

Beyond Automation: The Roadmap to a Self-Learning, Customizable WMS Brain

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Executive Summary

Automation in warehouse operations has come a long way — but the next leap is here. It's not just about automating tasks anymore. It's about embedding intelligence that adapts, learns, and evolves with your business.

Maya is moving beyond static rule execution and into the realm of self-learning, scenario-aware intelligence. This whitepaper outlines our vision for the “brain outside the brain” — a modular, decoupled system that powers rapid customization, continuous improvement, and proactive support in WMS environments.

The Limits of Traditional Automation

Most automation in WMS is rule-bound and pre-scripted. While it brings efficiency, it lacks adaptability:

- Rule changes require expert intervention
- Onboarding new processes takes weeks
- Exceptions must be manually defined

This model breaks down when faced with:

- Frequent change in SKUs, carriers, or workflows
- Custom processes per customer or region
- Repetitive failure scenarios with unclear causes

Maya is designed to go beyond these constraints

Enter the Brain Outside the Brain

We're building a system where reasoning (the LLM) is decoupled from memory (domain knowledge). This enables:

- **Rapid Customization:** Onboarding new rules, logic, and scenarios in under a week
- **Scenario Library:** Real-world failure cases tagged, retained, and reused
- **Knowledge Graphs:** Structured mapping of warehouse logic and workflows
- **Reinforced Learning:** Continuous optimization based on feedback and patterns

Maya doesn't just automate responses — it learns from the past, understands the present, and prepares for what's next.

How It Works: Maya's Modular Intelligence

Maya's architecture is being expanded to include:

- **Core LLM Processor:** Handles reasoning, context understanding, and logic synthesis
- **Memory Layer:**
 - **Scenario Library:** A growing database of resolved, failed, and edge-case scenarios
 - **Knowledge Graphs:** Visual and structured representation of rules, dependencies, and processes
 - **Reinforcement Engine:** Tracks feedback, correctness, and continuous improvement metrics

Together, these enable Maya to operate with both precision and adaptability.

Customization in Days, Not Weeks

For enterprises managing dozens of workflows across sites and customers, agility is key. With Maya:

- New validations or exceptions can be defined with natural language prompts
- Rule changes are reflected instantly across the system
- AI-driven authoring tools generate documentation and update mappings

Your WMS support evolves at the speed of your operations.

Real-World Gains From Self-Learning Intelligence

Early prototypes and pilots of the self-learning Maya engine have demonstrated:

- 5–7X faster onboarding of new scenarios
- Consistent learning from escalated tickets and human-in-the-loop feedback
- Reduced downtime from recurring exceptions
- Proactive identification of rule conflicts before they cause failures

This isn't just efficiency — it's resilience, driven by intelligence.

A Future-Proof Foundation

We've designed Maya to align with the future of enterprise systems:

- Modular intelligence that grows with your business
- Lightweight, cloud-native deployment models
- Secure, explainable AI architecture with no data leakage
- Interfaces that support internal teams, partners, and third-party systems

Maya becomes not just a support solution — but a learning system embedded in your enterprise stack.

Conclusion

The WMS of the future isn't just automated — it's intelligent, adaptive, and self-evolving. Maya is leading that shift.

By separating memory from processing, by leveraging real-world feedback, and by making custom logic as easy as a conversation, Maya sets a new benchmark for what AI in supply chain support can achieve.

We're building more than a product. We're building a partner that learns with you.

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