

The Future of AI in Healthcare

Why Digital Orchestration and the Vantiq Platform Matter

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Some Key Points...

- Healthcare is undergoing an irreversible transformation.
- Rising costs, clinician shortages, aging populations, and increased patient expectations are colliding with the rapid rise of AI.
- The next wave of healthcare transformation will be won by those who can orchestrate intelligent, real-time, adaptive systems.





A \$1 Trillion Digital Transformation...

\$1T

Healthcare Spend Shift

By 2035, \$1 trillion of U.S. healthcare spend will shift to digital-first, AI-enabled systems according to PwC.

20%

Local AI Workloads

Over 20% of enterprises will run AI workloads locally by 2028, up from less than 2% in 2025.

Level 2-3

Digital Maturity

Most health systems are stuck at Level 2-3 maturity out of 8 levels according to HIMSS research.



The Current State: Digital Assets Without Orchestration

The EHR Era

The past 15 years have been dominated by EHR adoption, driven by regulations such as HITECH. While this digitized health records, it also entrenched silos. Systems were optimized for billing and compliance, not for real-time operations or care orchestration.

Early AI Adoption

AI has made progress in niches: radiology image interpretation, pathology, sepsis prediction, revenue cycle automation. Yet these successes are bounded—localized to departments and disconnected from broader operations.

The Gap Between Pilots and Scale

Pilot Purgatory

AI adoption is accelerating, but without hybrid AI infrastructure and orchestration, enterprises fail to scale beyond pilots according to DDN and Gartner

Integration Challenges

Despite decades of digitization, workflows remain siloed, asynchronous, and fragile. Clinical decisions are made without real-time, integrated data

Safety Risks

AHRQ highlights that poorly implemented digitization can create new risks, such as alert fatigue or missed notifications

Market Trends Shaping the Next Decade



Care Migration

Care will move from hospitals to homes, communities, and virtual hubs. Acute facilities will shrink into modular, high-speed nodes



Hybrid AI Infrastructure

Training in the cloud, inference at the edge or bedside, with data sovereignty respected on-premises



Agentic AI

AI that can reason, adjust, and act in context—vital for care coordination, population health, and personalized medicine



Digital Orchestration

The Missing Link

Digital orchestration is the missing link. Orchestration goes beyond integration by coordinating data, workflows, and AI across systems and stakeholders in real time. Without it, healthcare's digital revolution will remain stalled in pilot mode.





Integration vs. Orchestration

"Integration is important... but orchestration is the rocket engine."

Integration

Connects systems so data moves between apps. Important but limited in scope and capability.

Orchestration

Coordinates systems to act in unison. Workflows adapt in real time across apps, teams, and devices.

Why Orchestration Matters



Safety

Ensures no data or task "falls through the cracks" by maintaining continuous coordination across all systems and stakeholders



Efficiency

Eliminates manual coordination by automating workflows and enabling seamless communication between systems



Agility

Allows workflows to evolve rapidly in response to changing conditions and requirements



