A ROADMAP FOR GLOBAL MANUFACTURING EXCELLENCE

White Paper

CONTENTS

ABSTRACT

Manufacturing has gone global. Production facilities and supply chain networks are distributed across the world to best meet the needs of a highly diverse, dynamic group of customers. Leading firms are racing to standardize and harmonize their processes and systems on a global scale in an effort to ensure the right products are delivered on-time, on-quality, and on-volume. The first step to accomplish this goal is selecting the right business partners with the track record of successful global deployments. The next step is to actually implement a system capable of delivering visibility, control, and synchronization of your business processes to attain operational collaboration for manufacturing excellence on a global scale.

Applications and solution experiences on Dassault Systèmes **3D**EXPERIENCE® platform and from the Dassault Systèmes DELMIA® brand and others provide applications and capabilities to integrate processes for manufacturing and the supply chain. You can improve management and efficiency for overall operations and provide visibility for all stakeholders throughout the product development process for better decision making and execution.

The goal of this white paper is to educate IT and Line-of-Business executives on what approach is now possible—validated by two case studies—when utilizing an IT platform-based approach to deploy a global solution for Manufacturing Operations Management (MOM). This approach can deliver a globally harmonized plant network that can yield operational and agility benefits and competitive advantage across your organization. And, with the necessary agility to easily support global continuous process improvement, the benefits of your implemented solution will continue to increase over time.

This white paper starts with a discussion of the high-level market drivers impacting global manufacturers. These market trends are examined through the lens of a next generation solution, highlighting three competitive differentiators necessary for success. The white paper concludes with a roadmap to help manage the necessary changes across your internal business processes and technology architecture to make this vision a reality.

INTRODUCTION

The world is no longer flat. Traditional epicenters of industrial activity have been replaced with new centers located in Brazil, India, Korea, Poland, and Thailand, to name just a few. This change in competitive landscape has been driven by many factors, including taxes, energy needs, regulatory requirements, and access to talent issues that have put traditional industrial leaders at a disadvantage.

At the same time, a new breed of global consumer has emerged that is more diverse, demanding, and connected than ever before, thereby raising product quality and service delivery expectations to unprecedented levels. The middle class is becoming a reality all over the world, and serving these customers is perhaps the greatest opportunity for growth many global companies will have for a generation.

The financial crisis of 2008 added yet another challenge as capital markets dried up and a lack of credit put new focus on cutting costs, deferring capital investment, and preserving cash.

As a result of these (and other) forces, companies have taken a hard look at operations, with an eye to cutting costs, improving productivity, and increasing operational responsiveness. These trends have significantly impacted manufacturing operations. Companies understand that they will not succeed if they are not competitive with the level of quality, innovation, efficiency, safety, and environmental stewardship delivered within both their home country and in the various countries where they operate.

A RECIPE FOR SUCCESS

Despite these tremendous challenges, a new breed of manufacturing leader has emerged that has identified a winning recipe for success. These pioneers recognized that a new perspective was needed for how to best manage their global manufacturing operations. The rest of this white paper examines the capabilities that are needed for success as validated through case study review on two industry leaders—L'Oréal and Cummins, Inc.—and how they overcame the operational complexity faced by implementing a global solution for MOM.

Let's take a look at the profile of these two companies:

- **L'Oréal**—Serves customers located in 130 different markets with a production footprint that spans nearly 40 plants. L'Oréal is a world-class brand, so the attention to brand integrity is acute. The company has very high quality standards, while at the same time, it must be in compliance with a host of environmental and regulatory compliance initiatives.

- **Cummins, Inc.**—Serves customer located in 190 different countries with a production footprint that spans nearly 80 plants. Cummins has big ambitions for growth, especially in emerging Brazil, Russia, India, China, and South Africa (BRICS), and other markets. Attention to process consistency and quality is paramount to ensuring consistent product with the highest quality standards is delivered to every customer, every time.

