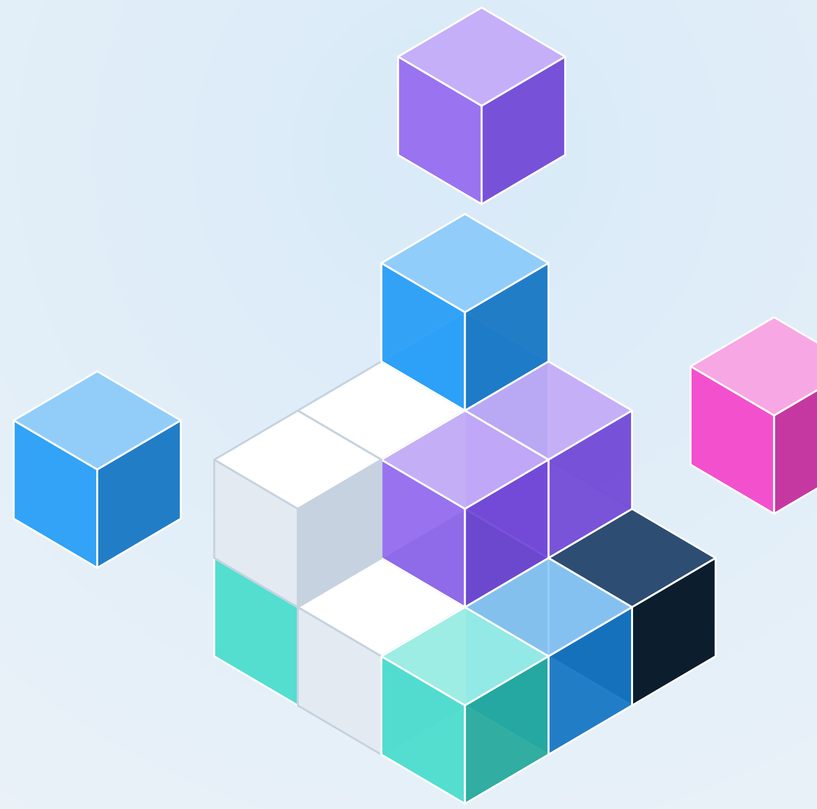
PRODUCTION & MANUFACTURING

Heijunka: Production Leveling

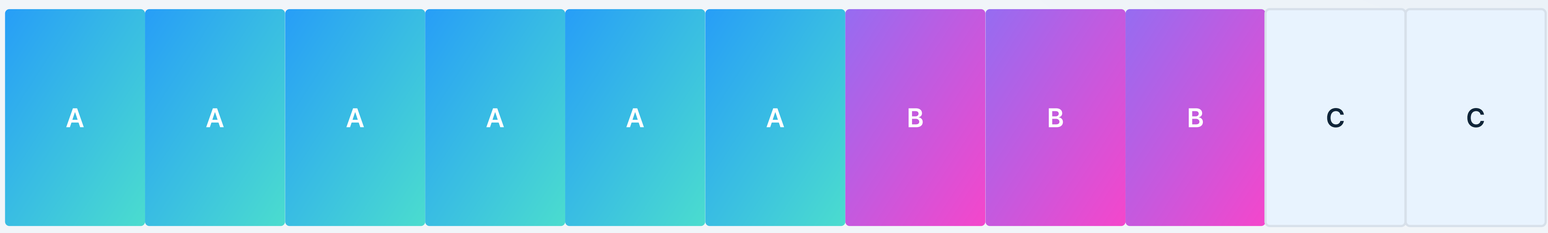
Heijunka levels production by volume and by mix, so that upstream processes see a steady, predictable demand instead of large, irregular batches.



01 THE CORE MODEL

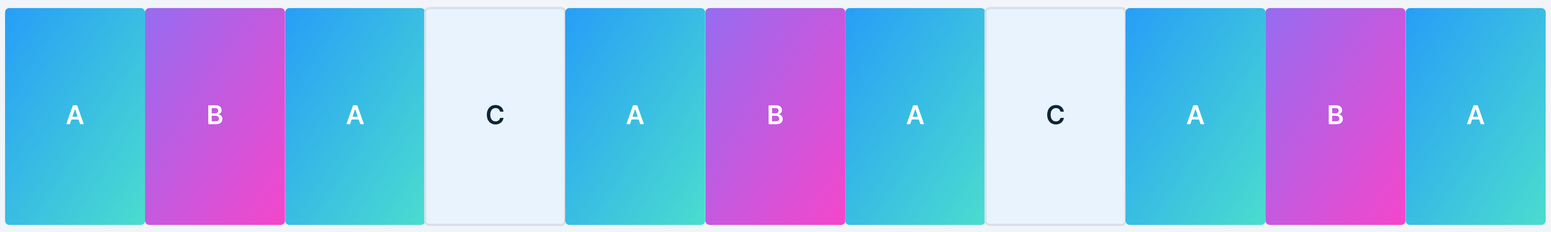
SEQUENCE COMPARISON · SAME DEMAND, SAME SHIFT

Batched
Long runs by product



Uneven pull
C waits until the end

Leveled
Repeating mixed pattern



Even pull
every product, all shift

- **Volume leveling**
  The same total quantity every day instead of peaks and troughs.
- **Mix leveling**
  Products interleaved in small repeating patterns, not long runs.
- **Heijunka box**
  A board with one slot per time interval holding the kanban for that slot.

02 THE TRADEOFF

Leveling needs short changeovers, or the mix costs too much capacity.

BIG BATCHES — LEVELED MIX

BATCHING BY PRODUCT

- \+ Few changeovers
- − Upstream sees large, irregular pulls
- − Finished goods stock covers the gaps

LEVELED PRODUCTION

- \+ Steady, predictable load upstream
- \+ Lower stock of every product
- − Requires quick changeovers

03 WORKED EXAMPLE

SHIFT DEMAND OF 11 UNITS ACROSS THREE PRODUCTS · ILLUSTRATIVE

DEMAND
A 6 · B 3 · C 2
per shift

→

PATTERN
A B A C A B …
repeats through the shift

→

HEIJUNKA BOX
One kanban per slot
pitch of about 40 min

→

EFFECT
Even pull upstream
component use smoothed

04 MANAGEMENT TAKEAWAYS

01
Level volume before mix
Stabilize the daily total first, then interleave products.

02
Shorten changeovers in parallel
SMED is what makes a fine-grained mix affordable.

03
Protect the pattern
Rush orders that break the sequence undo leveling for everyone upstream.

05 COMMON MISTAKE

LIMITATION
Leveling an unreliable forecast
Heijunka smooths real demand. Leveling a forecast nobody trusts just moves the chaos into finished goods.