

OMS Buyer's Guide Part 4:

The Agentic Advantage - How AI Agents are Revolutionizing Order Management

Executive Summary

Traditional Order Management Systems (OMS) often struggle to meet rising customer expectations and overcome the complexities of omnichannel fulfillment. This guide introduces a revolutionary shift, as Agentic AI and AI agents transform order management, optimize operations, and enhance customer experiences for businesses.

Co-written by KIBO, Grid Dynamics, and Google, this guide demonstrates how AI Agents, leveraging advanced models like Gemini for Google Cloud, deliver unparalleled efficiency, real-time adaptability, and proactive problem-solving within OMS. We will explore the strategic benefits of this transition, illustrating how a specialized Agentic Commerce platform, combined with Google's core AI and cloud infrastructure, empowers enterprises to develop an intelligent and future-proof order management strategy.

Introduction: The Evolving Landscape of Order Management

Modern consumers navigate a non-linear journey, demanding seamless flexibility to browse, purchase, receive, and return products across all channels, including online, in-store, mobile, and social. This “buy anywhere, fulfill anywhere” expectation has pushed traditional, monolithic Order Management Systems to their breaking point. These rigid structures often lead to siloed inventory data, inefficient fulfillment processes, and disjointed customer experiences, becoming significant roadblocks to growth and profitability.

The pressure to optimize the bottom line intensifies as customer expectations constantly shift. This imperative for agility and responsiveness has paved the way for innovative solutions. We are now witnessing the emergence of **Agentic AI**, a promising new frontier in enterprise automation that is reshaping how organizations streamline decision-making and manage complex processes through autonomous reasoning and dynamic orchestration.

This guide examines the transformative impact of Agentic AI and Agentic Commerce, particularly through the use of intelligent AI Agents, on core Order Management functions. It presents a unified, industry-specific system engineered to reduce complexity and foster significant growth. Grasping this paradigm shift is crucial for making informed decisions about your technology stack and securing a distinct competitive advantage.



Interactive

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UNDERSTANDING AGENTIC AI: THE NEXT EVOLUTION IN ENTERPRISE AUTOMATION

Agentic AI represents a fundamental paradigm shift beyond traditional automation and even early forms of AI. Unlike systems that merely respond to queries or follow fixed rules, Agentic AI introduces “agents” capable of taking initiative and adapting in real-time. These intelligent entities understand objectives, interact with tools, learn from outcomes, and dynamically adjust their approach to achieve high-level goals. It’s akin to delegating complex tasks to a qualified team member who interprets instructions, takes initiative, and coordinates every step.

The Agentic AI market is growing rapidly and is projected to reach \$47.1 billion by 2030, underscoring its transformative potential across various industries.

Core Value Propositions of Agentic AI for Enterprises:

Agentic AI offers significant advantages for enterprises by excelling in areas where traditional systems fall short:

- **Complex Multi-Step Processes:** Unlike rigid, rule-based systems that require constant upkeep, Agentic AI employs dynamic planning and orchestration for multi-step tasks. It adapts and learns from each outcome, providing enhanced flexibility and resilience in the face of environmental shifts.
- **Knowledge-Intensive Tasks:** Agentic knowledge assistants are adept at in-depth research, use multi-step reasoning, and can integrate data from multiple sources across organizational silos. They analyze vast amounts of information to determine subsequent steps, such as identifying additional data requirements or clarifying user intent.
- **Operational Decision-Making:** Moving beyond basic threshold alerts, Agentic AI analyzes problems, gathers relevant information, and applies advanced reasoning. This allows it to determine when human intervention is essential or when an alternative solution is more suitable.



Key Innovation Drivers Behind Agentic AI:

- 1. Inference-Time Reasoning:** This advancement enables AI to dynamically analyze complex problems and generate solutions without constant retraining. It mimics human thought processes, combining fast pattern matching with deliberate step-by-step reasoning, allowing automation of workflows that demand strategic decision-making.
- 2. Multi-Agent Architectures:** Agentic AI establishes a unified framework where AI agents, human users, and software systems collaborate dynamically within a single, event-driven environment. This facilitates natural communication among agents, task coordination, API invocation, adaptation to real-time events, and escalation of complex decisions to human experts when necessary.
- 3. Enterprise-Grade Tool Integration:** A robust framework empowers AI agents to discover, select, and orchestrate software tools based on business context. By merging structured API access with natural language-driven function calls, AI functions as an intelligent middleware, translating high-level business objectives into precise, secure, and compliant system interactions.