Global companies are now reaching new markets on a scale never seen before. For example, L'Oréal talks about adding one billion new customers over the next decade. Cummins forecasts total revenue to grow from $18B in 2011 to $30B in 2015, representing a 14% CAGR that is dependent upon strong growth in emerging markets.[1] Companies need growth to remain viable. The key is how to profitably achieve this growth while sustaining manufacturing operations excellence, thereby ensuring customer satisfaction and brand integrity.

Based on the knowledge and experience gained by working with industry leaders L'Oréal, Cummins, and others, mastery of four organization skill sets emerged as being critical to achieving a successful global manufacturing strategy:

- **Global visibility, control, and synchronization across operations**—Scale is one of the most important advantages a global manufacturer has, but if not managed properly, it can quickly turn into a burden. Successful global manufacturers manage the plant as part of an integrated supply and demand network, allowing the company to optimize working capital and customer service to ensure that the right product is delivered to the right customer, at the right time, and at the lowest cost possible.

- **Innovation and new product introductions**—All it takes is one look at Apple®, now one of the world's most valuable companies, to see that innovation and new products can be one of the most effective tools for a company to grow by developing new markets, customers, and growth.[2] Key requirements for successfully launching new products are adaptability, responsiveness to change, and process improvement.

- **Quality and product safety**—Many companies talk about having the necessary "social license" to operate in foreign markets, which is often more important than the actual regulatory license. To maintain this social license, global corporations must ensure that the products they deliver to market are of high quality and safe. They must also ensure that if there is an issue, then there are the necessary traceability systems in place to execute an effective recall. And, it is important today that the facilities developed by global corporations are designed and operated as "green" entities with sustainability a key design and operations focus so they do not negatively impact their local communities and environments.

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1   "Analyst Day Meeting Presentation" by Cummins, dated September 13, 2011;
    http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTA3MDAxfENoaWxkSUQ9LTF8VHlwZT0z&t=1

2   For more details, see: "The Building Blocks of Manufacturing Innovation," http://bit.ly/J7kn1Z

- **Process standardization and continuous improvement**—The pace of innovation in global manufacturing operations dictates the need for agility. It is simply impossible to expect that production processes can remain static while adapting to new market needs, new distribution models, and new materials requirements that are part of the next wave of consumer desires. Therefore, global manufacturers must be able to perform process improvement on a global scale—across multiple locations—while still being capable of governing these processes to ensure standardization of corporate best practices.

The next section of this white paper examines how a next generation MOM solution can help a company effectively deal with these issues.

THREE PILLARS OF GLOBAL MANUFACTURING EXCELLENCE

Industry-leading manufacturing solutions offer a structured approach to delivering technology, services, and best practices in a way that helps to ensure success. Based on the experience of working with nearly 200 customers with operations in 40+ countries over the past two decades, Dassault Systèmes' delivery of such a solution rests on three pillars (see Figure 1):

- **A global operations platform** to enable a set of standardized processes that are easily created, updated, and distributed across multiple sites. Dassault Systèmes' DELMIA Apriso hosts a set of applications for manufacturing operations that manage production, warehouse, quality, maintenance, and time and labor activities.

- **A world class services organization** to offer the necessary industry knowledge and best practices for successful multi-site deployments, coupled with a partner network that is second to none built on relationships of over a decade of delivering manufacturing software solutions.

