

# Managing the Complete Product Lifecycle: Innovation to Execution

a PLM Whitepaper  
Prepared by MatrixOne, Inc.

## Executive Summary

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Maintaining positive bottom line results and building superior products are main goals of world-class companies today. As such, the driving questions facing most enterprises are, “how can we do more with our resources?” and, “how can we innovate better, cheaper and faster while differentiating ourselves from our competitors in the eyes of our customers?” Product Lifecycle Management (PLM) is a strategic business approach that can help organizations achieve these goals while continuing to reduce costs, enhance and protect intellectual property, improve quality and shorten time to market.

The vision of PLM is to provide an environment to manage the complete product lifecycle, including processes, data and resources across the extended enterprise - without the need to overhaul the fabric and infrastructure of an organization.

MatrixOne believes that increasing an enterprise’s flexibility and agility to respond swiftly and effectively to new changes, new markets and competitors is the true hallmark of a world class PLM strategy. Specifically, we believe that three critical factors should drive an organization’s PLM strategy:

- **Innovation.** Enterprises must harness intellectual capital and innovation within the processes and organizations that touch a product.
- **Execution.** Cost reductions, quality improvements, condensed time-to-market and strong ROI can only be achieved if transparency, global program management and collaboration are evident across an enterprise’s value chain.
- **Speed.** Reconfigurable infrastructure, process and the independent choice of tools and technology are essential in providing speed and maintaining control, as opposed to merely doing things fast.

For an enterprise to be successful in today’s global markets, the choice of the right PLM solution and strategy is not an option – it is a competitive necessity.

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# Introduction

Product-focused companies recognize the need to continually bring compelling, reliable new products to market in order to maintain competitive advantage. Yet doing so in today's business environment seems nearly impossible for many companies. Difficult economic conditions, broader regulatory demands and severely restrained government and corporate IT budgets combine to make today's business environment more challenging and less profitable than at any other time during the past decade.

As a result, companies seeking to continuously introduce successful products must achieve that success faster and more predictably than ever before—while driving down costs at every stage. Today, many corporate executives believe they have already driven the excess costs out of their businesses and have optimized the profitability of their products through domestic and global outsourcing of product-related functions, such as design, development and manufacturing.

However, leading companies across a wide range of industries are continually finding new ways to eliminate costs and improve efficiency through the implementation of a new strategy, termed Product Lifecycle Management (PLM). These companies leverage PLM to speed the development and introduction of new products, while at the same time reducing the risks and costs associated with the operation of a global value chain of customers, employees, partners and suppliers. Today, PLM strategies are helping many of the world's leading innovative product companies address their most fundamental challenges, including:

- **Maintain visibility and control of new product investments:** To enable better decision-making and optimize portfolio planning, executives and other decision makers across the enterprise need to maintain accurate and consolidated visibility and control on a real-time basis into all product development initiatives.
- **Deliver the right products to the right markets:** To produce winning products that meet customer and market needs, marketing and product planning teams need to actively collaborate with other functional groups, customers and suppliers to thoroughly capture requirements and define new products, features and capabilities.
- **Maximize globally dispersed work forces and leverage low cost opportunities through global product development:** To optimize the cost benefits

associated with a design anywhere and build anywhere strategy and to effectively utilize offshore and outsourced resources, product development and operations must be able to connect design teams, partners, suppliers, outsourced manufacturing partners and other resources from across the globe in a single collaborative network.

- **Reduce unexpected product and project delays and increase customer satisfaction through *synchronized design and development*:** To compress development cycles, reduce critical errors and product rework, and enable their teams to quickly respond to changes as they occur, design organizations need to eliminate the significant barriers that exist between different design disciplines and to enable effective real-time collaboration.
- **Leverage expertise and improved product design and delivery by enabling *early supplier involvement*:** To improve the design, quality and cost benefits of supplier-furnished components for their end products, procurement organizations need to partner with strategic suppliers and engage them with product development “early and often” in all aspects of the development and sourcing process.
- **Manage product liability and regulatory compliance:** To mitigate product liability risks and ensure regulatory compliance, manufacturers need to ensure that they are managing product development and capturing all aspects of the product record for regulatory approval, warranty claims and product disposal.

PLM is gaining prominence as the next strategic enterprise application because of its ability to address any, or all of these challenges with fast ROI and tangible benefits. Moreover, certain PLM solutions can be deployed in multiple phases, allowing companies to earn 100% ROI from small, focused implementations that demonstrate success and can also be built upon to improve broader functional areas. This new ability to think big, start small and scale fast has significantly increased the growth rate of successful PLM implementations in numerous industries, including electronics, high tech, aerospace and defense, consumer packaged goods and automotive.

