VIAMEDICI

PIM as the Central Nervous System of Medical Technology

How Enterprise Product Information Management Drives Compliance, Safety, and Growth

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WHO WE ARE

Medical technology companies operate at the intersection of rapid innovation and immense regulatory pressure. This environment creates a chaotic and high-risk product information landscape, where fragmented data in spreadsheets and isolated systems are no longer just an inefficiency—they are a direct threat to compliance, patient safety, and time-to-market. Traditional data management methods can no longer keep pace with these challenges, leading to critical bottlenecks that compromise the entire product lifecycle.

The strategic implementation of an Enterprise Product Information Management (EPIM) platform is the definitive solution to these systemic issues. An EPIM system establishes a centralized, validated „Single Source of Truth" for all product-related data. It transforms product data management from a burden into a strategic asset by breaking down data silos and creating a unified, controlled, and efficient environment for managing product information.

This transformation enables MedTech companies to master global regulatory compliance (e.g., UDI, EUDAMED), mitigate patient safety risks, and accelerate global product launches. The Viamedici EPIM platform, with its integrated Multi-Domain Master Data Management (MDM) and Digital Asset Management (DAM) capabilities, is uniquely designed to handle the profound complexity of medical device product data. This positions Viamedici as the ideal partner for digital transformation within the industry.

This whitepaper analyzes the unique challenges of the medical technology sector, demonstrates the critical role of PIM in addressing them, and explains how companies can build a resilient and future-proof infrastructure through strategic data management. It invites executives to explore how Viamedici can help transform their data landscape and achieve a sustainable competitive advantage.

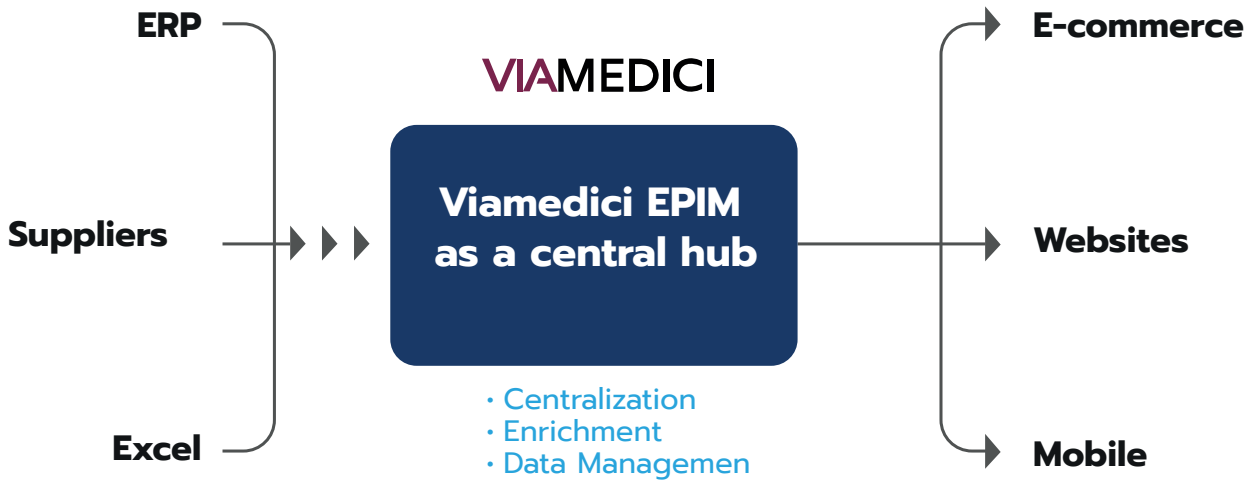
CHAPTER 1: THE SOLUTION IN FOCUS – PIM AS A STRATEGIC FOUNDATION FOR GROWTH

In a market characterized by complexity and high risk, leading medical technology companies require a stable foundation to remain agile and drive growth. This foundation is excellent data management. Rather than getting lost in the details of the problems, we begin with the solution: Product Information Management (PIM) as the core of strategic Information Supply Chain Management (ISCM).