- **A global deployment methodology** to support multi-site implementations so manufacturing processes can be readily replicated and delivered to multiple sites simultaneously, easing the complexity of sharing processes that are deemed "best-in-class" across an enterprise. The result is a deployment model with sufficient flexibility to easily update processes as often as needed.
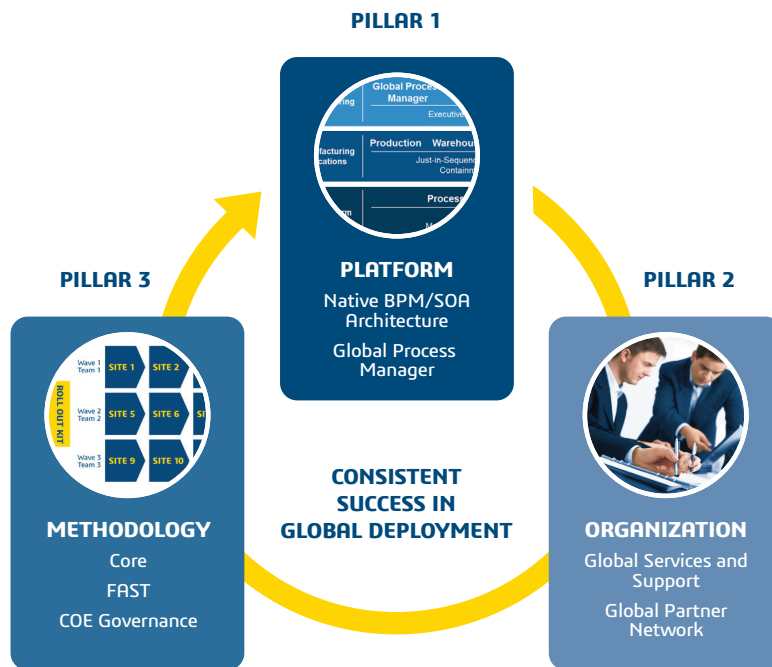

Figure 1
Three unique DELMIA Apriso pillars for global manufacturing success

PILLAR 1: A GLOBAL OPERATIONS SOLUTION

DELMIA Apriso for manufacturing operations management offers the technology foundation that enables manufacturers to easily develop, model, test, and deploy standardized business processes to every site. Its flexibility ensures these processes can be easily changed as often as necessary. DELMIA Apriso applications deliver multiple sets of plant-level capabilities, including production, quality, logistics, maintenance, and time and labor. This set of capabilities can be deployed and managed across multiple sites, thereby helping ensure the necessary visibility, control, and synchronization to effectively manage plant operations on a global scale. Further, systems interoperability enables business processes and workflows to span between other enterprise applications, such as Process Lifecycle Management (PLM), ERP and Supply Chain Management (SCM).

Two Critical Components: Flexibility and Standardization

Two factors are necessary for a best-in-class MOM solution: global process flexibility and standardization. Flexibility is vital as processes must often be changed to reflect new market conditions, government regulations, or continuous improvement initiatives. Flexibility is also necessary to support multiple manufacturing modes—global manufacturing organizations typically have multiple divisions manufacturing many different types of products. This means global MOM platforms must support both discrete and batch processing, as well as hybrid modes. It also means supporting the spectrum from repetitive manufacturing to Make-To-Order or Engineer-To-Order. DELMIA Apriso supports each of these capabilities. Key capabilities that enable DELMIA Apriso to deliver this diversity of support include:

- Flexibility to configure processes for different manufacturing models, based on the technology foundation of DELMIA Apriso's manufacturing solutions
- Rich Bill of Materials (BOM) model for multi-level product structure and packaging requirements
- Substitutions and by-products
- Divergent and convergent manufacturing
- Integration of materials with process steps
- Multi-level unit types (batch, serial, lot, bulk, pallet, container, license plates)

Standardization is essential to help ensure consistent product quality and service delivery, regardless of the geographical location. To address this essential capability, global MOM platforms must be capable of operating across sites, including sharing processes between locations, while operations data must be readily accessible from any process, function, or site. Equally critical, local site time and language requirements must also be supported.

Global Process Standardization

DELMIA Apriso Global Process Manager (GPM) is a multi-site management application unique to DELMIA Apriso's MOM solution. GPM manages, enhances, and enforces corporate best practices across all manufacturing plants to manage the 85 percent of process commonality and the 15 percent of plant process uniqueness across all sites. This capability supports the inheritance of best practices, as dictated by Six Sigma or Center of Excellence (COE) teams. DELMIA Apriso's GPM application reduces the difficulty of managing process change centrally while easing master data management, process specifications (including routings, operations, work instructions, documents, and quality plans), integration mappings to or from external systems like ERP, machine integration logic (that is not plant-specific), Key Performance Indicators (KPIs), and much more.