The uptake of PLM strategies and implementations is expected to continue. In fact, industry research firm CIMdata estimates PLM spending to reach \$5.25 billion by 2005.<sup>1</sup> Similarly, according to AMR Research, “Drafting a roadmap of a PLM strategy is essential to long-term success, even survival, for all product companies.”<sup>2</sup>

## What Exactly is PLM?

PLM represents the first truly holistic view of a company's products as they are developed, manufactured and brought to market. It incorporates all elements of product data, from original CAD designs to manufacturing Bills of Materials (BOMs), and ties that data to the critical processes and tasks that numerous internal and external teams undertake to develop and bring products to market.

PLM's emergence represents an evolution from Product Data Management (PDM). While PDM formed the collaboration backbone for product design and early product development groups, PLM has built upon that by including a much broader set of functionality, workflows, integrations and business processes to extend the collaborative backbone to a company's entire value chain of customers, employees, suppliers and partners. Thus, PLM represents an over-arching concept for navigating a product through its entire life while PDM is now viewed as a sub-process of PLM.

Essentially, PLM is to a company's product value chain what ERP is to its inventory and manufacturing processes. However, a well thought-out PLM strategy enables a company to adopt new improvements to its product development processes over time in order to avoid the lengthy, costly and complicated implementations that have been associated with ERP. PLM represents the single version of the truth that enables a company's value chain to most effectively collaborate to bring better products to market faster and more cost effectively. The following illustration depicts the major categories of enterprise software applications.



PLM addresses the complete lifecycle of products and fills in the product related gaps that were never before addressed by other major enterprise applications. PLM processes clearly interact with those supported by other enterprise systems, but the creative activity inherent in PLM distinguishes it from ERP and supply chain management (SCM), which support routine processes only. For example, sourcing in the PLM environment involves suppliers in the early stages of product design to speed the development of prototypes and associated early design processes. By contrast, the sourcing function within SCM takes place only after a product is designed and involves little, if any, strategic input from suppliers regarding a product's content.

To more thoroughly understand PLM's role in managing product-related information across the value chain, consider its use at a large semiconductor manufacturer which we will refer to as "ABC Semi."

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## The Need for PLM at ABC Semi

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With the advent of globalization, ABC Semi sought to take advantage of the cost and time-to-market benefits through the outsourcing of product design and manufacturing. However, the company's existing technology infrastructure could not support outsourced product design, global product development, multiple supplier relationships and enterprise-wide collaboration. The overwhelming number of systems and integrations needed to share product data and facilitate workflows between the various internal and external groups quickly made ABC Semi's global reorganization less beneficial than anticipated.

Adding to the pain of globalization, the company's main product – the integrated circuit, or chip – was becoming more complex and experiencing a shorter market life. New functionality requirements for chips meant that ABC Semi's products had to begin incorporating additional components, and for the first time, software. Moreover, customers were beginning to demand chip upgrades within six months of new product introductions.

The company realized that its future viability depended on its ability to speed products to market faster and to innovate more rapidly than ever before. The only solution was to tightly integrate and streamline its value chain of customers, design partners, suppliers and manufacturing resources. But to do so required best-in-class processes and a single, consistent version of product-related data to be shared across numerous groups, programs and functions.

ABC Semi adopted a PLM solution to meet its critical business objectives because a best-in-class PLM solution would allow ABC Semi to start small, think big and scale fast. Within eight weeks, ABC Semi had transformed its ability to capture customer requirements and incorporate them into new and existing product designs. The payback from that initial implementation would later allow ABC Semi to achieve enterprise-wide buy-in for its bigger PLM vision and ultimately deliver more innovative and complex products to market faster than ever – all at a lower cost.

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## How ABC Semi Succeeded

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Prior to adopting a PLM strategy, ABC Semi relied upon linear forms of communication (email, fax, and phone) between multiple groups when incorporating new customer requirements into finished products. This often led to problems in version control because product-manufacturing groups had little visibility into upstream changes to the product design. Frequently, the communications loop would break down, and the final version of an approved product coming out of the design team looked very different than the actual product that was manufactured and shipped to customers.

Using a PLM solution, groups from product management, design and manufacturing, both internal and external to ABC Semi, were able to view, in real-time, a single source of product-related information, including new requirements, approval status, comments, product markups and the most recent design changes. This single instance of product information shared by all helped to dramatically streamline ABC Semi's

product development value chain and at the same time, reduce excess costs resulting from product scrap and "swap-outs" at customer sites.

With the ROI received from its initial implementation of PLM, ABC Semi began to adopt PLM applications to address other areas of its value chain, including supplier integration and enterprise-wide program management. With its PLM strategy and system in place, ABC was able to make its move to globalization really pay off. The most salient benefits from the PLM implementation included the following:

- **Faster time-to-market through streamlined global collaboration**
- **Enhanced product reliability**
- **Effective use of outsourced/cheaper design functions**
- **Better processes in place to respond to future market requirements**
- **Ability to view "at risk" projects and re-allocate resources accordingly**

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As PLM continues to prove itself in the marketplace, its recognition is growing in boardrooms as a strategic, must-have strategy and technology solution. At the same time, the popularity of PLM among corporate executives has led numerous software companies to throw their hat into the PLM ring. Companies considering PLM solutions need to be aware that the PLM market, like other enterprise application markets before it, has its share of solution providers that are true subject matter experts as well as vendors trying to force-fit tangential solutions that require excessive consulting and systems integration efforts. To ensure the highest levels of productivity and benefit from PLM, companies should demand a number of key capabilities from a packaged PLM solution, including:

- A PLM backbone designed for large scale, secure cross-enterprise deployments
- A broad set of integrated applications for the complete product lifecycle
- Dynamic business schema with built-in process modeling capabilities
- A common, low-footprint integration for all design and desktop tools
- XML-based interoperability to other enterprise applications

Because each capability is critical, it is worth spending some time to understand each and its impact on product development, market success and ultimate profitability.

