

Digital Commerce & Transformation in Healthcare and Medical Supply: A Strategic Guide



Who Will Benefit from This Guide?

This guide provides a comprehensive overview of the key digital transformation challenges in the B2B healthcare industry and how a modern, adaptable healthcare ecommerce platform can address them. This document is designed for professionals and decision-makers working in procurement, distribution, and digital transformation within:

MEDICAL SUPPLY AND PHARMACEUTICAL DISTRIBUTION LAB,

CLINICAL, AND HOSPITAL SUPPLY MEDICAL EQUIPMENT

PROCUREMENT PRIVATE PRACTICES AND CLINIC NETWORKS

B2B HEALTHCARE COMMERCE

This guide is particularly relevant to:

DIGITAL TRANSFORMATION AND ECOMMERCE LEADERS

CIOS AND ENTERPRISE ARCHITECTS

MEDICAL PRODUCT DISTRIBUTORS

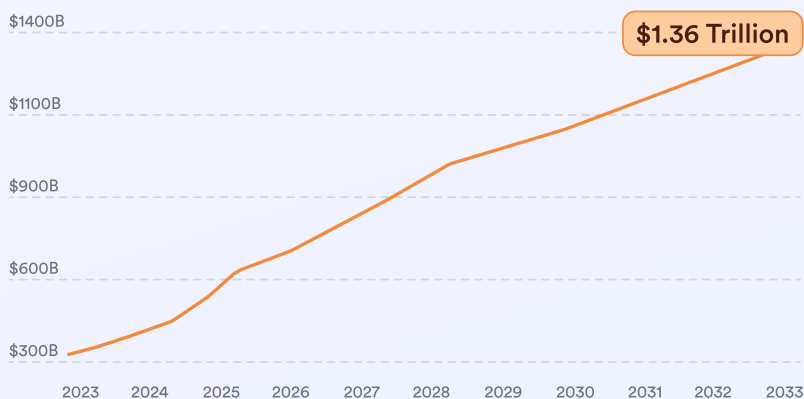
STAKEHOLDERS IN PUBLIC AND PRIVATE HEALTHCARE SECTORS

Healthcare and Medical Supply Industry Statistics and Forecasts

By 2033, the global healthcare ecommerce market is expected to grow from \$302 billion in 2023 to **\$1.36 trillion by 2033**. The global medical supplies market, worth \$138 billion in revenue in 2022, is poised to reach **\$163.5 billion by 2027**. While some health systems have been on a digital transformation journey for a decade or more, other countries are just getting started.

According to [Deloitte](#), about 70% of surveyed healthcare executives say that investing in technology platforms will be important for their organizations. Additionally, 60% highlighted the need to invest in core technologies such as electronic medical records (EMRs) and enterprise resource planning (ERP) software. About 90% of healthcare executives expect the use of digital technologies to accelerate in 2025.

Projected Growth in Healthcare eCommerce Market



Projected Growth in Healthcare Market



Global Healthcare Industry Challenges

Despite the projected growth, the healthcare industry faces several critical external and internal challenges that can threaten its long-term resilience and scalability.

Key challenges include:

01

Supply Chain and Operational Volatility

- **Global supply chain fragility:** Geopolitical tensions, pandemics, and tariff disputes, particularly U.S.–China, have increased dependence on limited suppliers and logistic hubs.
- **Cost pressures and margin erosion:** Increasing supply costs can't always be passed to customers, especially in contract-based and tender-driven procurement models, requiring gradual structural changes that yield long-term results.
- **Inventory imbalances:** Lack of real-time visibility leads to both stockouts and overstock, affecting care delivery and working capital.
- **Predictive supply planning gap:** Few organizations leverage AI-based demand forecasting and inventory optimization to buffer disruptions.

02

Regulatory Complexity and Compliance Pressure

- **Evolving regulations:** Regulations such as the U.S. DSCSA, EU MDR, IVDR, HIPAA, and GDPR demand advanced traceability, real-time UDI monitoring, and auditability.
- **Post-market surveillance and reporting:** Healthcare organizations need effective systems that support feedback loops from clinical use back into regulatory reporting.
- **Risks associated with legacy systems:** Outdated legacy systems lack the flexibility for continuous compliance updates or regional data sovereignty alignment.
- **Data protection and governance:** Strict security and access controls must be embedded to support compliance with HIPAA, GDPR, and other global privacy standards.