Enterprise Manufacturing Intelligence

An important reason for implementing a global MOM solution is process consistency across locations—other critical factors include data integrity, performance measurement consistency, and accurate materials tracking and traceability. DELMIA Apriso includes a global solutions suite to help drive multi-site operational excellence, continuous improvement, global visibility,

and integration and alignment of manufacturing to corporate objectives. DELMIA Apriso Manufacturing Process Intelligence (MPI) provides visibility and analytical insight into global operations. DELMIA Apriso's Global Traceability solutions manage quality issues globally, across the enterprise and supply chain partners.[3]

MPI is an integrated, out-of-the-box manufacturing intelligence solution that leverages the wealth of data within DELMIA Apriso. MPI complements existing Business Intelligence (BI) solutions, so users have the choice to select DELMIA Apriso, Microsoft® Excel® or other BI viewers to display and interact with their analyses. Customers can embed analyses within their globally distributed business processes to accelerate response times to the information being analyzed (versus a post-event analysis). MPI comes with pre-packaged Intelligence Packs to perform analyses on various components of manufacturing operations. Each Intelligence Pack includes a complete set of Extract, Transform, and Load (ETLs), Cubes, hundreds of KPIs, reports, views, and dashboards. These Intelligence Packs can be used immediately—no coding, configuring, or data manipulation is required.

Fully Localized and Globalized Time and Language Support

From the highest levels of process deployment to the details of local customs and time zones, DELMIA Apriso is enabled to work in any locale by supporting multiple languages and including the tools to manage the content. All date and time fields are converted to Universal Time Code (UTC) or Greenwich Mean Time (GMT) format, with on-the-fly conversion to any user's local time. All text is stored in Unicode (UCS-2, UTF-8); database content can be stored in multiple languages. Built-in translation capability for user interfaces and related documentation and training materials enables DELMIA Apriso users to easily localize icons, graphics, and other features to meet regional needs.

The table in **Appendix A** explains in further detail the importance of process flexibility and standardization, and why these two key capabilities must be included with any global MOM solution. Use this table to evaluate how various global MOM solutions compare to what DELMIA Apriso's best-in-class system can deliver.

Given the importance of global process flexibility and standardization, the next question is, "How are these two capabilities best delivered?" The answer lies within the technology utilized as part of your global MOM solution. The next section offers a more detailed examination of key technologies that should be part of any global MOM solution.

Technology Enablers

A manufacturing software solution is only as good as the technology it leverages and the design with which it was built. DELMIA Apriso's global MOM solution delivers operational flexibility and process standardization that can be implemented quickly by relying on the following key technologies.

Defining Business Process Management

Business Process Management (BPM) is best defined as "Company Performance Management through Processes". Stated differently, BPM is a management method that seeks to improve a company's performance by evaluating and continuously improving business processes, as a way to address a more and more complex and ever-changing environment.

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3   An in-depth discussion of Global Traceability is beyond the scope of this paper. For more information, please visit DELMIA Apriso's website here: http://www.apriso.com/solutions/global_product_traceability.php

Native Business Process Management

Most legacy Management Execution Systems (MES) systems that claim to have Business Process Management (BPM) capabilities have simply added a graphics tool with limited ability to actually implement end-to-end process improvement. DELMIA Apriso, on the other hand, is built on a native BPM foundation that is "manufacturing-aware". It is an execution system, not just window dressing. This is an important distinction. DELMIA Apriso has a built-in understanding of manufacturing equipment, ERP integration, bar code scanning, parts tracking, and all other details of production and logistics management. DELMIA Apriso includes BPM-based, packaged and ready-to-run business process flows, complete with the associated data models, business components, and user interface gadgets and interfaces with external systems. As a result, business analysts and industrial engineers can design processes at the activity level using a built-in graphical modeler. This makes implementing change and continuous improvement more agile and cost-effective.