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## The PLM Backbone

Serving as the common infrastructure through which all PLM and non-PLM applications will communicate, the PLM backbone must provide open standards support for leading operating systems, application servers and databases. At the same time, it must be able to distribute across an enterprise and its value chain all product-related files and associated data (in the form of metadata) and make it all work as if it is one single, logical instance. This will provide tremendous time and cost savings, as people in various groups can always work with the latest single version of the truth, no matter where they are or which application they are using.

Buyers must beware of PLM solutions that require users to login more than one time if using multiple applications or if accessing data in different

geographies. This means that the underlying PLM backbone is unable to provide one single, logical view across the value chain and the globe, leading to miscommunication and product errors. This inability to scale will also require companies to purchase redundant hardware and software for use at each individual location, significantly raising the cost of implementation.

Finally, a PLM backbone should support both J2EE and .NET standards. Such support will allow users to leverage their current infrastructure or choose to upgrade with any future technology choice, enabling long-term competitive advantage through optimized capabilities.

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## A Broad Set of Integrated Applications

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It may seem obvious that a valuable PLM environment requires applications that cover the full PLM value chain, from design collaboration to product development and sourcing. But the fact is that very few vendors offer out-of-the-box processes, configurability and functionality across the complete product lifecycle. Buyers should check this closely.

Of equal importance is that all PLM applications are deeply integrated. Effective PLM applications must be architected so that they perform well on their own or as part of a broader solution. For example, consider the early challenges faced by ABC Semi. The company needed to respond more quickly to market demands. By using a PLM environment with fully integrated applications that extend from the Product Management domain to the Manufacturing domain, ABC Semi was able to significantly speed the process of capturing market requirements and incorporating them into manufactured products.

Specifically, ABC Semi's U.S.-based marketing team and Asia-based manufacturing groups viewed very different PLM applications. However, the fully integrated nature of the applications allowed the marketing team to create a conceptual product and a conceptual product Bill of Materials (BOM) in the

Product Management application. The Engineering application then translated the conceptual product into a real-life product and a manufacturing BOM suitable for the Asian manufacturing plant. With an additional product sourcing application integrated into these first two applications, strategic suppliers could view the manufacturing BOM and approve it or recommend changes based on product lead times, quality or other critical criteria.

The benefits of having a single source of product information are clear, as valuable time was saved throughout the ABC Semi value chain with the elimination of multiple manual steps. Costly mistakes were also avoided as all groups began working off a single version of the truth concerning product data. Thus, having a broad set of PLM applications becomes truly valuable once there is seamless integration of those applications. Leading PLM environments provide this capability out-of-the-box.

Finally, if applications have been architected for seamless integration, companies with tight budgets can implement PLM in stages, plugging in additional applications as needed. This allows companies to realize benefits from smaller, faster implementations and then self-fund broader implementations over the long term.

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## Dynamic Business Schema

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Focused PLM solutions will have built-in processes and workflows based on industry best practices. However, every product company has its own special, long-standing data types or unique processes that provide it with a competitive advantage. Therefore, PLM environments must provide dynamic business schemas that enable companies to define data types, relationships between data types and model specific product lifecycle processes to fit their unique capabilities and needs.

Having the flexibility to configure new PLM processes as time goes by helps companies

respond to changing market conditions. As we saw with ABC Semi, there was a sudden new market requirement to incorporate software and additional components into the company's core chip products. This required an entirely new set of processes around sharing hardware and software designs with third parties who would design the exterior package. Without the ability to quickly configure its PLM processes, ABC Semi would have faced either an expensive integration of new applications or run the risk of slowing down its value chain. Upgradeable "configurability" provided ABC Semi with a continued competitive advantage.

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## Common, Low-footprint Integration for Leading Design and Desktop Tools

Product companies often leverage a variety of disparate design and authoring tools when various groups become involved in product development. This can grind product development efforts to a halt, because one group of people has no idea how to access or manipulate the data coming from another group using different tools. The problem becomes magnified as companies outsource their designs and push to extend their value chain of partners and suppliers. Again, leading PLM environments can produce dramatic time and cost savings in this area.