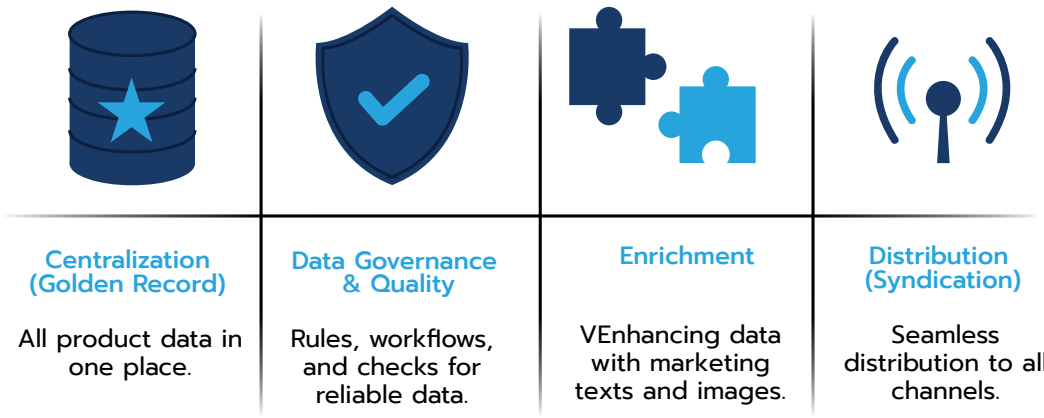
What is Product Information Management (PIM)?

Product Information Management (PIM) is the technological and procedural framework for centralizing, managing, enriching, and distributing all of a company's product-related data. A PIM system is not just a simple database; it is a strategic platform that ensures all teams, channels, and customers have access to accurate, consistent, and complete product information at all times.

It serves as a central hub that consolidates data from various sources and provides a Single Source of Truth for the entire organization, replacing error-prone, isolated solutions such as spreadsheets or non-integrated departmental systems. Within a strategic ISCM approach, PIM describes the digital value chain—from data acquisition and preparation to distribution. It is the digital mirror of the traditional logistics supply chain and represents the entire value creation of product data.



The Four Pillars of Success



A robust PIM system is built upon four fundamental pillars that work in unison to create a reliable foundation of information:

Centralization („The Golden Record"): At the heart of every PIM system is the consolidation of all product information from various sources (ERP, PLM, spreadsheets) into a single, authoritative repository. This „Single Source of Truth" principle is the hallmark of PIM, ensuring that all departments access the same accurate data, thereby eliminating data silos and preventing data duplication.

Data Governance & Quality: Data Governance is a business-critical domain that extends far beyond simple data maintenance. It involves defining a framework of rules, processes, and responsibilities for strategic information management. PIM systems actively implement this framework through workflows and validation checks to ensure data is accurate, complete, and consistent. Features such as record deduplication, format validation, and comprehensive change tracking (Audit Trail) are essential for maintaining high data quality and adhering to regulatory standards.

Enrichment: Beyond basic master data, a PIM enables the enrichment of product information with context-relevant content. This includes rich marketing copy, detailed technical specifications, digital assets such as high-resolution images, videos, and certificates, as well as localized information tailored for various global markets.

Distribution (Syndication): Once data is centralized, validated, and enriched, the PIM system ensures its seamless distribution to all required endpoints. This includes e-commerce websites, regulatory databases such as GUDID and EUDAMED, printed catalogs, and data feeds for distribution partners.

HIGHLIGHT: THE FOUNDATION – DATA GOVERNANCE & THE SINGLE SOURCE OF TRUTH

The Problem: Fragmented product data across ERP, PLM, Excel, and departmental silos lead to a situation where every department maintains its own version of the „truth." The results are inconsistency, inefficiency, and a high risk of operational error.

The Core Challenge: Clear accountabilities (Data Ownership) and cross-departmental approval processes must be established to create a reliable data foundation.

