Agentic Commerce

a-Commerce
The Era of the Ai Agent Powered Digital Business

AI's Next Giant Leap - The Dawn of Agentic Ai

Imagine a world where your business doesn't just react to the market—it anticipates it.

A world where tireless, intelligent agents work around the clock, not as mere tools, but as autonomous partners, making decisions, optimizing strategies, and unlocking opportunities you didn't even know existed.

This isn't science fiction; it's the reality unfolding before us, driven by the rise of Agentic AI. In the digital age, businesses have evolved from static entities to dynamic ecosystems, fuelled by data, connectivity, and innovation. Yet, the true revolution is only just beginning.

Agentic AI—artificial intelligence with the power to act independently, reason proactively, and adapt in real time—is redefining the rules of the game. Unlike traditional AI, which follows rigid scripts, Agentic AI is a collaborator, a strategist, and a trailblazer, capable of navigating complexity with human-like intuition and machine-like precision.

From reshaping customer experiences to streamlining operations, from predicting trends to rewriting marketing playbooks, Agentic AI is the invisible force propelling digital businesses into uncharted territory. It's not just transforming how we work—it's transforming what's possible. In these pages, we'll embark on a journey through this brave new frontier, exploring the technology, the visionaries behind it, and the real-world stories of companies thriving in its wake.

Welcome to the era of Agentic AI, where the future isn't predicted—it's created.

From Carts to Conversations: The Evolution of E-Commerce and Call Centers in the Age of Agentic AI

In the blink of a digital eye, e-commerce and customer service have transformed from static storefronts and scripted call center interactions to dynamic, intelligent ecosystems powered by Agentic AI.

This book traces the remarkable evolution of these industries, from the early days of dial-up online stores and toll-free hotlines to an era where autonomous AI agents anticipate customer needs, personalize experiences at scale, and redefine operational efficiency.

As businesses navigate this paradigm shift, “From Carts to Conversations” explores the technological breakthroughs, economic impacts, and ethical considerations driving the future of commerce and customer engagement.

Through vivid case studies, expert insights, and forward-looking analysis, we uncover how Agentic AI is not just enhancing but revolutionizing how we buy, sell, and connect in an interconnected world. From global retail giants leveraging AI to predict purchasing trends to innovative call centers resolving complex queries in real time, this book illustrates the transformative power of intelligent systems.

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Leadership Exemplars

Amazon's Predictive Personalization Engine

Amazon, a pioneer in e-commerce, has integrated Agentic AI to enhance its recommendation algorithms, moving beyond traditional collaborative filtering to predictive models that anticipate customer needs. By analyzing real-time data—such as browsing history, cart activity, and even external factors like weather patterns—Amazon's AI agents suggest products with uncanny precision.

For instance, during the 2023 holiday season, Amazon's AI-driven "anticipatory shipping" system prepositioned inventory in warehouses based on predicted demand, reducing delivery times by 20% and boosting customer satisfaction scores. This case study examines how Amazon's use of Agentic AI has set a new standard for personalized e-commerce at scale.

Zendesk's AI-Powered Customer Support Revolution

Zendesk, a leader in customer service platforms, deployed Agentic AI to transform call center operations for a major telecom provider in 2024. By integrating autonomous AI agents capable of natural language understanding and contextual decision-making, the company reduced average call resolution times from 8 minutes to under 3 minutes.

These AI agents handled 70% of routine inquiries—such as billing questions and plan changes—while seamlessly escalating complex issues to human agents with full contextual handoffs. This case study highlights how Agentic AI enhances efficiency and customer satisfaction while reducing operational costs.

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Shopify's Virtual Storefront Assistants

Shopify empowered small and medium-sized businesses with Agentic AI through its 2025 launch of "Shopify Converse," a suite of AI-driven virtual assistants. For example, a boutique fashion retailer in Europe used Shopify Converse to create personalized shopping experiences, with AI agents engaging customers via chat to recommend outfits based on style preferences and past purchases.

The retailer saw a 35% increase in conversion rates and a 15% reduction in cart abandonment. This case study showcases how Agentic AI democratizes advanced e-commerce tools, enabling smaller players to compete with industry giants.

T-Mobile's Hybrid AI Call Center Model

In 2024, T-Mobile implemented an Agentic AI system to overhaul its customer service operations. The AI agents, trained on millions of past interactions, resolved routine technical issues—like network troubleshooting—in real time, while also predicting customer churn risk based on sentiment analysis.