Web-based PLM environments that provide access to any thick client obviate the need for painful integration of desktop tools. With all these tools utilizing the same integration framework,

communications take place via HTTP or HTTPS at a distributed server level. This means that users only need to download a small Web applet to the desktop tools they are using in order to communicate seamlessly with other groups and tools. Moreover, IT administrators can deploy integration capabilities worldwide via the Web, with no need to physically install hardware and software in different geographies.

As a result, "follow-the-sun" design and manufacturing becomes a reality. IT resource requirements are also minimized because users can leverage a common infrastructure across multiple geographic locations, making administration and support simple. Ultimately, this saves companies time and money and focuses their people on innovation and product quality.

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## XML-based Interoperability

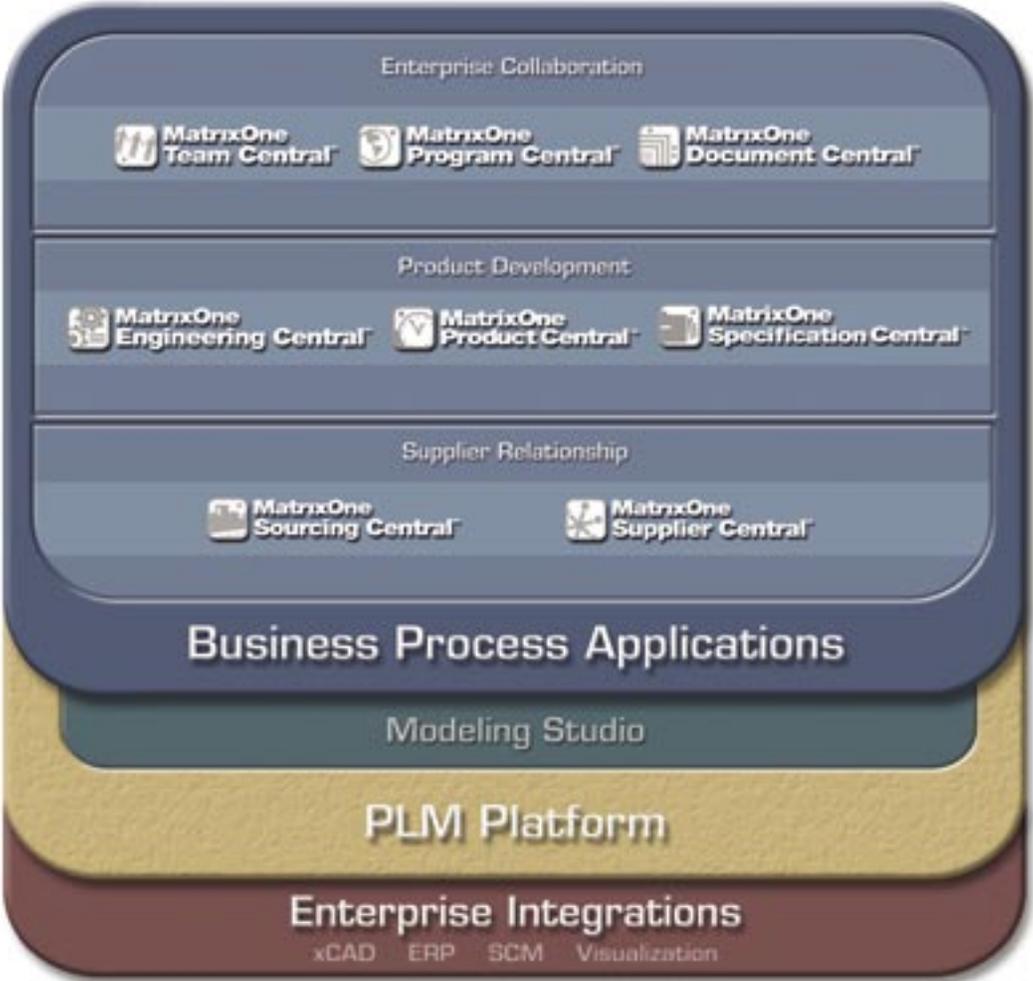
Many companies have adopted the latest ERP and supply chain tools equipped with XML interfaces for exchanging data with any other XML-enabled system. This represents a tremendous opportunity for companies with XML-capable PLM systems, because instantaneous sharing of data between ERP, SCM and PLM will enable companies to perform electronic RFQs, electronic bidding and electronic contract awarding with suppliers directly and securely across the firewall.

This Enterprise Application Integration, or EAI, would help to streamline the product development and sourcing processes. Doing this would cost almost nothing, since the XML-based communications can run over any XML hub already in place, such as those hubs offered by IBM Websphere, BEA's WebLogic or WebMethods.

# Introducing MatrixOne PLM

MatrixOne has focused solely on PLM strategies and solutions for over eight years and provides numerous product leaders, such as GE, P&G, Toshiba and Honda with PLM environments that help these companies optimize their global product value chain, reduce costs and speed products to market.