DELMIA Apriso's native BPM is also particularly important in deploying local configurations—a must-have for any global solution. This ensures quick process changes without IT involvement at sites. Traditional systems comprise large building blocks (low granularity) with limited flexibility to fit the detailed variation of manufacturing processes. DELMIA Apriso's native BPM architecture enables reusability of high-granularity objects, which can then be tailor-fit to meet the specialized needs of local manufacturing, if required (see Figure 2).
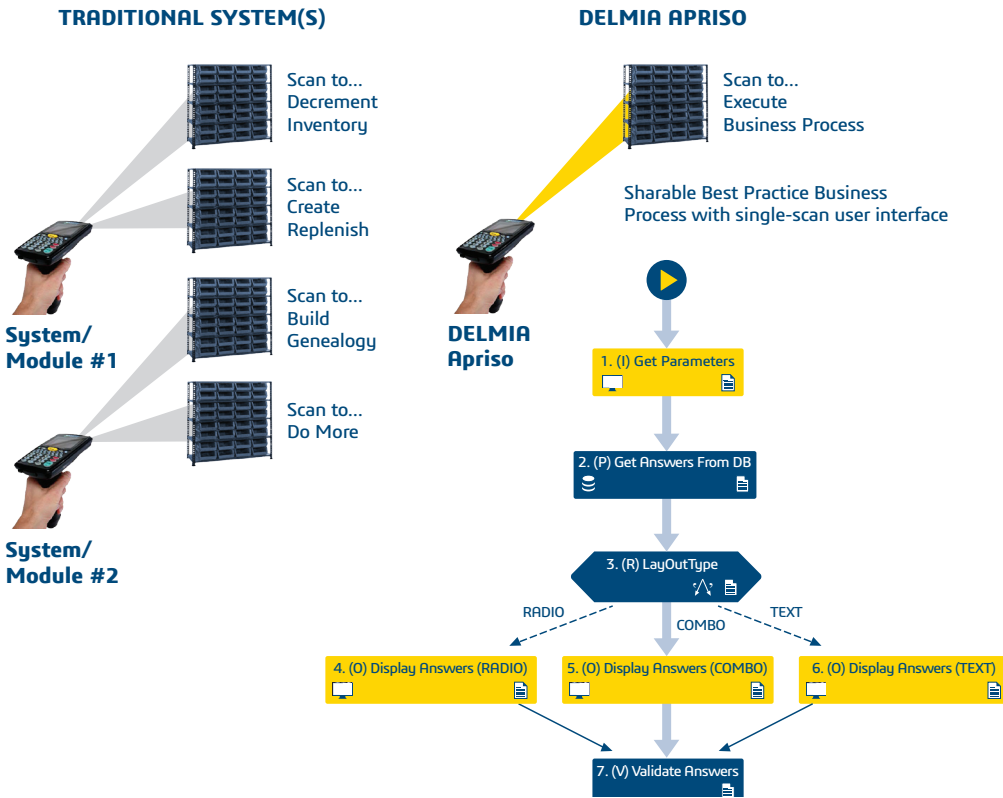

Figure 2
DELMIA Apriso's native BPM architecture enables reusability of highly granular objects to tailor-fit detailed manufacturing requirements

Unified Manufacturing Data Model

DELMIA Apriso's global MOM solution utilizes a Unified Data Model (UDM) to help ensure a Single Source of Truth (SSOT) for all manufacturing operations, correlating data and processes across operations. This means that whatever DELMIA Apriso applications you use or wherever you use them, you have one data model for your entire manufacturing enterprise.

One facility may use DELMIA Apriso Production and DELMIA Apriso Warehouse, while another may use DELMIA Apriso Production and DELMIA Apriso Quality. You may have 80 plants worldwide running all possible combinations of DELMIA Apriso applications. With DELMIA Apriso, you will always have one data model, ensuring a SSOT.

A common UDM makes developing and maintaining processes much easier, because there is no need to map databases to each other or spend time integrating various operations. They are already unified—all related manufacturing information is stored in the single, unified database. DELMIA Apriso is inherently integrated and agile, so there are no silos to connect and no barriers to overcome between operations in a plant or across facilities. The unified database also makes it much easier to integrate DELMIA Apriso with ERP, PLM, and other enterprise systems.

Service-Oriented Architecture

The third key technology enabler is a Service-Oriented Architecture (SOA) that allows applications to participate in end-to-end business workflows involving not only internal systems, but other external systems, such as ERP, SCM, PLM, Supervisory Control and Data Acquisition (SCADA), among others. Thus, you can achieve the highest level of manufacturing excellence by connecting manufacturing operations to engineering and planning functions, using end-to-end business processes that can be tracked, traced and continuously improved.