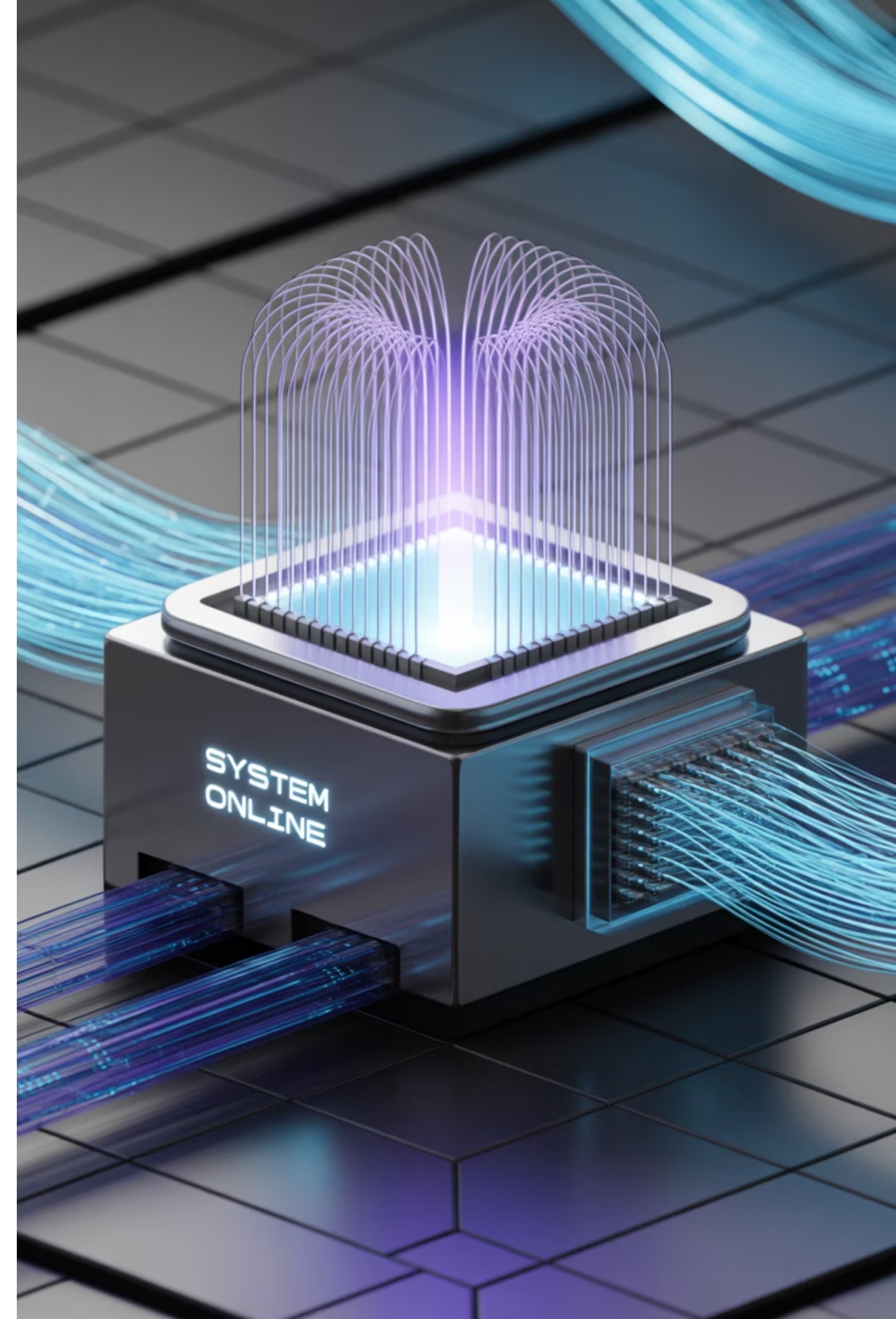
Scalability

Moves from pilots to enterprise-wide systems by providing robust infrastructure for growth

Vantiq provides the platform to make digital orchestration possible.

Unlike tools or point solutions, Vantiq combines a development environment and runtime infrastructure into one, enabling health systems and partners to design, deploy, and operate mission-critical, event-driven, agentic AI systems at scale.

Transform your enterprise with a platform built for mission-critical, real-time decision making. Vantiq delivers immediate responses to events as they happen, not hours later.



Why Real-Time Matters

Instant Response

Analyze and respond to events the moment they happen, turning streams from apps, devices, and services into immediate actions.

Mission-Critical Impact

In healthcare and other critical domains, minutes matter. Real-time orchestration improves safety, throughput, and experience instantly.

Traditional Challenge

Most enterprises collect data, store it, and analyze in batch. Stitching together live systems is brittle and expensive.



Pre-Integrated Infrastructure Backbone

Vantiq pre-integrates everything real-time applications need: async messaging, event brokers, distributed execution, storage, security, connectors, AI, and SDLC tools.



Faster Development

Teams build solutions faster and more reliably because the heavy plumbing is handled for you.



Built-in Security

Scale, reliability, availability, and security are integrated from day one.



No DIY Stack

Avoid the complexity of message buses, auth, retries, and AI wiring that add risk and delays.