Core to the success these leading product companies experience with MatrixOne PLM is the incorporation of the five critical PLM capabilities described earlier. These capabilities are apparent in the Matrix PLM Platform's core technology, as well as each of the process-based and task-based applications that run on it. Figure 3 below depicts the MatrixOne PLM environment known as Matrix10. The heart of the environment is the Matrix PLM Platform, which provides the flexible, scalable architecture that makes world-class PLM possible.



The Matrix10 PLM environment provides product companies with all the critical PLM capabilities through three completely integrated components that provide the full breadth of PLM; the Matrix PLM Platform, Business Process Applications and the Enterprise Integrations.

# The Matrix PLM Platform

The **Matrix PLM Platform** serves as the foundation for the overall Matrix10 environment and is the underlying engine for PLM applications, business process modeling capabilities and third party system integrations. Standards-based and highly scaleable, the Matrix PLM Platform was designed to support global, enterprise-wide deployments as well as inter-enterprise collaboration throughout the value chain.

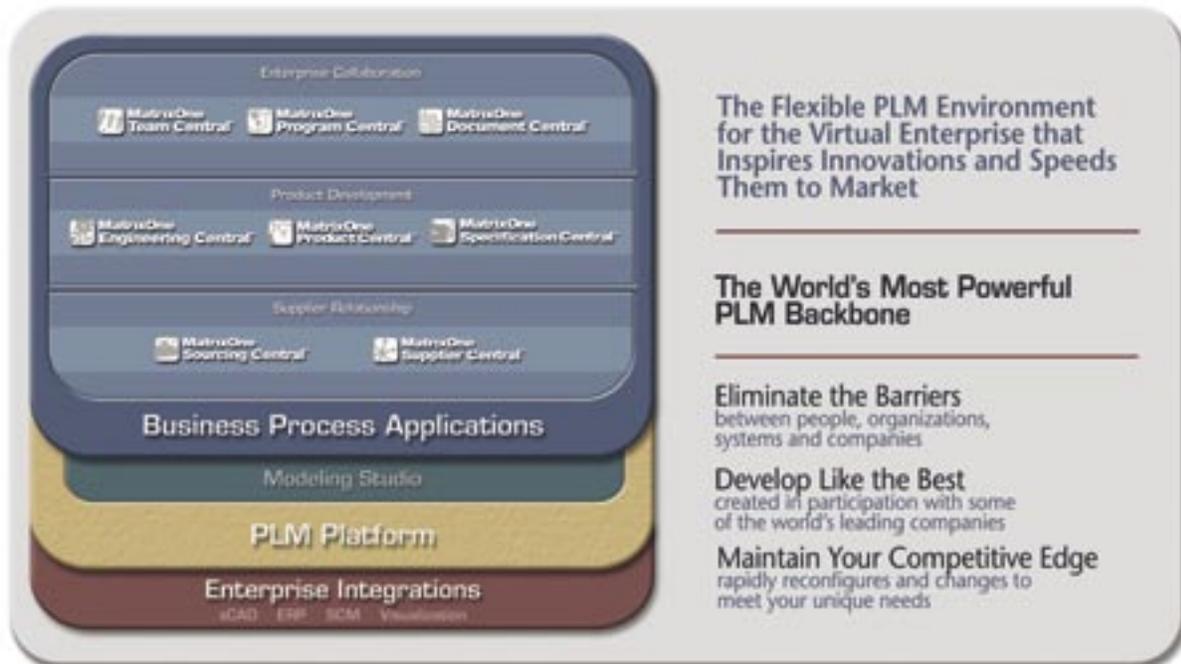
The Matrix PLM Platform provides standards-based support for the most common elements of enterprise information infrastructure. Specifically, it supports:

