Buy vs Build: MES Decision Guide

A Strategic Toolkit for Manufacturing Teams
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# Introduction

Deciding whether to buy or build a Manufacturing Execution System (MES) is one of the most critical steps in any digital transformation journey. This guide is based on real-world implementation experience across factories where processes were chaotic, documentation was missing, and vendor decisions had long-term consequences.

This guide is designed to help you navigate that decision with clarity — by breaking down trade-offs, prompting critical questions, and offering relatable examples.

# Decision Matrix: Buy vs Build

| Criteria | Buy Option | Build Option |
| --- | --- | --- |
| Time to Deploy | Fast — implementation can start quickly | Slow — requires dev and validation time |
| Customizability | Limited — you adapt to the system | High — fully tailored to your needs |
| Short-Term Cost | Lower — pay licensing or package fee | Higher — dev cost and time upfront |
| Long-Term Cost | Higher — recurring fees and upgrades | Flexible — may save cost long term |
| In-House Capability Needed | Not required — vendor handles build | Required — need internal team or partners |
| Vendor Lock-in Risk | High — you rely on vendor roadmap | Low — you define and own roadmap |
| Scalability Across Sites | Good — vendors may support multi-site setup | Depends — scalable if well-architected |
| Integration with Existing Systems | Often built-in or supported by vendor | Custom — can integrate as needed |
| Ownership & Control | Low — limited access to backend | High — you fully control the system |
| Support & Maintenance Responsibility | Vendor handles updates, fixes | You’re responsible for all upkeep |

# Self-Assessment Checklist

Use the following questions to evaluate your factory’s readiness and suitability for either path. Answering 'Yes' or 'No' will help clarify which direction may suit your current situation.

☐ Do you need to deploy the MES solution in less than 6 months?

☐ Are your manufacturing processes mostly standard and not highly unique?

☐ Do you lack a dedicated software development team internally?

☐ Is your IT team unfamiliar with MES architecture and system integration?

☐ Is there a risk of losing key developers or engineers in the near term?

☐ Is budget approval easier for off-the-shelf solutions than internal development?

☐ Do you require frequent upgrades, compliance updates, or certifications?

☐ Is your company open to vendor dependency in the long run?

☐ Are multiple sites involved that need consistent implementation?

☐ Would a hybrid option (buy core, build extensions) be acceptable?

# Factory Scenarios: What Others Might Do

## Factory A: Urgent Timeline, No Dev Team

A mid-size EMS company needed MES up and running within 4 months. They had no in-house IT developers and limited process documentation. They chose a commercial MES with quick deployment and paid extra for customization.

## Factory B: Unique Process, Skilled Developers

A precision assembly plant had highly customized workflows and a capable in-house software team. They built their MES to ensure full process alignment and to integrate directly with their homegrown ERP.

## Factory C: Hybrid Route

A multinational site bought a basic MES for traceability but built a middleware layer for machine data capture and analytics. This gave them control without reinventing everything from scratch.

# Quick Reference Cheat Sheet

## ✅ When to BUY

• You need rapid deployment (< 6 months).

• Your factory operations are standard or similar to industry templates.

• You lack internal IT capability or MES experience.

• Your management prefers to work with a known vendor.

• You can accept vendor lock-in and long-term licensing fees.

## ✅ When to BUILD

• You have unique workflows that commercial MES cannot support well.

• You have access to a skilled and stable internal dev team.

• You want full control over feature roadmap and data architecture.

• You're building a long-term digital strategy with cross-system integration.

• You're ready to take ownership of maintenance and support.

## ✅ When to Consider HYBRID

• You want to buy a core MES but build your own extensions or dashboards.

• You plan to integrate MES with in-house tools like WMS, ERP, or IoT platforms.

• You want quick wins without giving up long-term flexibility.

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