Global Healthcare Industry Challenges

Key challenges include:

03

Globalization, Protectionism, and Marketplace Evolution

- **Emergence of B2B marketplaces:** Healthcare systems and suppliers are shifting to consortium-based procurement and platform-led commerce.
- **Manufacturers adopting D2C and B2B2C models:** Direct-to-clinician models challenge traditional medical supply distributors.
- **Complex cross-border pricing:** Cross-border operations, particularly in times of rising protectionism, require contract-based pricing engines, real-time tax calculation, and region-specific workflows.
- **Fragmented digital infrastructure:** Global expansion exposes gaps in technology readiness, as suppliers and buyers often operate on systems with uneven levels of digital maturity.

04

User Experience and Digital Engagement

- **Offline B2B workflows:** Many medical procurement operations still rely on spreadsheets, emails, and phone calls, slowing decision-making and tracking.
- **Expectations for B2C-like experiences:** B2B buyers now expect intuitive interfaces, self-service tools, order history access, and live shipment tracking.
- **Context-poor portals:** Most portals don't adapt based on role (e.g., admin, clinician, buyer), department, or location, creating friction in operations.
- **Lack of mobile-first strategy:** Clinicians often need to place urgent or on-the-go orders but are hindered by poor mobile UX.

Global Healthcare Industry Challenges

Key challenges include:

05

Architectural Inflexibility and Technical Debt

- **Expensive legacy systems:** Legacy platforms are expensive to update, inhibit innovation, and increase implementation timelines for even basic changes.
- **High integration effort:** Disconnected architecture leads to silos and poor visibility across ERP, PIM, EHR, and SCM systems.
- **Vendor lock-in:** Legacy platforms with limited extensibility restrict customization, regional expansion, and innovation cycles, and enforce substantial switching costs.
- **System entanglement:** Tight coupling of services leads to cascade failures and security gaps during change events.

06

Limited Adaptability and High Cost of Change

- **Functional flexibility:** Enterprises must be able to launch new services (e.g., multi-tier approval workflows, AI modules, mobile ordering) rapidly, and not all ecommerce solutions can support it.
- **Costly replatforming:** Modern commerce requires modular, API-first platforms with event-driven extensibility, but constantly migrating solutions to find “the one” can be expensive.
- **Change as a constant:** Healthcare platforms must support continuous transformation—not only periodic overhauls.
- **Unpredictable TCO:** Many platform vendors lack transparency when it comes to the total cost of owning a solution built on a platform.

Staying consumer-centric while tackling these challenges requires healthcare organizations to **digitize their operations faster** than ever before. The future of healthcare commerce and successful digital adoption depends on **adaptive-by-design platforms** that:

- Provide **real-time intelligence**,
- Deliver **consumer-grade experiences**,
- Support ever-evolving **compliance** requirements, and
- Enable business model **innovation at predictable costs**—from B2B marketplaces to embedded AI and composable commerce strategies.

What a Modern Healthcare eCommerce Platform Must Deliver

A modern eCommerce platform in healthcare isn't just a sales tool—it's a strategic foundation for building resilient supply models and strong customer relationships. It must serve as a digital commerce engine while also acting as a bridge between internal systems, regulatory frameworks, and evolving customer expectations.

Key healthcare eCommerce requirements include:



- **Compliance with industry regulations and standards**, such as HIPAA, MDR, HITECH, GxP, and GDPR Flexible pricing models to support custom conditions, tiered price lists, and contract agreements
- **Advanced role-based** access to control permissions for buyers, admins, and specialists
- **Robust integrations** with ERP systems (SAP, Microsoft Dynamics, NetSuite), CRM, PIM, EHR, WMS, and others
- **Support for complex B2B logic**, such as bulk orders, multi-stage approvals, and warehouse analytics
- **Ability to manage extensive catalogs** with millions of SKUs, product filtering, and PIM compatibility
- **Scalability and fault tolerance**, including support for multi-regional structures, cloud and hybrid models
- **Built-in analytics and automation tools** for monitoring KPIs, customer activity, and supply efficiency
- **Adaptable modular architecture** to activate, mix and match only the necessary modules and scale rapidly as needed
- **Data security and control** to ensure traceability and protect customer and medical data

The choice of your healthcare eCommerce architecture model is critical, as it directly influences your organization's ability to:

- **Deploy on-premises** to have full control over sensitive information,
- **Quickly adapt** to changing market conditions and business scenarios,
- **Reduce the cost** of customization, support, and overall TCO, and
- **Avoid vendor lock-in.**

This is where the distinction between **SaaS and PaaS eCommerce platforms** becomes pivotal—two fundamentally different approaches in terms of flexibility and control.