The Role of PIM: A PIM system creates the central „Golden Record" as the only valid source of truth. It is far more than just a data repository; it is an active platform that enforces established Data Governance across the entire organization through automated workflows and business rules.

Directly Measurable Business Benefits

The implementation of a PIM system leads to quantifiable improvements across key business areas, regardless of the industry:

- **Accelerated Time-to-Market:** By centralizing data and automating distribution processes, companies can bring products to market significantly faster. A study by Ventana Research found that half of the surveyed companies were able to reduce their time-to-market by more than 15% following a PIM implementation.

- **Increased Productivity:** PIM automates tedious, manual tasks such as repetitive data entry across multiple systems. This frees up valuable human resources for higher-value activities. According to Ventana Research, 75% of companies realized partial to significant increases in employee productivity after implementing a PIM.

- **Significant Error Reduction:** Integrated data validation models and rule engines detect and prevent costly mistakes—such as incorrect product specifications—before they ever reach the market. Studies have shown that PIM implementation can reduce product data errors by up to 80%.

The Viamedici Approach: With the Viamedici EPIM (Enterprise Product Information Management) suite, these benefits can be realized systematically. The platform is designed to efficiently and reliably maintain and manage even the largest volumes of data across the entire organization—and throughout the entire process chain.

By easily implementing policies, processes, version controls, and approvals, Viamedici creates the foundation for Excellent Data Governance. This transforms data management into a business-critical objective anchored directly within corporate management.

CHAPTER 2: THE BENEFITS FOR MEDICAL TECHNOLOGY – FROM COMPLIANCE TOOL TO COMPETITIVE ADVANTAGE

While the general advantages of PIM are impressive, the technology unfolds its full potential in the medical technology sector by directly addressing the industry's unique and high-stakes challenges.

Strengthening Patient Safety as the Highest Priority

Patient safety is non-negotiable. A „Single Source of Truth" ensures that all downstream systems—from labeling solutions and clinical information systems to hospital procurement platforms—receive validated and up-to-date information. This significantly reduces the risk of use errors with devices or medications by guaranteeing the accuracy of Instructions for Use (IFUs), specifications, and labeling. Studies have shown a 30% reduction in medication errors following PIM implementation.

Mastering Global Compliance

The manual submission of accurate, validated, and consistently formatted data to various authorities such as the FDA and EMA, as well as to databases like GUDID and EUDAMED, is extremely error-prone. A PIM system acts as a compliance engine, creating a „Golden Product Record" for global UDI (Unique Device Identification) submissions. Through standardized templates, automated validation rules, and a comprehensive audit trail for every change, the time required is drastically reduced, and the risk of regulatory rejections is minimized.

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Accelerating Global Market Launches

Launching a product in multiple countries requires adapting information to local languages and specific regulatory requirements. A PIM system significantly simplifies and accelerates this localization process. A central product data record can contain multiple language translations and regional regulatory attributes, which shortens the time-to-market while maintaining brand consistency across all borders.

Mastering Product Data Complexity

Medical devices encompass a wide range of categories, each with unique attributes and specifications. They often consist of numerous versions and variants. A PIM system offers the decisive advantage of linking products and their variants through a hierarchical data structure. Changes to attributes are automatically applied to subordinate products, allowing properties to be inherited by the variants. This ensures that all departments are always working with the correct specifications for every single product variation.

Enabling Efficient Recall Management

In the event of a necessary product recall, companies must be able to quickly and precisely identify every affected product, component, and distribution channel worldwide. A PIM's centralized database enables immediate and accurate identification of all impacted items. This streamlines the recall process, minimizes risk to patients, and protects the company's reputation.

Empowering Sales and Service Teams

Medical devices are often complex and require extensive knowledge for sales and service. A PIM system supports this process by centralizing and organizing relevant product data. Sales and service teams can access the most up-to-date and accurate information, which optimizes training and ensures they can effectively address customer inquiries.