Asynchronous Execution & Fault Tolerance

Fully Asynchronous

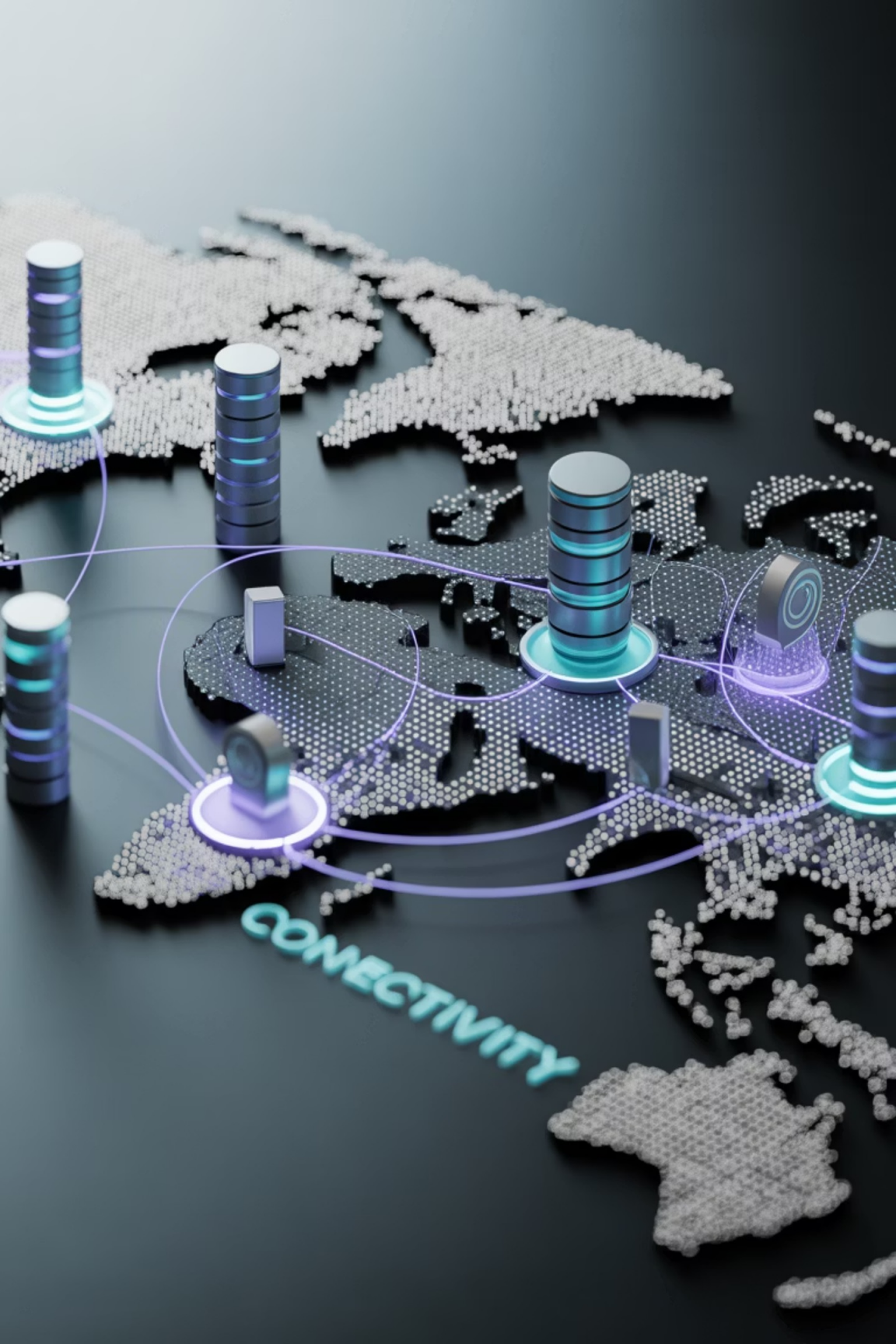
Everything runs asynchronously to maximize throughput and minimize latency. Blocking steps yield; work spreads across the cluster.