SaaS vs PaaS Platform: The Critical Decision for B2B Healthcare eCommerce

SaaS (Software-as-a-Service) refers to a subscription-based, ready-to-use solution with limited to no customization options. It's a collection of "fixed" services and integrations that can be suitable for standard use cases but often prove limiting in B2B healthcare models that require complex configurations and integrations. Most importantly, the backend of a SaaS platform is out of reach for customers, which hinders meaningful modifications.

PaaS (Platform-as-a-Service), by contrast, is architecturally designed for healthcare organizations to build a solution around their business rather than forcing their business to conform to "fixed" software. PaaS also offers pre-composed modules and business scenarios to kickstart a project, but on top of that, allows teams to access a platform's backend for deep customization.

Technical Aspect	Typical SaaS Vendor	PaaS (e.g., Virto Commerce)
Time to launch	Fast setup	MVP possible in 4–6 weeks
Control over code	No	Yes
Integration capabilities	Limited	Deep ERP, CRM, PIM, EHR integrations
Flexibility	Limited	Maximum, with full backend access
Scalability	Limited by vendor architecture	Horizontal and vertical; scales with your specific scenario
Vendor lock-in	High	Low to none

With SaaS solutions, companies adapt their business to the platform.

With a truly adaptable PaaS solution, the platform adapts to your business needs.

How Virto Commerce Solves B2B Challenges in Medical and Healthcare Sectors

Virto's Commerce Innovation Platform (CIP) is a flexible, scalable, and architecturally mature **PaaS platform**, purpose-built for complex B2B commerce scenarios. Virto's CIP is an API-first, cloud-native, headless platform with over 80 pre-built modules and six Packaged Business Capabilities (PBCs). For companies involved in the supply of medical equipment, clinical materials, and hospital procurement, this means **you're getting a strong technological foundation for all digital interactions with customers, partners, and internal teams.**

What makes Virto Commerce particularly well-suited for the healthcare industry:



Modular PaaS architecture

Healthcare organizations have full control over the code, underlying ecommerce architecture, modules, and business logic —a critical requirement in highly regulated industries



Seamless compatibility with enterprise systems

Virto's CIP integrates effortlessly with your ERP (SAP, Dynamics, NetSuite), PIM, WMS, LIMS, EHR, and other systems commonly used in healthcare supply chains



Headless and API-first

Your team can build any frontend experience, connect third-party solutions, and support omnichannel sales (e.g., web, mobile, and vendor portals for various customer segments).



Proven security

The platform meets HIPAA and GDPR requirements, supports traceability, and offers secure role-based access management. Through a strategic partnership with [Skyflow](#), Virto Commerce also provides advanced capabilities for privacy and protection of sensitive patient and customer data. Skyflow securely stores and tokenizes sensitive data, enables native integration with secure data storage, encryption, and access control technologies that meet HIPAA and other regulatory requirements.

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What makes Virto Commerce particularly well-suited for the healthcare industry:



High scalability

From MVP to global marketplace, Virto Commerce supports your ecommerce journey without the need for architectural refactoring. You can launch pilot projects fast and scale as your readiness grows.



Expert guidance and proactive support

The Virto team has developed the CIP with continuous ecommerce innovation and TCO optimization in mind. We offer a unique approach, [Virto Guarantee](#), that combines product flexibility, strategic long-term collaboration, and built-in value to ensure successful ecommerce outcomes—every time.

Real-world business scenarios that can be implemented with Virto Commerce

- **Creating a B2B marketplace** for clinics and private practices with differentiated pricing and product assortment access
- **Developing a personalized procurement portal** for large clients operating under contract-based purchasing models
- **Implementing a centralized order system** for hospital networks, with access and workflow distribution across branches
- **Building a self-service portal** for labs and clinics to simplify ordering and reduce administrative load