For instance, when a customer expressed frustration over dropped calls, the AI proactively offered a discounted plan upgrade, reducing churn by 12% in a single quarter. This case study explores how Agentic AI blends automation with empathy, creating a hybrid model that enhances both efficiency and customer loyalty.

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Through these examples and more, a-Commerce reveals the profound impact of Agentic AI, offering a roadmap for businesses to harness its potential while navigating the challenges of ethics, scalability, and human-AI collaboration in the evolving landscape of e-commerce and customer service.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

As Fortune describes Walmart leverages its extensive cloud network, specifically its “triplet model” multi-hybrid cloud, to power generative AI tools that enhance customer shopping experiences.

This infrastructure, consisting of two vendor-provided clouds and one private cloud across three U.S. locations, supports AI-driven features like a search tool, a shopping assistant, and exit technology.

These tools enable personalized product suggestions, voice ordering via smart devices, and efficient in-store operations.

Element – Enterprise Ai

Walmart’s cloud strategy, combined with its ‘Element‘ machine-learning platform, improves operational efficiency and customer engagement, positioning the retailer as a leader in cognitive commerce. This approach, termed “intellifusion,” integrates cloud and AI to transform retail, distinguishing Walmart from competitors like Amazon and Target.

Walmart’s Element is a flexible, in-house machine learning (ML) platform designed to streamline AI/ML adoption at scale, empowering data scientists and engineers to deliver innovative retail solutions.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

Built from the ground up, Element uses a multi-cloud strategy with Kubernetes for container orchestration and a Machine Learning Operations (MLOps) framework, enabling rapid development, deployment, and monitoring of scalable ML models across multiple clouds.

The platform integrates best-of-breed technologies, reducing setup time and costs while enhancing productivity through seamless cloud-switching and standardized processes. Key applications include Market Intelligence, which uses ML for competitive pricing and assortment insights, and an intelligent driver dispatch system for optimizing last-mile delivery, cutting costs and improving delivery times.

Element supports Walmart's massive operations, serving 240 million weekly customers across 10,500 stores and e-commerce sites in 19 countries, by simplifying workflows, fostering collaboration, and accelerating time-to-market for AI-driven solutions.

Intellifusion

Intellifusion, as highlighted in the Fortune article, represents Walmart's innovative approach to transforming retail by seamlessly integrating cloud computing with artificial intelligence, particularly generative AI and machine learning.

This strategy, dubbed "intellifusion," combines the computational power of a robust cloud infrastructure with intelligent systems to create a data-driven retail ecosystem that enhances both customer experiences and operational efficiency.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

At its core, intellifusion leverages Walmart's "triplet model" multi-hybrid cloud, which consists of two vendor-provided clouds and one private cloud hosted across three U.S. locations. This setup provides the scalability and processing power needed to support AI-driven applications that handle vast amounts of data in real time.

The fusion of cloud and AI enables Walmart to deliver highly personalized and efficient shopping experiences, a concept referred to as cognitive commerce. Through its Element machine-learning platform, Walmart powers tools like an advanced search engine, a shopping assistant, and exit technology.

Cognitive Commerce

For instance, a customer might use the app to ask for a birthday gift for a 10-year-old, and the AI, backed by the cloud, quickly analyzes product catalogs and user data to suggest tailored items like toys or games.

Simultaneously, the system can optimize in-store operations by alerting staff to restock popular products or streamlining checkouts with scan-and-go technology. These capabilities allow Walmart to anticipate customer needs and provide intuitive, seamless interactions across digital and physical channels.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

By adopting intellifusion, Walmart gains a significant competitive edge over rivals like Amazon and Target. The approach not only enhances customer engagement through personalized recommendations and voice-based ordering via smart devices but also improves operational efficiency by optimizing supply chain management and inventory tracking.

At its core, cognitive commerce leverages AI to understand and predict customer behavior by analyzing vast amounts of data, such as purchase history, browsing patterns, and preferences.

For Walmart, this is enabled by its Element machine-learning platform and supported by a robust multi-hybrid cloud infrastructure. For example, when a customer uses Walmart's app or website to search for a product, the AI-powered search tool doesn't just match keywords but interprets the intent behind the query, offering tailored suggestions.

A customer asking, "What's a good gift for a 10-year-old's birthday?" might receive recommendations for popular toys or games, curated based on real-time data and trends. This level of personalization makes shopping more relevant and engaging, fostering a deeper connection between the retailer and the customer.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

Multi-Channel AI

Beyond personalization, cognitive commerce enhances the entire shopping journey by integrating AI across various touchpoints. Walmart's shopping assistant, for instance, allows customers to place orders via voice commands on smart devices, making the process more convenient and accessible.