Real-world workflows are messy and out-of-order. Asynchrony keeps systems responsive under load, handling late jobs and dropped packets seamlessly.

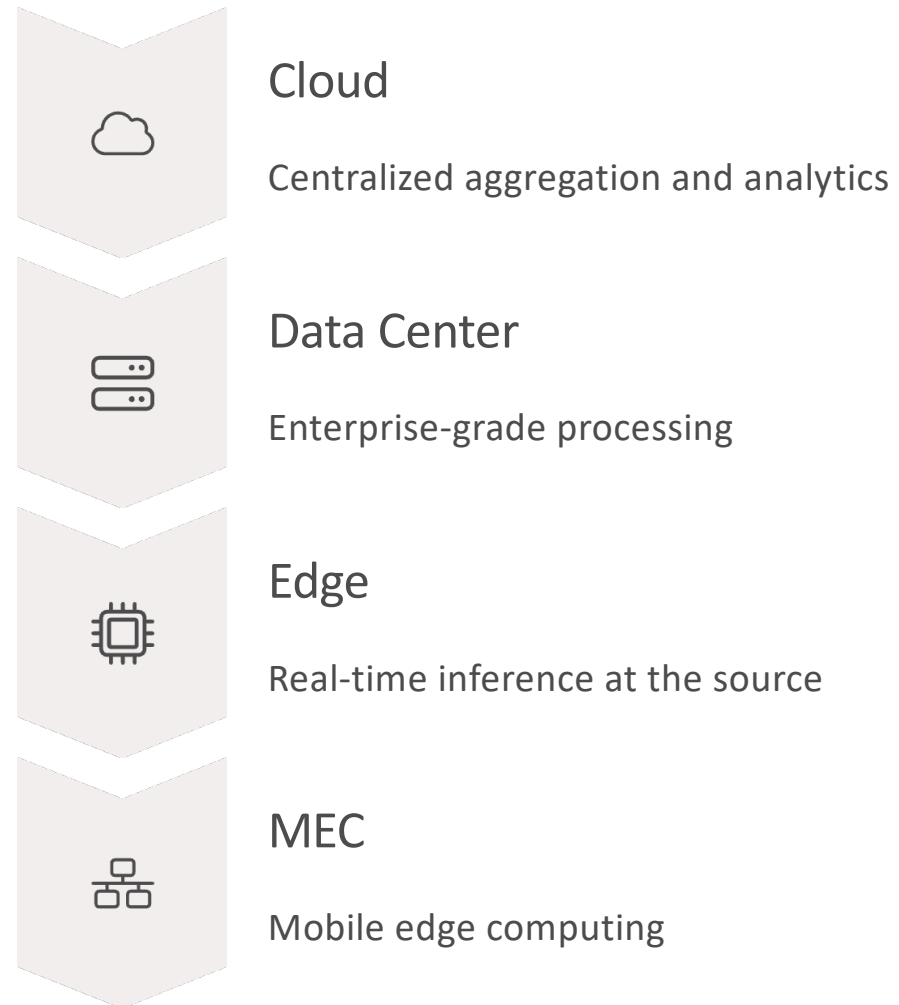
Mission-Critical Reliability

Restart at point-of-failure, replicated shared memory, policy-driven shedding of non-critical work, and automatic workload redistribution.

Get high availability out-of-the-box with guaranteed important events and self-healing during spikes and outages.



Distributed Architecture



Partition and deploy components anywhere with the same feature set. Put logic where it belongs - inference at bedside/edge, aggregation in cloud - to meet latency, sovereignty, and cost goals. Reconfigure topology without rewrites.

Security & Productivity Built-In

Zero-Trust Security

OAuth2/Keycloak, MFA, encrypted storage and messaging, VPN/Kubernetes isolation, fine-grained access, API keys. Security embedded, not bolted on.

Full SDLC Support

Multiple abstraction levels: natural language (VIA), visual modeling, declarative rules, and scripting. Cross-functional teams co-create production-grade prototypes.

