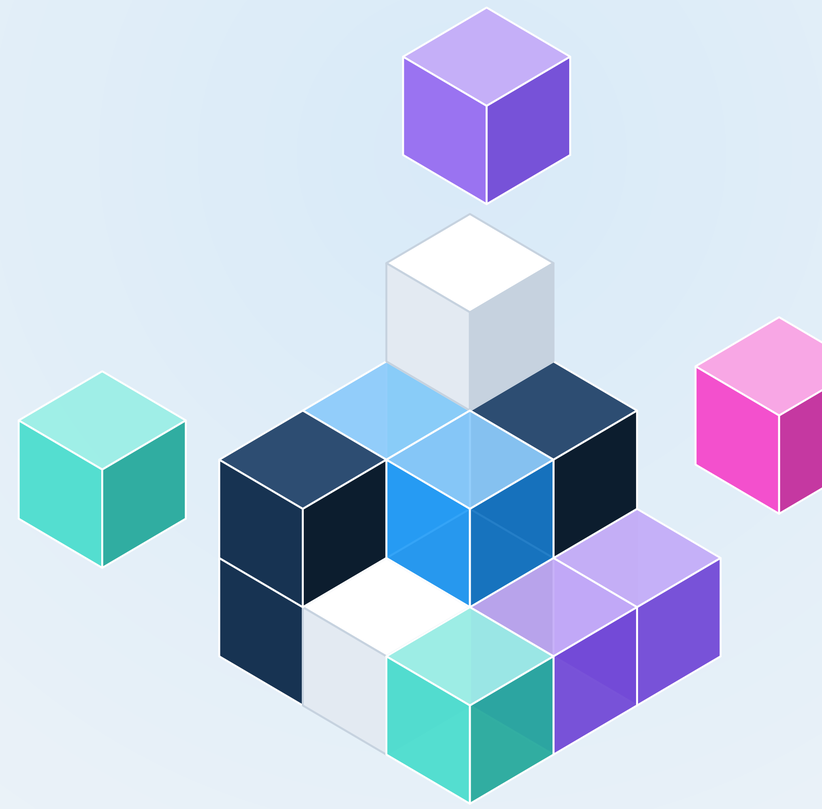
DIGITAL OPERATIONS

ERP vs MES vs WMS



ERP plans and records the business, MES runs and documents production on the shop floor, and WMS directs storage and movement in the warehouse. Each has its own role and data.

01 THE CORE MODEL

THREE-LAYER COMPARISON · ROLES AND DATA EXCHANGE

ASPECT	ERP	MES	WMS
Focus	Business planning and finance	Production execution	Warehouse operations
Time horizon	Weeks to months	Minutes to shifts	Minutes to days
Key data	Orders, BOMs, costs	Work orders, machine and quality data	Locations, stock, picks
Exchange	Sends orders, receives confirmations	Reports output and consumption	Reports receipts and shipments

ERP

Plans and records the business: what, how much, when and at what cost.

MES

Executes and documents production on the shop floor, close to real time.

WMS

Directs storage, picking and shipping down to bin and handling unit.

02 DRAWING THE LINE

Overlaps are normal; decide which system leads for each function.

OVERLAP — CLEAR ROLES

UNCLEAR BOUNDARIES

- Stock tracked in two systems
- Schedules changed in ERP and MES
- Disputes over which number is right

CLEAR BOUNDARIES

+ One leading system per function
+ Defined messages between them
+ The shop floor works in one system

03 WORKED EXAMPLE

ONE PRODUCTION ORDER, END TO END

ERP
Order released
with BOM and routing

→

WMS
Materials staged
picked to the line

→

MES
Order executed
quantities, scrap, times

→

ERP
Order confirmed
costs and stock updated

04 MANAGEMENT TAKEAWAYS

01
Write a responsibility map
List each function and which system leads it.

02
Standardize the messages
Define which data passes when, for example along ISA-95.

03
Avoid double booking
Post each stock or status change once, in one place.

05 COMMON MISTAKE

LIMITATION
Using ERP as an MES
ERP transactions are too slow and coarse for real-time shop-floor control.