Together, these groundbreaking innovations form the foundation of Agentic AI systems, supporting autonomous reasoning, collaborative workflows, and secure interactions with enterprise tools.

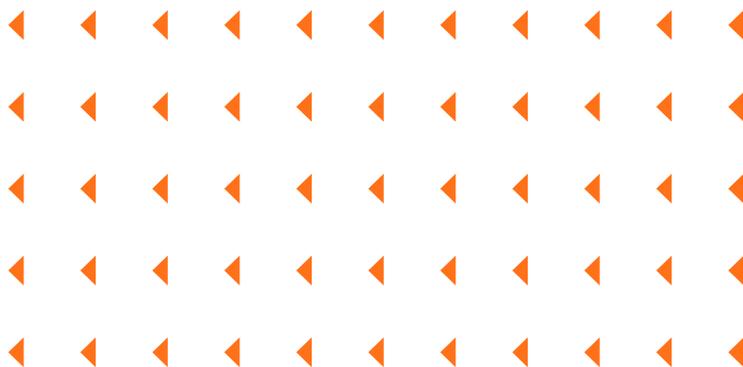


AGENTIC COMMERCE: REVOLUTIONIZING ORDER MANAGEMENT WITH SPECIALIZED AGENTS

Agentic Commerce represents a paradigm shift in how businesses approach digital operations. Moving beyond traditional automation, it introduces intelligent, autonomous systems that understand and act on your business needs. A robust Agentic Commerce solution leverages a network of composable, API-driven AI agents, often built on advanced AI foundations like Google Cloud's Gemini, to optimize all aspects of commerce operations, including order management, into a unified, industry-specific system.

Key Benefits of Agentic Commerce Solutions

- **Improved Customer Experience:** Enhanced customer engagement through AI agents that understand preferences and behavior, delivering tailored recommendations and interactions. Provides instant, real-time support, addressing inquiries and resolving issues efficiently. Enables in-chat checkout for fast, easy purchasing.
- **Streamlined Operations:** Automated task execution allows configuration of complex tasks using natural language, freeing up human teams for strategic initiatives. Optimizes inventory management by analyzing data to predict demand, manage stock levels, and reduce inefficiencies.
- **Data-Driven Insights:** Gain deep, actionable insights into business performance with AI-powered analysis and reporting. Enables proactive problem-solving by identifying and addressing potential issues before they impact the bottom line.



Key Agentic Capabilities for Order Management: What to Look For

A comprehensive Agentic Commerce platform features a network of distinct AI agents, each designed to handle specific tasks and work collaboratively to achieve business goals, particularly within the OMS domain. When evaluating agentic solutions, look for capabilities such as:



Intelligent Order Routing: Intelligently source and route orders across various fulfillment locations (warehouses, stores, dropshippers) based on predefined rules, real-time inventory, and cost optimization.



Automated Reverse Logistics: Streamline and facilitate the entire returns and refunds process, reducing manual effort and improving customer satisfaction.



Predictive Forecasting: Analyze historical data, market trends, and real-time signals to provide accurate inventory and demand insights, enabling proactive stock management and order planning.



AI-Powered Customer Success: Empower customer service representatives (CSRs) and even customers directly to perform order lookups, ask questions, edit orders, manage order changes and cancellations, and provide “Where Is My Order?” (WISMO) tracking information, all within a conversational interface.



Actionable Analytics Agents: Generate detailed insights and reports on order performance, fulfillment efficiency, customer behavior, and more, providing actionable data for strategic decision-making.



Developer Support Agents: Surface user and API documentation and generate code, accelerating customization and integration efforts for developers working with the OMS.

Characteristics of a Leading Agentic Commerce Solution:

- **Commerce-First, Results-Focused:** Look for solutions that are built specifically for commerce, delivering revenue-driven outcomes with a dedicated roadmap of industry-specific use cases.
- **Instant Deployment, Immediate Impact:** Prioritize solutions offering pre-trained agents for rapid deployment without complex coding, training, or integrations.
- **Composable & API-Driven:** Ensure the solution is integrated seamlessly via API, offering unmatched flexibility and ensuring a unified, industry-specific system.



THE GOOGLE ADVANTAGE: POWERING AGENTIC OMS WITH ENTERPRISE-GRADE AI & CLOUD

The transformative power of Agentic Commerce solutions is fundamentally underpinned by the robust and innovative capabilities of Google Cloud, and their commitment to AI, infrastructure, and developer tools provides the critical foundation for intelligent order management.