DELMIA Apriso has incorporated a SOA into the DELMIA Apriso platform, which gives it a uniquely robust implementation architecture that simplifies connectivity and interaction with all applications as well as the web. DELMIA Apriso supports publishing of its SOA components, and can consume external functionality through the use of web services. Third-party systems can call DELMIA Apriso functionality, and DELMIA Apriso applications can call functionality from other systems—a basic premise of the architecture. This translates into an operational advantage. For example, if DELMIA Apriso Warehouse detects that an item in stock is running low, it can initiate a call to your vendor and place a refill order automatically. You can even use web service calls to easily outsource production steps or quality processes, maintaining full integration with DELMIA Apriso.

The DELMIA Apriso MOM is essential when driving agility in both global coordination and plant-level operational excellence by providing configurable, model-based deployment of distributed business processes. This is what allows manufacturers to continuously adapt to remain competitive and differentiated. But, this technology is useless unless it can be correctly configured and implemented, which brings us to the next point of discussion: DELMIA Apriso's world-class Professional Services team and partner network.

PILLAR 2: A WORLD-CLASS PROFESSIONAL SERVICES ORGANIZATION

When selecting a solution provider to implement any enterprise software solution, it is important to choose an organization that has had extensive experience with global solutions. Different challenges must be overcome, such as the synchronization of business processes across multiple sites. Solution providers that are inexperienced with how to manage such a deployment will undoubtedly result in project delays, underutilization of potential solution benefits, as well as unnecessary costs as part of your deployment.

DELMIA Apriso is the undisputed industry leader in global MOM implementations, with many customers that now have DELMIA Apriso running at 30, 40, and 50+ sites. DELMIA Apriso's Professional Services team has served nearly 200 different global manufacturing clients, representing some of the largest and most profitable enterprises in the world.

DELMIA Apriso's customers operate in many different industries such as automotive, aerospace & defense, medical device, packaging, and consumer goods. These manufacturers are leveraging DELMIA Apriso's solutions to improve their ability to accurately and efficiently manufacture a wide variety of products. Customers like Lockheed, Honeywell, Valeo, Bombardier, and Saint-Gobain are thriving in today's competitive and highly regulated environment by deploying DELMIA Apriso across their global production and supply chain operations.

Leverage a Strong Partner Network for Global Deployments

DELMIA Apriso's network of partners is unrivalled. Global manufacturing operations necessitate local customization to meet the detailed variations of local requirements. Over the past decade, DELMIA Apriso has built a network of world-class partners to supplement its own organization.

Figure 3
DELMIA Apriso's extensive Partner Ecosystem helps ensure implementation success

Systems integrators have supported DELMIA Apriso's expansion into 40+ countries. Partners in various disciplines have each helped manufacturers to deploy their local plant instances, which they can do quickly and efficiently thanks to DELMIA Apriso's native BPM. See Figure 3 for a select list of DELMIA Apriso implementation partners.

The DELMIA Apriso partner strategy is unique for five important reasons:

- Success in global, enterprise implementations
- Long history with an existing partner network has resulted in expansion of partner's practices to new regions, industries, and markets
- Partners with strong competencies across the IT system landscape from Level 1 to Level 4 (ISA-95 model for details)
- Partner base who offer global coverage and broad implementation capabilities with long term support
- Ability for manufacturers to control their own destiny by picking their partners and the roles they play

PILLAR 3: A GLOBAL DEPLOYMENT METHODOLOGY

Every global implementation of an enterprise IT system must be carefully planned and managed to ensure all objectives are met. Challenges often arise when delays occur while trying to achieve group consensus on final capabilities. Project managers must then balance the need to deploy the best possible solution while meeting stakeholder expectations.