Creating Future-Readiness and Enabling New Business Models

The industry is moving toward Value-Based Healthcare, where the ability to demonstrate a product's long-term value becomes decisive. A PIM system provides the precise device data (specifications, versions, maintenance schedules) required for integration with patient data from Electronic Health Records (EHRs) and for meaningful analytics. Furthermore, agile data management is a prerequisite for innovative business models such as Product-as-a-Service (PaaS). IoT-enabled devices offering value-based services like remote monitoring ease customer resource constraints and foster long-term customer relationships.

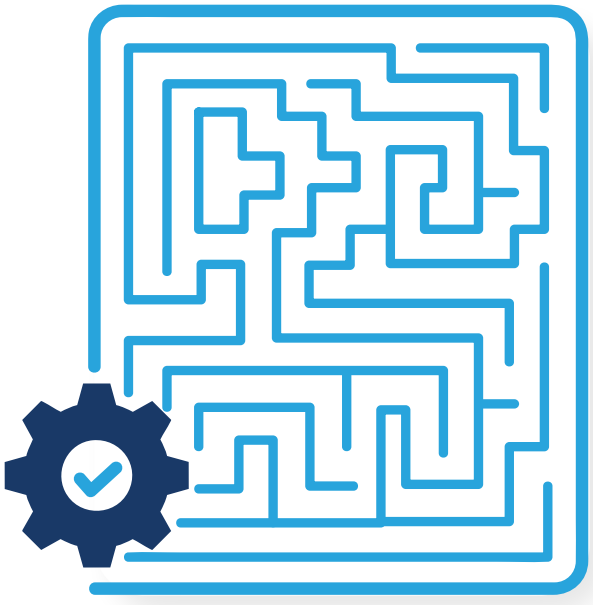
The Viamedici Approach Viamedici EPIM enables total control over product data, managing it with precision, care, and consistency. The system supports all compliance initiatives through role-based security settings and verifiable Audit Trails. The functional scope also includes escalation and control features for time-critical reviews and approvals. Additionally, Viamedici assists companies in secure data transfer by connecting applications and providing services for a Service-Oriented Architecture (SOA), which serves as the foundation for future-proof business models like PaaS.

CHAPTER 3: THE CHALLENGE – COMPLEXITY AND RISK IN DAILY INDUSTRY OPERATIONS

After establishing the immense benefits of a PIM solution, it becomes equally clear why traditional approaches can no longer meet today's demands. The medical technology industry operates within an environment of unique complexity.

The Regulatory Maze

Medical technology companies must navigate a dynamic and expanding web of global and regional regulations. This includes the FDA's Unique Device Identification (UDI), the Global UDI Database (GUDID), the EU Medical Device Regulation (MDR), and the European Database on Medical Devices (EUDAMED). The challenge lies not only in meeting these standards but also in keeping pace with their constant evolution, tight deadlines, and significant regional differences, all of which complicate cross-border compliance.



UDI FDA

Global UDI Database (GUDID)

EU Medical Device Regulation (MDR)

European Database on Medical Devices (EUDAMED)

Operational Complexity in Detail

Operational complexity is further amplified by several key factors:

Mergers & Acquisitions (M&A): These often lead to a duplication of data systems, creating isolated data silos that prevent a unified, enterprise-wide view of product information.

Technological Integration: The growing prevalence of IoT technologies and the integration of software and firmware as essential product components create new data layers. These layers must be managed, versioned, and documented with extreme precision.

Multiple Stakeholder: Product information must remain consistent and accessible for a wide range of internal and external stakeholders (manufacturers, suppliers, distributors, healthcare providers), often across multiple languages and jurisdictions.

HIGHLIGHT: THE COMPLEXITY TRAP – VARIANTS, HIERARCHIES, AND RELATIONSHIPS

The Problem: Medical devices are rarely standalone items; they exist within complex hierarchies (systems, sets, kits) and countless variants (size, material, software version).