The AI Engine

Leading Agentic commerce solutions leverage advanced AI foundations, such as Gemini for Google Cloud. Gemini's powerful features deliver superior AI-driven experiences, offering:

- **Unmatched Long Context Understanding:** Gemini's extended context window ensures continuous, intelligent conversations, allowing AI agents to maintain deep understanding across complex B2B and B2C purchasing journeys and detailed customer service interactions. This reduces hallucinations and provides accurate, relevant responses.
- **Enterprise Ready:** Google Cloud provides comprehensive trust and security controls for generative AI in business contexts, ensuring that Agentic OMS deployments are secure, compliant, and reliable.
- **Holistic Intelligence:** Gemini's multimodal design processes diverse data types, including text, images, video, voice, and unstructured data. This enables AI agents to engage in richer interactions and gain a more comprehensive understanding across various OMS workflows.
- **Real-time Accuracy:** When properly integrated, Gemini provides access to real-time signals and enterprise data.

Google Cloud Infrastructure: The Scalable Foundation

Google Cloud's AI stack, featuring planet-scale infrastructure and custom-built chips, offers a robust and optimized environment. This ensures the scalability, resilience, and sustainability needed for global deployment and security compliance of Agentic OMS solutions. Businesses can confidently manage peak order volumes and intricate fulfillment logic, free from performance constraints.

Data Governance, Indemnity, and Privacy

Google Cloud ensures enterprise readiness with robust data governance, indemnity, and privacy support. This is critical for businesses dealing with sensitive order and customer data, providing peace of mind that AI-driven operations adhere to the highest standards of data protection and regulatory compliance.

By leveraging advanced AI models and enterprise-grade cloud infrastructure, a powerful, secure, and intelligent Agentic Commerce solution can empower businesses to thrive in the age of AI-driven commerce and revolutionize their order management capabilities.

ORCHESTRATING THE AGENTIC OMS TRANSFORMATION

Recognizing the immense potential of Agentic AI, particularly within enterprise Order Management Systems, requires a strategic vision and profound technical expertise.

Strategic Pillars for Agentic AI Adoption in OMS:

A strategic approach to successfully integrate Agentic AI into your OMS involves focusing on four foundational pillars:

- **Technology & Infrastructure Readiness:** Modernizing IT ecosystems to support event-driven, multi-agent architectures. This includes adopting cloud-native environments and integrating AI with enterprise systems for real-time decision-making in OMS.

- **Data Foundation & Access Patterns:** Ensuring enterprise data readiness through structured documentation, real-time access patterns, and comprehensive governance frameworks. This is crucial for AI agents to effectively access and act upon enterprise knowledge related to orders, inventory, and customers.
- **AI Governance & Risk Management:** Developing a structured governance model to maintain compliance, security, and ethical decision-making. Additionally, it's important to implement AI audit trails, bias detection tools, and explainability frameworks, while maintaining human-in-the-loop oversight to mitigate risks inherent in autonomous OMS operations.
- **Workforce & Process Evolution:** Recognizing that the success of Agentic AI hinges on effective human-AI collaboration. Reskilling employees to work alongside AI, redesigning workflows to maximize AI augmentation, and setting clear escalation paths for critical OMS decisions.

By partnering with system integrators and service providers, businesses gain a trusted expert to navigate the complexities of Agentic AI implementation, ensuring that powerful Agentic Commerce capabilities deliver profitable business outcomes and future-proof their order management operations.

KEY CONSIDERATIONS FOR IMPLEMENTING AGENTIC OMS

Embracing Agentic AI within your Order Management System is a transformative journey that requires careful planning and execution. To successfully transition from experimentation to enterprise-wide adoption, several crucial elements must be taken into account:

- **Identifying High-Impact Use Cases:** Avoid automation for its own sake. Instead, prioritize workflows within your Order Management System (OMS) where AI-driven reasoning, decision-making, and orchestration demonstrably enhance value. This includes areas such as optimizing intricate order routing, automating post-purchase support, predictive inventory management, and intelligent returns processing.