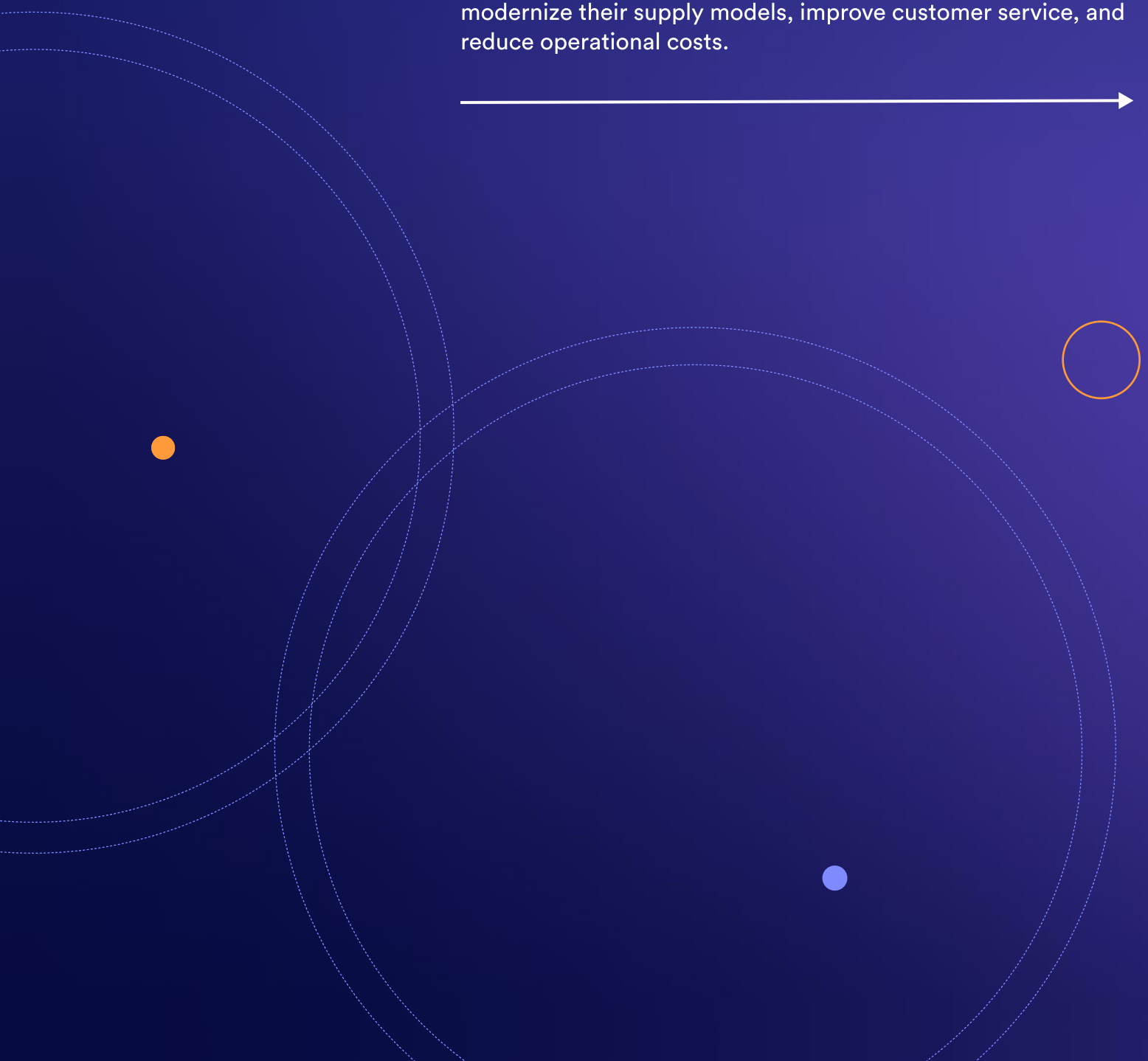
Virto Commerce empowers healthcare companies to build their ecommerce architecture around their own goals and commitments rather than adjusting their processes to fit a rigid, static platform.



Success Stories

How Healthcare and Pharma Companies Leverage Virto's PaaS Platform

Virto Commerce is already helping companies around the world transform their B2B processes, including medical supply chains, clinical laboratories, and pharmaceutical distribution. Large enterprises globally rely on Virto Commerce to modernize their supply models, improve customer service, and reduce operational costs.



01

Achieving B2B Growth Across Global Markets

Context: A leading supplier of reagents and instruments to over 5,000 private clinics and laboratories worldwide needed to modernize its order process, which relied heavily on phone and email. Buyers often discovered products through educational content, highlighting the need for a content-driven ecommerce experience.

Solution: Virto's CIP was implemented as a client portal that seamlessly connected learning content to product discovery. It supported bulk ordering, tiered pricing, and automated notifications, with full ERP and logistics integration to enable end-to-end automation.