In physical stores, cognitive commerce powers technologies like exit systems or scan-and-go checkouts, which reduce friction and improve efficiency. These tools rely on AI to process data instantly, ensuring seamless experiences whether a customer is shopping online, through a mobile app, or in a brick-and-mortar store. By anticipating needs and simplifying interactions, cognitive commerce creates a fluid, customer-centric retail environment.

Operationally, cognitive commerce enables Walmart to optimize its supply chain and inventory management. The AI systems, backed by the cloud's scalability, can predict demand, alert staff to restock high-demand items, or adjust logistics in real time to meet customer expectations. This not only reduces costs but also ensures products are available when and where customers want them. The term "cognitive" reflects the system's ability to "think" and adapt dynamically, much like a human brain, by learning from data and improving over time.

In a broader sense, cognitive commerce sets Walmart apart from competitors like Amazon and Target by positioning it as a leader in retail innovation. It transforms shopping into a proactive, intelligent process where the retailer anticipates customer needs rather than merely reacting to them.

Walmart: Exemplar Case Study for Enterprise Ai and Agentic Commerce

By blending AI's predictive capabilities with the computational power of the cloud, Walmart's cognitive commerce strategy, as part of its broader "intellifusion" approach, redefines retail as a smarter, more connected experience that benefits both customers and the business.

Etsy Keeps Human Connection at the Heart of Commerce with Google Cloud AI

Etsy is home to a universe of more than 130 million special, extraordinary goods.

However, this vast, rapidly changing inventory makes it difficult to understand the full breadth of its marketplace, and, more critically, ensure the right pieces find the right person.

Etsy recognized that gen AI is an opportunity to enhance — not replace — the human connection between buyers and sellers, starting with understanding its dynamic inventory.

Etsy is leveraging Google Cloud AI to enhance its e-commerce platform, focusing on personalized and efficient shopping experiences that align with the concept of "Agentic Commerce," where AI agents autonomously handle tasks to streamline transactions and improve user engagement.

Using gen AI models, including Google's multimodal Gemini models, Etsy extracts information from images, video, and text to improve the quality and consistency of its product metadata and descriptions, enriching its understanding of its dynamic inventory.

They are also integrating Gen AI across their search and discovery experiences – this helps refine its relevancy algorithms, automatically generate new categories in response to emerging trends, and recognize intent when buyers search for items.

Intelligent Commerce

With a vast inventory of more than 130 million items, Etsy's greatest challenge is ensuring the right piece finds the right person — especially when inventory data may be limited and changes frequently.

Etsy Keeps Human Connection at the Heart of Commerce with Google Cloud AI

Gen AI models like Gemini are helping power “algotorial” curation — a blend of human and AI-powered recommendations that scales expert-curated collections for trends, styles, and occasions into millions of listings — amplifying curated listings on Etsy by roughly 80x.

Personalized Discovery Experiences

Etsy collaborates with Google Cloud AI to craft more engaging and tailored product discovery experiences. By integrating AI-driven tools, such as those powered by Google’s Vertex AI and BigQuery, Etsy enhances its search capabilities to deliver highly relevant product recommendations to its over 90 million buyers. This personalization ensures that shoppers are presented with items that match their preferences, improving the likelihood of purchase.

Machine Learning for Search and Recommendations

Since migrating its infrastructure to Google Cloud in 2020, Etsy has utilized Google Cloud’s machine learning capabilities, including Vertex AI, to optimize its search algorithms. This allows Etsy to run sophisticated experiments with large datasets, enabling faster and more accurate product sorting and recommendations. For instance, AI helps prioritize relevant items at the top of search results and alerts customers when an item is at risk of selling out, enhancing the shopping experience.

Etsy Keeps Human Connection at the Heart of Commerce with Google Cloud AI

Scalability and Efficiency

Google Cloud's scalable infrastructure, including Compute Engine and Cloud Run, supports Etsy's dynamic traffic demands, especially during peak shopping periods like Black Friday. This scalability allows Etsy to handle unpredictable demand surges while maintaining a smooth user experience. By moving away from managing its own data centers, Etsy has shifted 15% of its engineering resources from infrastructure management to customer-focused innovations, many of which are powered by AI.