Reusable Components

Services, visual components, agents, integrations packaged into Assemblies. Teams reuse proven building blocks across customers and regions.

AI Orchestration & Event Processing



Accurate situation detection plus the right next action - automatically. Agents don't just chat; they do things reliably with guardrails and audit. Combine "see/measure" with "explain/act" to close the loop from signal to action.



Performance & Integration at Scale

200K

Events/Second

Benchmarked throughput
on single machine

8ms

Average Latency

Millisecond-level response
times

180+

Integrations

MQTT/Kafka, REST,
databases, enterprise
systems

VIA GenAI assistant helps build real-time systems conversationally. Adaptive automation handles edge cases with GenAI + context. Federated Natural-Language Query lets leaders ask questions across data sources. PHI-protecting topologies ensure compliance while maintaining resilience.

What Makes Vantiq Different



Unified Development

Unlike platforms where prototypes must be rebuilt for production, Vantiq allows interactive design via VIA and immediate deployment into mission-critical runtime



Event-Driven Architecture

Healthcare is asynchronous—labs, sensors, admissions, alerts arrive at different times. Vantiq's architecture is natively event-driven and distributed



Mission-Critical Reliability

200,000 events/sec throughput, 8ms latency, fault tolerance, and restart-at-point-of-failure capabilities

Use Case: National Biosurveillance System

The Problem

Fragmented, delayed reporting across hospitals, labs, pharmacies, and airports. Pandemics and biothreats are detected too late due to siloed systems.

Vantiq Solution

Federated orchestration of real-time feeds from clinical, IoT, mobility, and public data. Triggers cross-agency coordination without centralizing data.



Use Case: Hospital Command Center

The Challenge

Dashboards offer lagging indicators. Staff manually reconcile EMRs, beds, and staffing data, leading to inefficiencies and bottlenecks.

Vantiq's Impact

Real-time ingestion of EMR, IoT, and workforce data to predict bottlenecks, automate resource allocation, and alert proactively.

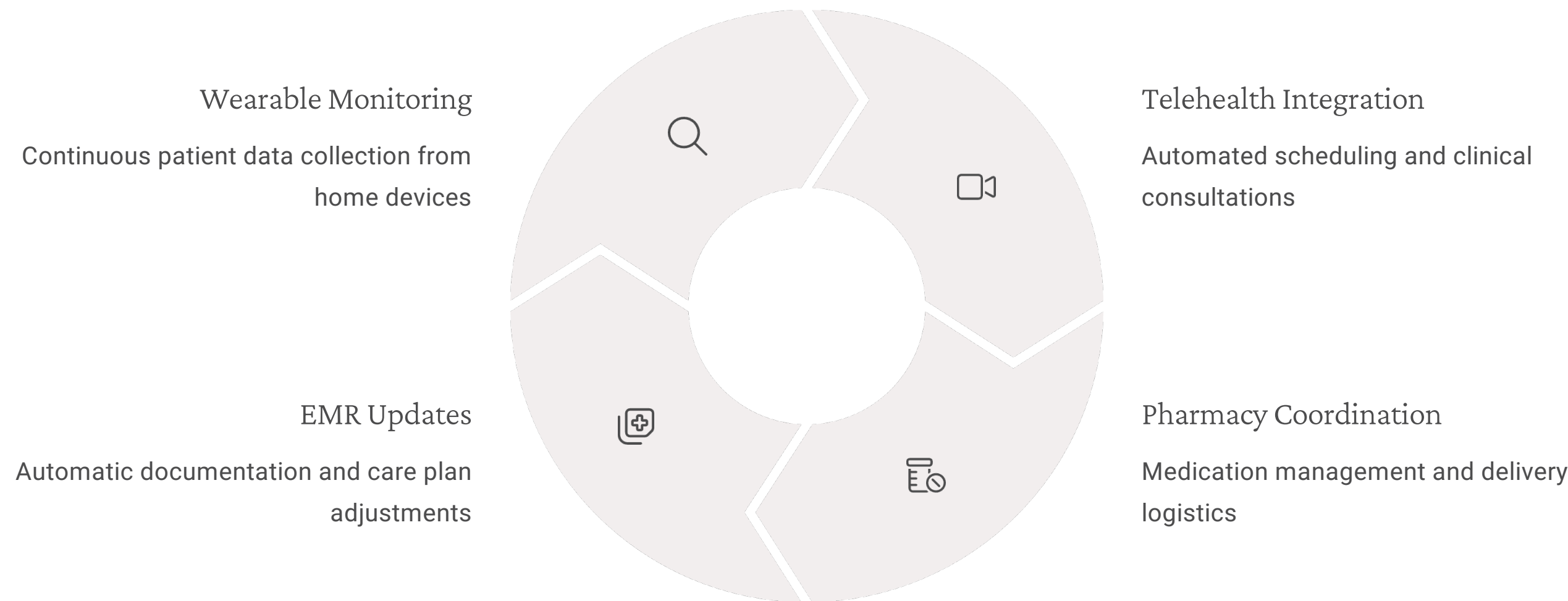
- Reduced wait times through predictive resource allocation