The Results

60%

Reduction in customer service workload

>42%

Increase in repeat orders within 6 months

94%

Faster order processing time—cut from 36 hours to 2 hours

02

B2B Marketplace for Medical Equipment Suppliers

Context: A holding company with multiple brands and vendor partners needed a unified platform for cross-border medical equipment distribution.

Solution: A multi-vendor marketplace built on Virto's CIP supports custom catalog structure, region-specific role-based access control, and an extensive catalog of hundreds of thousands of SKUs.

The Results

35%

Reduction in TCO compared to a legacy system

6 weeks

MVP launched in 6 weeks

3 markets

Seamless expansion into 3 new markets

03

Digital Procurement Platform for a Hospital Network

Context: A hospital network with over 20 locations faced inefficiencies from fragmented procurement processes and limited visibility into inventory levels, requiring a standardized, centralized procurement solution.

Solution: Virto Commerce was deployed as a backend commerce engine, integrated with the existing order portal, logistics systems, and analytics tools. A multi-level user structure enabled granular role management for procurement teams at both the central and local levels.

The Results



Standardized procurement workflows and error reduction

48%

48% reduction in time from request to delivery



Full transparency and inventory traceability across all locations



Summing Up

In a landscape of unstable supply chains, rising regulatory pressures, and accelerated digital migration, success in healthcare belongs to the companies that make strategic choices in selecting platforms that enable adaptability, scalability, and control over mission-critical processes.

Virto Commerce is more than just an ecommerce platform. It's a technology foundation and a strategic partner that can support your business at any stage of its digital journey.

- ✓ MVP launch in 4–6 weeks—without unnecessary bureaucracy or overhead
- ✓ Your architecture, your pace—you control the logic rather than adapting to rigid templates
- ✓ Flexible integrations with your current systems (ERP, CRM, EHR, LIMS, and more)
- ✓ Enterprise-grade DevOps support, version control, and security
- ✓ Full compliance with HIPAA, GDPR, MDR, and GxP

Ready to Transform Your Digital Commerce?

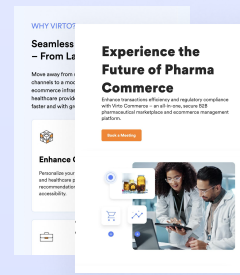
Planning to modernize your healthcare and medical digital commerce or replace a legacy platform?

Virto Commerce offers a path without compromise between flexibility and security. Discuss your unique goals with one of our experts.

[Book a Demo](#)

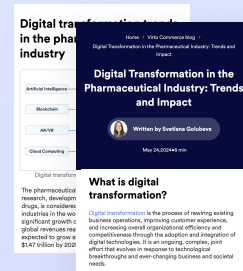
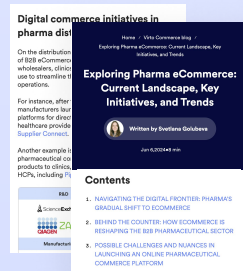
Recommended Reading

[See What Virto's Commerce Innovation Platform Is Made Of](#)



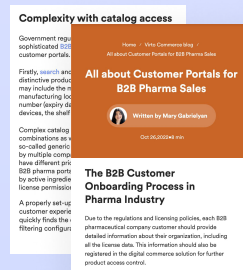
[Create a B2B Pharma Marketplace with Virto's Commerce Innovation Platform](#)

[Explore Pharma eCommerce: Current Landscape, Key Initiatives, and Trends](#)



[Understand Digital Transformation in the Pharmaceutical Industry](#)

[Build Customer Portals for B2B Pharma Sales](#)



[Learn How to Successfully Replatform Your Current eCommerce Solution](#)



About Virto Commerce

Virto Commerce, founded in 2011, is a global leader in B2B ecommerce and marketplace solutions, with offices in Los Angeles, Limassol, and Vilnius.

Virto Commerce specializes in innovative, highly customizable headless commerce platforms. Our mission is to empower businesses with cutting-edge ecommerce solutions through relentless innovation.

At the heart of our offerings is the Commerce Innovation Platform, which enables businesses to build commerce products that drive sustainable business transformation.

Powered by our proprietary Virto Atomic Architecture™ and Virto Cloud, our Commerce Innovation Platform offers unparalleled flexibility, seamless integration, and extensive customization, enabling businesses to create unique, high-performance digital experiences and to drive sustainable business transformation across various industries.

Book a Discovery Call

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