These types of deployments typically include the following steps:

1. Assembling a project team
2. Developing measurable goals, acceptance criteria, and test scenarios
3. Gathering requirements and documenting your business processes
4. Developing a project management plan
5. Creating a quality assurance and change management process
6. Educating your staff on the technology and transferring knowledge to your staff

As an example of the challenges that must be overcome, let's take a look at what is typically involved when installing an ERP system. The objective is typically to achieve a SSOT—process and measurement consistency across operations. As a result, ERP projects typically require changes to existing business processes.[4] Poor understanding of needed process changes prior to starting implementation is a primary reason for project failure.[5]

Adding further complexity, these types of installations are considerably more difficult (and politically charged) in decentralized organizations because of the existence of different processes, business rules, data semantics, authorization hierarchies, and decision centers.[6] This may require the migration of some business units before others, delaying implementation further to work through the necessary changes for each unit, possibly reducing integration (for example, linking via Master Data management), or customizing the system to meet specific needs.

These challenges also apply when implementing an enterprise manufacturing IT system (to all sites), as these types of deployments are also de-centralized, with sites located all over the world. Typically with these types of projects, everyone feels great when they begin to work at

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4   Turban et al. (2008); Information Technology for Management, Transforming Organizations in the Digital Economy; Massachusetts: John Wiley & Sons, Inc., pp. 300—343

5   Brown, C., and I. Vessey, "Managing the Next Wave of Enterprise Systems: Leveraging Lessons from ERP," MIS Quarterly Executive, 2(1), 2003

6   "Requirements Engineering for Cross-organizational ERP Implementation: Undocumented Assumptions and Potential Mismatches" (PDF); University of Twente

Site #1, but issues can arise once work begins on Site #2. New functionality or processes might be discovered that invalidates the premise that Site #1's footprint was the right template for the entire enterprise deployment. As new sites go live, this problem can be exacerbated into such a big issue that the entire deployment could be cancelled.

A New Twist on a Familiar Methodology

A reflection on the previously discussed deployment challenge reveals two common issues that must be addressed for large organizations to achieve process consistency across their enterprise. The first is that IT infrastructures must enable agility by **easing how processes are changed** to eliminate concerns over "getting the first site right." The second is **ease of process "transportation"** to other sites. Once a process improvement has been identified, manufacturing IT systems must then be capable of distributing the update quickly and easily to allow a more fluid set of business processes to be created, modified, and continuously improved during and after implementation.

Establishing a "Core footprint" is a well-accepted procedure to install enterprise software, which involves identifying a set of business processes that are deemed "best-in-class," and then implementing that set to each location. DELMIA Apriso's customers adopt an evolving Core footprint methodology when implementing DELMIA Apriso, which effectively addresses these issues, resulting in greater success when completing an enterprise roll out. By leveraging DELMIA Apriso's native BPM architecture, processes can be easily created and updated through a user interface that is intuitive, role-based, and easily configured to work on multiple devices and in virtually any language. Once a new process has been created, DELMIA Apriso GPM can then be utilized to easily package and transport these process improvements to any other DELMIA Apriso location as an immediate update.

These capabilities mean that the first site can be implemented with the knowledge that future process improvement is easily accommodated—eliminating the pressure to "get it right" up front. Once the first site is live, those processes are then available to begin work on the second site. Depending upon that site's requirements, some, all, or none of those processes may apply. But, more importantly, processes can be easily shared as often as needed, removing considerable pressure from getting it all right the first time. Over time, a higher level of business process consistency becomes possible across sites, offering a foundation for process standardization to ease future continuous process improvement.

As more sites go live, the total time spent during implementation drops dramatically, based in part on the ever-increasing process re-use now possible. Figure 4 depicts how a Core system with varying local modifications might appear over time, after process alignment has been achieved across multiple sites. Note that these benefits exist regardless of whether DELMIA Apriso or partner staff performs the implementation.
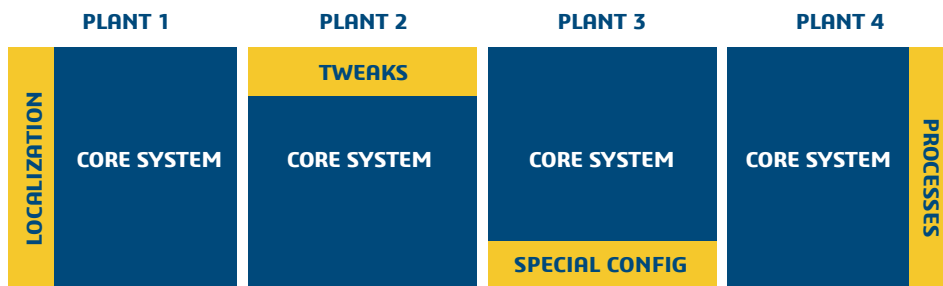