- Improved patient throughput with automated workflows

- Enhanced surge resilience during peak demand



Use Case: Virtual Hospital



Hospital-at-home models are often siloed with disconnected wearables, telehealth, pharmacy, and logistics. Vantiq's orchestration layer routes alerts, schedules care, integrates services, and updates records automatically—delivering lower costs, higher satisfaction, and scalable at-home care.

Use Case: Remote Patient Monitoring

Device streams overwhelm clinicians with noise and false alarms, creating alert fatigue and safety risks.

Vantiq filters and correlates data streams, escalates only critical signals with proper context, and orchestrates appropriate next steps. This approach reduces readmissions, minimizes alert fatigue, and enables safer care at home through intelligent signal processing and contextual decision-making.



Use Case: Agentic Care Coordination

01

Automated Follow-ups

AI agents manage post-discharge communications and appointment scheduling

02

EHR Integration

Seamless data flow across multiple electronic health record systems

03

Adaptive Care Plans

Dynamic adjustment of treatment protocols based on patient context and outcomes

04

Outcome Monitoring

Continuous tracking of adherence and health metrics for optimization

Discharge and chronic care plans often break down due to handoff failures. Vantiq's agentic AI automates follow-ups, integrates across EHRs, and adapts care plans to patient context, resulting in higher adherence, fewer preventable readmissions, and better chronic disease outcomes.

Use Case: Elderly Care



The Problem

Falls and chronic wound issues often escalate too late. Monitoring is fragmented across different systems and providers.

Vantiq Solution

Combines IoT sensors, vision AI, and orchestration for fall detection, wound analysis, automated alerts, and care team coordination.

Results

- Improved quality of life for elderly patients
- Fewer emergency hospitalizations
- Significant cost savings for healthcare systems

Strategic Imperatives for Partners



Lead with Outcomes

Focus on outcome-driven narratives emphasizing safety, efficiency, and patient experience improvements



Embrace Event-First

Adopt event-first architectures instead of building static applications that can't adapt to real-time needs



Leverage VantIQ Assets

Utilize VantIQ's reusable components, demonstrations, and proven playbooks to accelerate implementation



Position for Tomorrow

Prepare for the future convergence of agentic AI, hybrid infrastructure, and intelligent orchestration



The Path Forward

Healthcare's next trillion dollars will not be won by more disconnected apps or pilots. It will be won by those who can orchestrate intelligent, adaptive, real-time systems across hybrid infrastructures.

For healthcare providers, this means safer, more efficient care delivery. For technology partners, it means the ability to scale transformative solutions across markets and create lasting competitive advantages.

The market is moving toward event-driven, orchestrated, agentic systems. The question is not whether this transformation will happen, but who will lead it.

The Future is Orchestrated

Vantiq provides the platform to make intelligent healthcare orchestration possible today. With its unified development environment, mission-critical runtime, and agentic AI capabilities, healthcare organizations can move beyond fragmented pilots to enterprise-scale transformation.

The future of healthcare is orchestrated. With Vantiq, it is possible today.



Healthcare Orchestration