- **Data Readiness is Paramount:** The intelligence of your AI agents is directly tied to the quality and accessibility of your data. Ensure your enterprise data is clean, structured, and readily accessible. This involves robust data governance, real-time access patterns, and comprehensive frameworks to allow AI agents to effectively access and act upon enterprise knowledge related to orders, inventory, customers, and fulfillment.
- **Robust AI Governance & Risk Management:** The autonomous nature of Agentic AI introduces new considerations around security, bias, and compliance. Implement a structured governance model that includes:
 - ◊ Execution Boundaries & Control Mechanisms: Agents should operate in sandboxed environments with explicit permissions and rate limits.
 - ◊ Data Access Restrictions: Agents must retrieve and process only the necessary data, utilizing role-based access control (RBAC), encryption, and anonymization.
 - ◊ Regulatory Compliance & Auditability: Maintain detailed logs, deploy explainability frameworks, and ensure human oversight is part of the decision-making process to meet standards like GDPR, CCPA, and industry-specific regulations.
 - ◊ Bias Mitigation: Use diverse training datasets, bias auditing tools, and ongoing model evaluations.
 - ◊ AI Decision Validation: Implement self-correction mechanisms, human verification checkpoints, and fallback protocols for high-stakes decisions.
- **Workforce & Process Evolution:** Agentic AI is about augmentation, not replacement. Invest in training programs to upskill employees to work alongside AI, fostering a culture of AI adoption. Redesign workflows to maximize AI augmentation and set clear escalation paths for critical decisions where human intervention remains necessary.
- **Phased Adoption & Scalability:** Begin with pilot programs in a controlled environment to test performance, integration, and governance before scaling to mission-critical processes. Recognize that AI adoption is an iterative process; continuously monitor performance, refine strategies, and expand AI-driven automation across departments.
- **Custom vs. Low-Code/No-Code Platforms:** While low-code and no-code platforms may serve as a starting point for building autonomous and task-execution agents, the complexity of enterprise OMS ecosystems and unique business needs often call for a future-proof, custom-developed Agentic AI platform. This orchestration solution should evolve with the business, manage all agents within the organization, and prevent vendor lock-in, ensuring long-term adaptability.

CONCLUSION: THE AGENTIC ADVANTAGE IN YOUR ORDER MANAGEMENT

The future of commerce is intelligent, autonomous, and seamlessly orchestrated. As customer expectations continue to rise and operational complexities mount, a modern Order Management System powered by Agentic AI is no longer a luxury but a strategic imperative.

By now, you understand how a modern Agentic Commerce offering, built on a robust and intelligent foundation like Google Cloud's Gemini models, and brought to life through unparalleled expertise in AI strategy and implementation, creates a powerful trifecta for transforming your OMS.

By embracing the Agentic Advantage, businesses can:

- **Achieve Unprecedented Operational Efficiency:** Automate complex, multi-step fulfillment processes, optimize inventory, and reduce manual errors.
- **Deliver Superior Customer Experiences:** Provide real-time, personalized interactions, proactive support, and seamless post-purchase journeys.
- **Gain Actionable, Data-Driven Insights:** Leverage AI to predict demand, identify trends, and make smarter, faster decisions.
- **Future-Proof Their Commerce Operations:** Build a flexible, scalable, and resilient OMS capable of adapting to any market shift or emerging technology.

The journey to an intelligent OMS is a strategic investment in your business's future. Prioritize a clear vision, robust data foundations, strong governance, and a collaborative partnership with leaders like KIBO, Grid Dynamics, and Google to unlock the full potential of Agentic AI, driving profitability, enhancing customer loyalty, and securing your competitive edge.



About KIBO



Kibo Commerce is a composable commerce platform for retailers, manufacturers, distributors, and wholesalers who want to simplify complexity and deliver modern customer experiences. Supporting experiences that span Order Management, eCommerce, and Subscriptions, Kibo's platform is trusted by companies like Zwilling, Ace Hardware, and REEDS Jewelers to drive operational efficiency and exceed customer expectations.

For more information, visit kibocommerce.com.

About Grid Dynamics



Grid Dynamics (Nasdaq: GDYN) is a leading provider of technology consulting, platform and product engineering, AI, and digital engagement services. Fusing technical vision with business acumen, we solve the most pressing technical challenges and enable positive business outcomes for enterprise companies undergoing business transformation. A key differentiator for Grid Dynamics is our 8 years of experience and leadership in enterprise AI, supported by profound expertise and ongoing investment in data, analytics, application modernization, cloud platform and product engineering, and digital engagement services. Founded in 2006, Grid Dynamics is headquartered in Silicon Valley with offices across the Americas, Europe, and India.

To learn more about Grid Dynamics, please visit <https://www.griddynamics.com/>.

About Google Cloud



Google Cloud is the new way to the cloud, providing AI, infrastructure, developer, data, security, and collaboration tools built for today and tomorrow. Google Cloud offers a powerful, optimized AI stack with its own planet-scale infrastructure, custom-built chips, generative AI models and development platform, as well as AI-powered applications, to help organizations transform. Customers in more than 200 countries and territories turn to Google Cloud as their trusted technology partner.