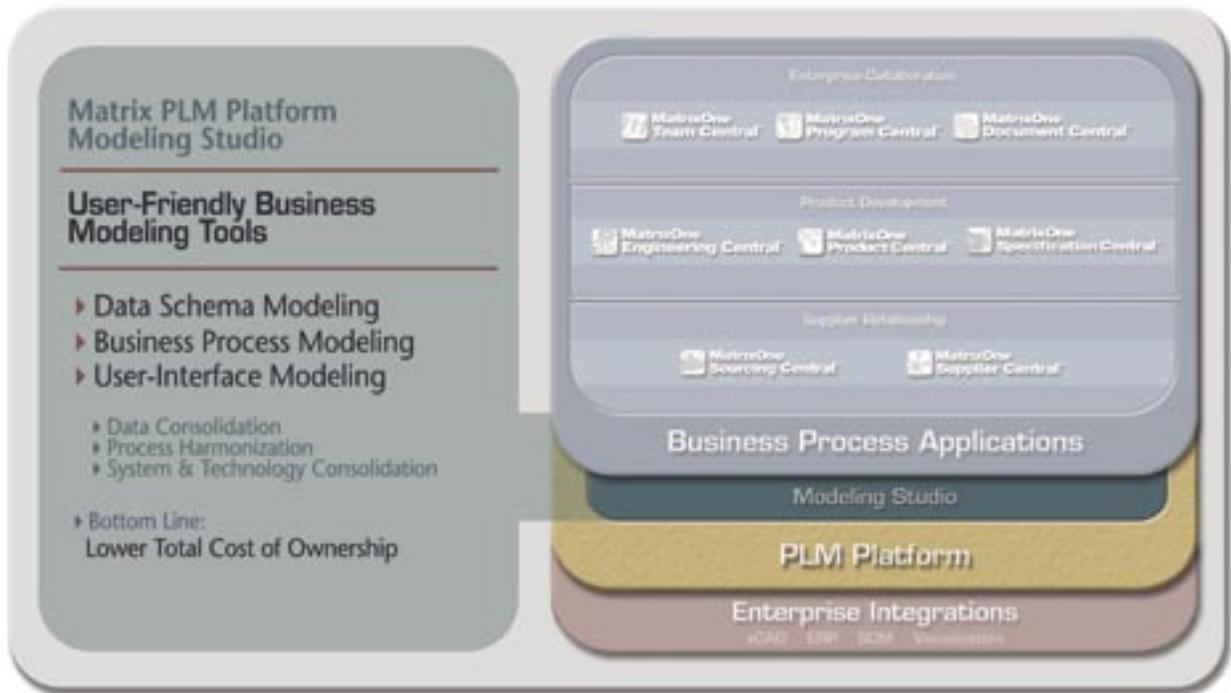
- Oracle and DB2 at the database level
- All leading operating systems (IBM, HP, Microsoft and Sun), Red Hat for Linux support
- Java, XML, C++, C, JNI, EJB and RMI
- NET8, SSO, LDAP, HTTPS, PKI, digital certificates, 128 encryption and reverse proxies
- Application server support for IBM, BEA, Sun and Tomcat
- J2EE compliance
- .NET interface
- Apache
- MCAD, EDA, and desktop tools
- Integration to CRM, ERP, SCM and other leading and "home-grown" enterprise applications

MatrixOne provides this openness and standards-based support without sacrificing security across a company's value chain. The Matrix PLM Platform provides advanced LDAP integration, allowing for common authentication and administration across all users and applications through single sign-on. Additional security is provided through support for digital certificates and advanced two-factor smart card authentication of all users. This allows companies to continuously collaborate with new suppliers and partners without losing control of security or their intellectual property.

The platform's XML communications capabilities enable organizations to seamlessly couple Matrix10 to other third-party enterprise systems, such as ERP, SCM and CRM as well as leading B2B exchange server technologies, to leverage those systems for greater returns.

Additionally, the Matrix PLM Platform offers an XML API set that allows for open communication with XML exchange servers, such as those from WebMethods and CrossWorld, with full support for web services through WSI and WSDL interfaces.





The final, and perhaps most important element of the MatrixOne PLM Platform is the Modeling Studio. The MatrixOne PLM Modeling Studio is a powerful set of tools for business process modeling that have formed the core of MatrixOne’s PLM environment for years. This is the primary reason leading product companies rely on MatrixOne for long-term competitive advantage. Through tools that incorporate work breakdown structure and folder structure, process documents, reference URL links and task deliverable document templates, companies have been able to continuously upgrade their business processes to adapt to new market requirements, suppliers, partners, acquisitions and product changes, all in real time.

Companies have also leveraged the MatrixOne PLM Platform’s Modeling Studio to meet the following demands:

- Six Sigma
- PACE
- ISO9000 Methodologies
- NPDI Modeling

With intuitive, easy-to-use tools, companies can dynamically model and configure business processes and schema, user interfaces and infrastructure options without additional coding or disruption to business operations. Over the long-term, the cost of change becomes far lower than it is for systems that require new programming to affect system behavior.

# MatrixOne Business Process Applications

**MatrixOne Business Process Applications** blend role-specific functionality with world-class collaboration to enable workers in diverse functions and geographies to come together and drive products to market faster than ever.

The applications enable geographically dispersed groups to stay connected through access to real-time, detailed information about product content, programs, projects and deliverables. Insight is instantly gained into product/project critical-to-quality metrics, risks, financials, estimate versus actual and status. With all applications feeding into a single federated database—accessed through a common interface—users can easily establish cross-functional teams and gain consolidated, role-specific views of activities, assignments and dependencies.

Having such information at the fingertips of executives means that a company can gain real-time visibility into programs and projects and realize the following benefits:

- Faster Go/No-Go decisions to eliminate marginal projects and keep high-ROI projects on track
- Predictable product/project results
- Proper alignment of resources to the most important projects
- Improved quality and innovation through faster decision cycles



MatrixOne’s Business Process Applications also provide functionality for the specialized roles involved in product planning, product development, product sourcing and manufacturing enablement. Spanning the entire product lifecycle from conception of a new product to its delivery, these out-of-the-box applications solve the specific needs of role-based knowledge workers across the organization. Since these applications were all developed for the Matrix platform, they are seamlessly and completely integrated with each other and with the collaborative applications. Thus, changes made to product-related information in one application become instantly reflected in all other applications. This is critical to maintaining a single version of the truth across the value chain.