The Core Challenge: Changes to a parent product must be consistently inherited by all associated variants. Furthermore, the correct version of an Instruction for Use (IFU) or a certificate must be inextricably linked to the corresponding product.

The Role of PIM: A PIM system masters this complexity through hierarchical data models and inheritance logic. It ensures that all relationships—between products, variants, and digital assets—remain accurate, synchronized, and up to date.

The „Compliance Tax"

The immense and fragmented regulatory burden acts as a „Compliance Tax." The manual effort required to aggregate data from disconnected systems and spreadsheets ties up valuable resources—both time and personnel—that would otherwise be available for core activities such as Research and Development (R&D), clinical trials, and product design. Consequently, inefficient data management actively stifles the innovation cycle, creating a significant opportunity cost for the organization.

The Viamedici Approach This is precisely where Viamedici EPIM steps in to reduce the „Compliance Tax." The platform provides maximum support for the design and transformation of business processes.

An integrated Interface Process Monitoring system supervises all existing workflow processes and interfaces during live operations, displaying detailed status updates and potential error conditions in a Management Panel. Complemented by messaging and escalation workflows, the system ensures that responsible employees are notified immediately regarding time-critical processes, keeping even the highest levels of complexity manageable.

CHAPTER 4: THE RISKS OF DATA CHAOS – WHEN PRODUCT INFORMATION BECOMES A LIABILITY

Without centralized, strategic management, product information transforms from a valuable asset into a hidden liability that undermines critical business processes and carries significant risks.

Internal Symptoms

The symptoms of inadequate product information management are omnipresent:

Data Fragmentation: Critical information is scattered across ERP, CRM, PLM, and countless spreadsheets. There is no reliable „Single Source of Truth."

Data Inconsistency: The same product may have different specifications across various systems—often the result of manual, error-prone data entry.

Lack of Auditability: Without a centralized system, it is nearly impossible to track changes and provide regulatory authorities with a clear Audit Trail.

Operational Complexity in Detail

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External Consequences

These internal symptoms manifest as tangible and costly business problems:

Compliance Failures: Inaccurate or incomplete submissions lead to regulatory rejections, heavy fines, and significant delays in market authorization.

Delayed Time-to-Market: The entire go-to-market process is bottlenecked by the laborious, manual effort required to aggregate and validate product information.

Risks to Patient Safety: Inconsistent or incorrect information on labels or in instructions can lead to the improper use of medical devices.

Supply Chain Inefficiencies: A lack of visibility into product data impairs the ability to forecast bottlenecks and optimize inventory levels.

HIGHLIGHT: THE LAST MILE – DATA FOR THE HEALTHCARE ECOSYSTEM

The Problem: Product data must not only be accurate internally but also be delivered to external partners such as Group Purchasing Organizations (GPOs), hospitals, and GDSN data pools.

The Core Challenge: Every partner has unique, specific requirements regarding data formats and attributes. Manually preparing and providing data for each individual channel is extremely inefficient and serves as a massive source of error.

The Role of PIM: A PIM system automates this „Syndication." It enables the creation of channel-specific export formats and ensures that all partners within the ecosystem receive consistent, validated data from a single, authoritative source.

CORE CAPABILITY	TRADITIONAL APPROACH (SPREADSHEETS, SILOS)	PIM-DRIVEN APPROACH (VIAMEDICI EPIM)
Regulatory Submissions	Manual data aggregation from various sources; time-consuming with a high risk of error; no end-to-end traceability.	Automated workflows; pre-configured validation rules for authority-specific formats; full audit trail for every data change.
Produkt-Versionierung	Disconnected files (e.g., Word, Excel) for each version; high risk of confusion between old and new versions; unclear relationships between products and components.	Centralized version history; clear parent-child relationships between product families and variants; consistent data for every iteration.
Global Localization	Separate, manual process for each region; redundant work for translations and adaptations; risk of inconsistencies across different markets.	Centralized "Golden Record" with multi-language attributes; efficient management of regional content and regulatory data; faster global time-to-market.