Conversational Commerce Potential

While not explicitly detailed for Etsy, Google Cloud's advancements in conversational commerce, such as Vertex AI Search for Commerce, align with Etsy's goals. These tools enable natural, human-like interactions with customers, potentially assisting shoppers in finding products or answering queries using data from multiple sources. This capability could be integrated into Etsy's platform to enhance customer service and drive conversions.

Etsy Keeps Human Connection at the Heart of Commerce with Google Cloud AI

Agentic AI Integration

Google Cloud's Agent2Agent (A2A) protocol and AI Agent Marketplace enable interoperable AI agents that can autonomously perform tasks like transactions and data exchanges. While specific examples of Etsy using A2A are not detailed, its partnership with Google Cloud positions it to potentially adopt such agentic tools for tasks like automated order processing or personalized marketing, further advancing agentic commerce.[]()[]()

Data-Driven Insights

Etsy uses Google Cloud's BigQuery for advanced analytics, enabling data scientists to run experiments twice as fast as before. This capability supports agentic commerce by allowing Etsy to analyze buyer behavior and optimize product listings in real-time, creating a more responsive and tailored marketplace.

Conclusion

In summary, Etsy's use of Google Cloud AI focuses on enhancing personalization, optimizing search and recommendations, and improving operational efficiency, all of which contribute to an agentic commerce model where AI autonomously improves the shopping experience.

Booking.com and OpenAI Personalize Travel at Scale

As this case study describes Booking.com has partnered with OpenAI to enhance its travel platform using large language models (LLMs), resulting in the AI Trip Planner.

This tool integrates OpenAI's GPT models with Booking.com's data to offer personalized, conversational travel planning.

It addresses the challenge of capturing user intent during the discovery phase, moving beyond traditional search filters to handle open-ended queries like "Where should I go for a romantic weekend in Europe?"

The AI Trip Planner suggests destinations, builds itineraries, and provides real-time pricing and availability. Developed in just 10 weeks, it combines structured and unstructured data for deeper personalization. Early results show increased user engagement, faster searches, reduced support contacts, and higher booking confidence.

The collaboration highlights Booking.com's shift toward intent-driven travel experiences, leveraging AI to uncover lesser-known destinations and streamline planning.

Booking.com and OpenAI Personalize Travel at Scale

AI Trip Planner

The AI Trip Planner is a tool developed by Booking.com in collaboration with OpenAI, leveraging large language models (LLMs) like GPT to enhance the travel planning experience. It's a conversational interface that allows users to plan trips by asking open-ended or specific questions, such as "Where should I go for a romantic weekend in Europe?" or "Find me a beach vacation under $1,000."

Unlike traditional search tools that rely on rigid filters, the AI Trip Planner understands user intent, processes natural language queries, and provides personalized recommendations for destinations, accommodations, and itineraries.

Key Features:

- **Conversational Interface:** Users interact with the tool as they would with a travel agent, asking questions in natural language.
- **Personalized Recommendations:** Combines Booking.com's structured data (e.g., pricing, availability) with unstructured data (e.g., user preferences, reviews) to suggest tailored destinations and plans.
- **Real-Time Data:** Provides up-to-date pricing, availability, and booking options.
  Itinerary Building: Creates detailed travel itineraries based on user input, including flights, hotels, and activities.
- **Discovery Focus:** Helps users explore lesser-known destinations or options that align with vague or broad preferences.

Booking.com and OpenAI Personalize Travel at Scale

How It Works:

The AI Trip Planner uses OpenAI's GPT models to interpret complex queries and Booking.com's extensive travel data to generate relevant responses. For example, it can suggest a romantic getaway in Santorini with specific hotels and activities, factoring in budget, dates, and preferences, all while pulling real-time availability. The tool was developed in just 10 weeks, showcasing rapid integration of AI into Booking.com's platform.

Benefits:

- **Increased Engagement:** Users spend more time exploring options due to the intuitive, conversational experience.
- **Faster Search:** Reduces time spent navigating traditional search interfaces.
- **Higher Booking Confidence:** Personalized suggestions and clear itineraries make users more confident in their choices.
- **Reduced Support Contacts:** The AI handles complex queries, lowering the need for customer service intervention.

Booking.com and OpenAI Personalize Travel at Scale

Impact:

The AI Trip Planner shifts travel planning from a filter-based, transactional process to an intent-driven, conversational one. It empowers users to discover new destinations and plan trips efficiently, while Booking.com benefits from improved user satisfaction and operational efficiency.

The tool exemplifies how AI can transform industries by combining advanced language models with domain-specific data.