Following are brief descriptions of the Business Process Applications:



**MatrixOne Team Central** is an intuitive Web-based application that offers a secure, tightly structured, virtual workplace that enables ad-hoc collaboration for cross-functional and geographically dispersed teams. Members can collaborate on documents and structured product data such as parts and request for quotes (RFQs) through discussions, notifications, alerts, instant messaging, online conferencing and workflow/approval processes.

To increase data-sharing capabilities, MatrixOne offers a rich series of integration solutions that seamlessly integrate MatrixOne Team Central and other mission-critical applications. With MatrixOne Team Central, companies can:

- Easily and effectively create secure collaborative “WorkSpaces” for virtual teams
- Collaborate, in context, on documents and structured product data such as parts and RFQs
- Bring suppliers and partners into the project team early and throughout the product development process

 **MatrixOne  
Program Central™**

**MatrixOne Program Central** enables companies to efficiently manage complex programs and projects that depend on extensive collaboration across global value chains of employees, customers, suppliers and partners. Through project dashboards, this application provides management with real-time visibility into a project's status in terms of process, costs and benefits.

MatrixOne Program Central's flexibility makes it possible to manage all types of projects, including new product introduction, Six Sigma and information technology. With MatrixOne Program Central, companies can:

- Drive consistent approaches in project execution
- Manage project costs, benefits and risks
- Link projects directly to active business processes

 **MatrixOne  
Document Central™**

**MatrixOne Document Central** provides a packaged document management solution that enables users to organize, find and share files collaboratively across global teams. Since documents play a strategic role in a company's ability to bring the right products to market, ensuring that the right files (and versions) are being shared across the value chain is critical.

MatrixOne Document Central, a comprehensive document management system, enables organizations to maximize efficiency and reduce the costs associated with out-of-date information, while also reaping the scalability and flexibility benefits of the Matrix10 PLM environment. With MatrixOne Document Central, companies can:

- Provide a secure common location for accessing company documentation
- Meet dynamic company needs with a configurable and flexible system
- Provide interoperability across processes in the value chain

 **MatrixOne  
Engineering Central™**

**MatrixOne Engineering Central** manages product-engineering data and provides the ability to electronically define, edit, manage, distribute and view product engineering data and processes across the enterprise and global value chain. Users can manage 2D and 3D design data and create and collaborate on part information, BOMs and product structures, associated design and manufacturing documentation, engineering change requests (ECRs) and engineering change order (ECO) information and processes. With MatrixOne Engineering Central, companies can:

- Drastically reduce the quantity and cycle times of ECRs and ECOs
- Reduce scrap and rework caused by information gaps between engineering and manufacturing
- Obviate the need for redundant data entry
- Lower the cost of global product development

 **MatrixOne  
Product Central™**

**MatrixOne Product Central** allows users to electronically define, edit, manage and view product definition across the enterprise and global value chain. Users can also leverage the application to create and collaborate on product requirements and features and create generic BOMs and product structures associated with engineering part numbers, documentation, information and processes. With MatrixOne Product Central, companies can:

- Ensure that all customer requirements are delivered in products
- Reduce unit costs by communicating product requirements and iterating conceptual designs early in the lifecycle
- Reduce re-work by ensuring that product configurations are validated against the most current product definitions



## **MatrixOne Specification Central™**

**MatrixOne Specification Central** was developed as a result of best practices and industry expertise provided by vertical industry leaders such as Procter & Gamble. This application enables companies to manage all of their specifications in a single global management system that allows for specification development, review, approval and distribution. With MatrixOne Specification Central, companies can:

- Shorten package and product development cycles
- Improve first-time quality and reduce product recalls
- Enable buyers to track specific high-cost materials
- Eliminate errors due to supplier miscommunication
- Drive specification standards throughout the enterprise



## **MatrixOne Sourcing Central™**

**MatrixOne Sourcing Central** enables companies to manage the product sourcing process across the organization, both for new product introduction and ongoing program and commodity purchasing. Users can achieve real-time collaboration between engineering, purchasing, quality groups, global partners, suppliers and customers. This type of early and frequent integration between suppliers and product development teams means that companies can eliminate massive amounts of waste caused by designing the wrong parts into new products. Rather than locking down a design, building prototypes and finding out later that products with a better fit and lead time were available, companies can now obtain critical supplier feedback as early as possible to minimize costly design errors. With MatrixOne Sourcing Central, companies can:

- Transform sourcing into a true competitive advantage
- Improve supplier performance while reducing costs
- Increase aggregated purchases and improve contract negotiations
- Improve collaboration between engineering, purchasing and suppliers



## **MatrixOne Supplier Central™**

**MatrixOne Supplier Central** allows companies to streamline supplier relationship functions, including quality management, supplier development and part quality planning. Users can leverage Supplier Central to track and maintain relevant supplier information through “scorecards” that include report metrics on plants, certifications and supplier capabilities. With MatrixOne Supplier Central, companies can:

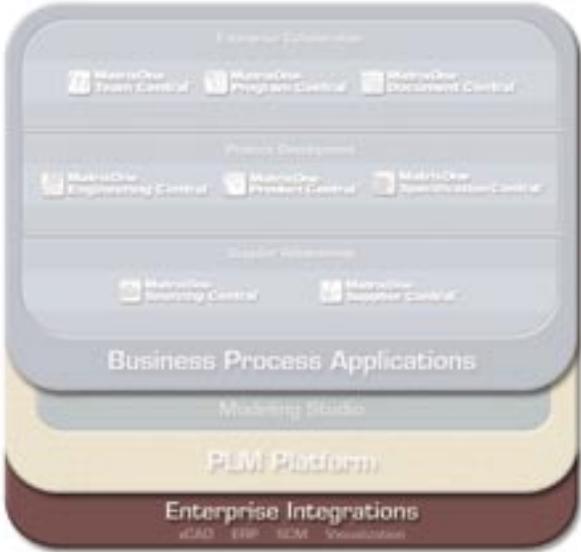
- Maximize the quality of the supply base
- Securely collaborate with suppliers, providing them with direct access to product information earlier in the development process
- Make better sourcing decisions based on supplier capability and quality

# Enterprise Integrations

Because the MatrixOne PLM solutions draw information from and optimize numerous enterprise information systems, integrations are key to enabling seamless data sharing between Matrix10 and third-party enterprise applications and tools. Matrix10 incorporates an integration exchange framework, or IEF, that enables organizations to standardize integration efforts across multiple, third-party desktop authoring tools, greatly reducing deployment overhead and IT support costs.

Matrix10 provides simple integrations to the following authoring tools:

- VisView
- Documentum
- SolidWorks
- Solid Edge
- Lotus Notes
- MicroSoft Office
- MicroStation
- DOORS
- Pro/E
- Pro/I
- Clearcase
- Autodesk Inventor
- Catia v4
- VPM
- Catia v5
- UniGraphics
- iMAN
- Mentor Graphics
- Cadence
- SDRC IDEAS
- Oracle MFG
- JDE World/OneWorld
- ME10
- MFG/PRO MFG
- Baan ERP
- XML Exchange
- Veribest
- AutoVue
- Info Central
- AutoCad
- MIM
- OHIO-DA (InterComm)
- webMethods
- SAP ERP



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## Industry Focused PLM Solutions From MatrixOne

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In addition to providing the critical capabilities of a best-in-class PLM environment, MatrixOne uniquely provides industry-specific PLM solutions that can be rapidly implemented. Leveraging the flexibility in the Matrix PLM platform, as well as MatrixOne's experience in Automotive, Consumer Goods, Electronics, High Tech and Aerospace & Defense, MatrixOne provides industry-specific PLM solutions right out-of-the-box. For companies in these major industries, ROI can be realized even faster as fewer IT resources are required to adopt world-class processes across the product value chain.

Acting as the single version of the truth for all product-related information, processes and functions, the MatrixOne PLM environment helps product companies address their most pressing challenges:

- Maintain *visibility and control* of new product investments
- Deliver the *right products* to the right markets

- Maximize globally dispersed work forces and leverage low cost opportunities through *global product development*
- Reduce unexpected product and project delays and increase customer satisfaction through *synchronized design and development*
- Leverage expertise and improved product design and delivery by enabling *early supplier involvement*
- Manage *product liability and regulatory compliance*

By eliminating the barriers between people, organizations, systems and companies, MatrixOne PLM creates a single, secure PLM environment for the value chain. Thanks to the most flexible architecture in the industry, combined with superior out-of-the-box functionality, product companies are leveraging MatrixOne PLM today to adopt world-class business processes and maintain their unique competitive advantage.

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## Conclusion

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Product-focused companies recognize the need to continually bring compelling, reliable new products to market in order to maintain competitive advantage. As a result, innovative companies across a wide range of industries are adopting PLM strategies and solutions to speed the development and introduction of new products, while at the same time reducing the risks and costs associated with the operation of a global value chain of customers, employees, partners and suppliers.

1. CIMdata, *PLM Market Analysis Report for 2002*, July 2003

2. AMR Research, *Product Companies Need a Roadmap to Tackle PLM Technology*, March 2003

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### **About MatrixOne**

MatrixOne, Inc. (NASDAQ: MONE) is a recognized leader in delivering collaborative Product Lifecycle Management (PLM) solutions. Together with our partners, we provide flexible solutions that unleash the creative power of global value chains to inspire innovations and speed them to market. MatrixOne's global customers represent the aerospace/defense, automotive, consumer products, general machinery, high technology and life sciences industries, and include GE, Procter & Gamble, Philips, Siemens, Agilent Technologies, Johnson Controls and Honda. MatrixOne is headquartered in Westford, Massachusetts with locations throughout the world.



210 Littleton Road, Westford, Massachusetts 01886 T. 978 589 4000 F. 978 589 5700 MatrixOne.com

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