The Viamedici Approach For medical technology companies, the vision of a strategic PIM becomes a reality through the Viamedici EPIM Suite. A comprehensive management panel featuring analysis, reporting, and visualization functions ensures end-to-end transparency and control across all operations.

Processes can be steered centrally, allowing issues to be identified quickly and easily. Decision-makers can stay informed about the current status within the organization at any time—including via mobile devices. In this way, Viamedici EPIM effectively assists in eliminating the risks associated with data chaos and establishing data as a valuable, protected corporate asset.

CHAPTER 5: THE VIAMEDICI ADVANTAGE – AN INTEGRATED PLATFORM FOR MEDICAL TECHNOLOGY

To meet the multifaceted requirements of the medical technology industry, a simple PIM system is often not enough. Viamedici offers a comprehensive Enterprise Product Information Management (EPIM) platform specifically engineered to master the highest levels of complexity.

More Than Just PIM

The strength of the Viamedici platform lies in the seamless integration of several critical data management disciplines:

Master Data Management (MDM): The MDM capabilities extend beyond product data, allowing for the management of other vital master data domains—such as suppliers or locations—which is crucial for supply chain transparency.

Digital Asset Management (DAM): The integrated DAM ensures that all digital media assets—such as Instructions for Use (IFUs), certificates, and compliance documents—are versioned, approved, and correctly linked to the corresponding products.

Configure, Price, Quote (CPQ): For highly configurable medical devices, the CPQ functions draw directly from the validated data within the PIM to eliminate errors during the quoting process.

Intelligent Product Configuration and Guided Selling

Many medical products are highly configurable. Viamedici takes a decisive step further here with its Easy Configuration Platform (ECP). As a Configuration-as-a-Service (CaaS) solution, the ECP enables the creation of flexible configuration applications tailored to specific users based on the central product model.

Thanks to a powerful headless approach, lean and intuitive configurators can be deployed for sales teams, partners, or end customers without having to replicate the entire product logic in the frontend. This significantly accelerates innovation cycles and substantially enhances the user experience.

Industry Proof: Leading MedTech Companies Trust Viamedici

The Viamedici EPIM platform is not a theoretical solution; it is field-tested in the demanding day-to-day operations of the medical technology industry. Global market leaders—including Lohmann & Rauscher, pfm medical, Sarstedt, Greiner bio-one, Carl Zeiss, GHX, miltenyi biotec, and van der Ven—utilize Viamedici's universal digitalization platform to execute their digital business strategies, break down data silos, and deliver reliable content across all channels.

Proven Expertise in Complexity: The TRUMPF Case Study

The ability to master extreme complexity is a Viamedici hallmark. TRUMPF, a leading provider of machine tools with a portfolio of approximately 140,000 products, faced the challenge of modernizing a legacy product database. Ali Cin, Product & Service Owner PIM/MAM at TRUMPF, summarizes the success:

„From the very start, Viamedici EPIM helped us reliably map enormous complexity. With the PIM system, we were able to optimize numerous processes, free up resources, and achieve significant cost savings."

HIGHLIGHT: THE COMPLEXITY TRAP – VARIANTS, HIERARCHIES, AND RELATIONSHIPS

The Problem: The future of medical technology lies in data-driven business models such as Product-as-a-Service (PaaS) or participation in Value-Based Healthcare models.

The Core Challenge: These models require maximum data agility and the ability to flexibly link product data with usage or clinical data to demonstrate a product's real-world value.

The Role of PIM: A PIM system is the strategic prerequisite for this transformation. It provides the clean, standardized, and centralized data foundation upon which innovative, value-based services and new business models can be built in the first place.

Future-Proofing Through Technology

The platform offers future-proof advantages that are essential for the dynamic medical technology landscape, including:

Scalability and Composable Architecture: The platform is designed to grow with the enterprise and adapt seamlessly to evolving business requirements.

AI-Powered Functionalities: Artificial Intelligence is utilized to accelerate processes such as content enrichment and data validation, ensuring high-speed data management without compromising quality.

CHAPTER 6: YOUR PATH TO DATA EXCELLENCE – A STRATEGIC IMPLEMENTATION ROADMAP

The introduction of a PIM system is a strategic business initiative that requires a structured, deliberate approach.

Phases of Implementation

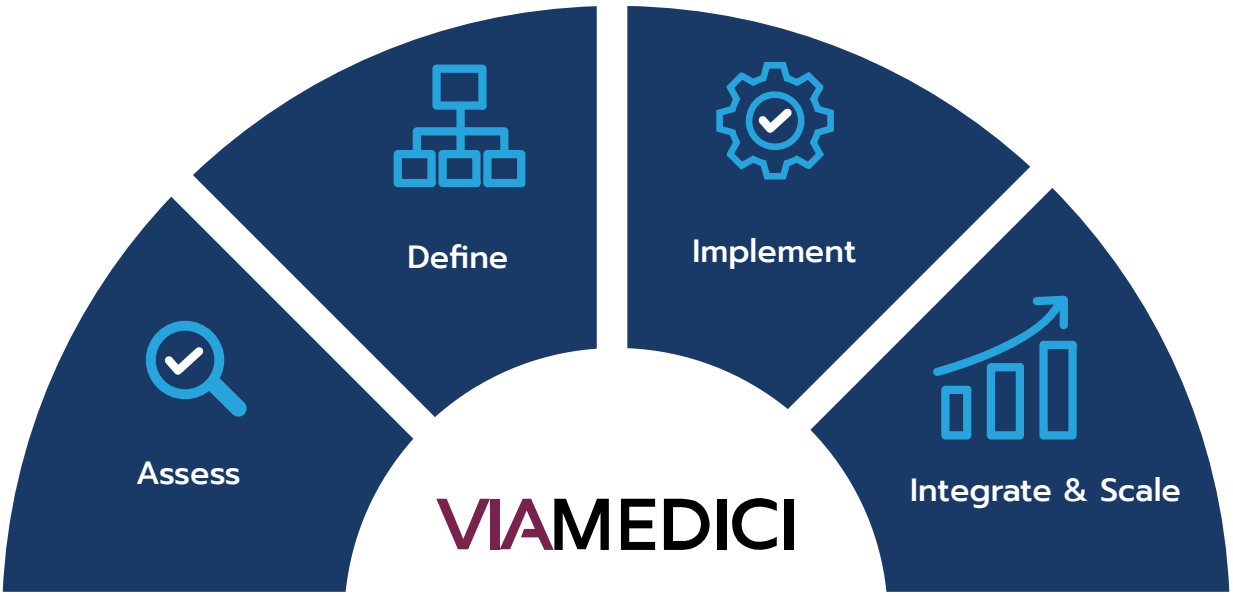
A proven roadmap for implementing an EPIM solution typically encompasses the following four phases:

1. **Assess:** A thorough evaluation of the current data landscape, identifying pain points and the specific needs of all stakeholders.

2. **Define:** Establishing a clear Data Governance Framework, defining data ownership and responsibilities, and designing the ideal data model.

3. **Implement:** Configuration and deployment of the platform, beginning with a high-impact pilot project to demonstrate value quickly.

4. **Integrate & Scale:** Connecting the PIM system with other core enterprise systems such as ERP and CRM, followed by a phased expansion across all product lines and global regions.



The Result

The successful implementation of this strategy creates an organization that is truly equipped for the future of medical technology: agile, compliant, and data-driven. Such a company is capable of innovating faster, entering new markets with confidence, and—ultimately—delivering safer and more effective products to patients worldwide.

Call to Action

To begin this journey, the next step is a dialogue. We encourage organizations to schedule a personalized demo or a strategic consultation with Viamedici's industry experts. In this session, we can discuss your specific challenges and develop a tailored business case for EPIM implementation that meets your company's unique requirements and strategic goals.