Figure 4
Over time, a Core system will ultimately enable greater process consistency across sites

Effective Governance

To ensure success of this deployment model, DELMIA Apriso's customers have found that a strong governance and oversight system is important. This COE identifies and controls best practices and process standardization. This team considers how processes should be secured, changed, and managed as well as when they should be rolled out to each of their manufacturing sites. The group has responsibility to ensure process standardization is important not only from a

regulatory and risk management perspective, but also to ensure consistent product quality. The COE team should have representation from many disciplines, including manufacturing, finance, quality, and engineering, as well as an executive sponsor.

A misconception is to staff a COE with only IT staff. It is much better if this committee includes one or more business owners from the local level. Most high performing COE teams include a representative from a top-performing plant—usually from one of the plants where the Core deployment will be rolled out first. The broad mix of skills on the governance committee not only leads to a better Core model, but it also helps ensure internal acceptance and buy-in across the organization.

From Models to Deployment—Establishing the Core

Once the initial starting point for the Core model has been designed and accepted, it is then time to implement processes within DELMIA Apriso using its global capabilities (BPM, interfaces to ERP, and interfaces to plant machinery, Radio Frequency Identification (RFID), etc.) and its wide functional footprint for manufacturing operations. Some of the key stages in moving along the path from an accepted initial model to the first deployment are:

- **Prototyping**—Various methods exist on how to model, blueprint, or prototype what processes and capabilities should be part of the initial Core model. These requirements can often be difficult to define and understand in manufacturing, particularly when processes are complex and the importance of "getting it right" is so great. The greater use of visual process modeling during the design stage, the better chance that the line-of-business employees will understand what the IT implementation team is planning. Greater ease of use encourages and promotes increased collaboration between IT and line-of-business users, resulting in a better initial Core model.

- **Determining what site(s) to deploy first**—DELMIA Apriso recommends beginning with one, or at most a few, manufacturing plants for the initial rollout. Obviously, the first deployment is crucial, because success will win allies and lay the foundation for further success, so has political ramifications. For this first deployment, DELMIA Apriso's customers typically choose the plants with the greatest chance of success. This is judged by such factors as the historical record, local resources, management team, and participation in the Core development and COE team.

- **The Rollout Kit**—As part of the initial deployment, DELMIA Apriso helps manufacturers document every step, adjusting for problems along the way, with the goal of establishing the procedures that will be used for all subsequent rollouts. This knowledge is then packaged into a formal Rollout Kit, which provides everything needed for subsequent rollouts. The Rollout Kit typically includes:

  - Configuration of software and delivery of interfaces, forms, reports, and conversions

  - Testing of solution and interfaces

  - Complete specifications for servers, displays, and interfaces

  - Preparation of production hardware environment

  - Creation of training materials

The Rollout Kit allows each deployment to follow clear and precise guidelines, which helps to accelerates multi-site rollouts. For example, when plants are deployed independently, every decision becomes complex and time consuming. Selecting and configuring the right server can take weeks. Using the Rollout Kit, decision delays are avoided, letting the deployment team focus on installing and testing the system as efficiently as possible by following step-by-step instructions.

Going Global—The Core Methodology

Once established, the Core model and the associated Rollout Kit allows manufacturers to bring plants online at a much faster pace than would otherwise be possible. Every company is different, of course, but the first plant rollout may take six to nine months to complete. After that, DELMIA

Apriso customers can ramp up to one, two, or even more "go-lives" per month. DELMIA Apriso recommends rolling out plants in waves, with a dedicated team assigned to each wave. A typical "wave" approach to multi-site rollouts is shown in Figure 5.
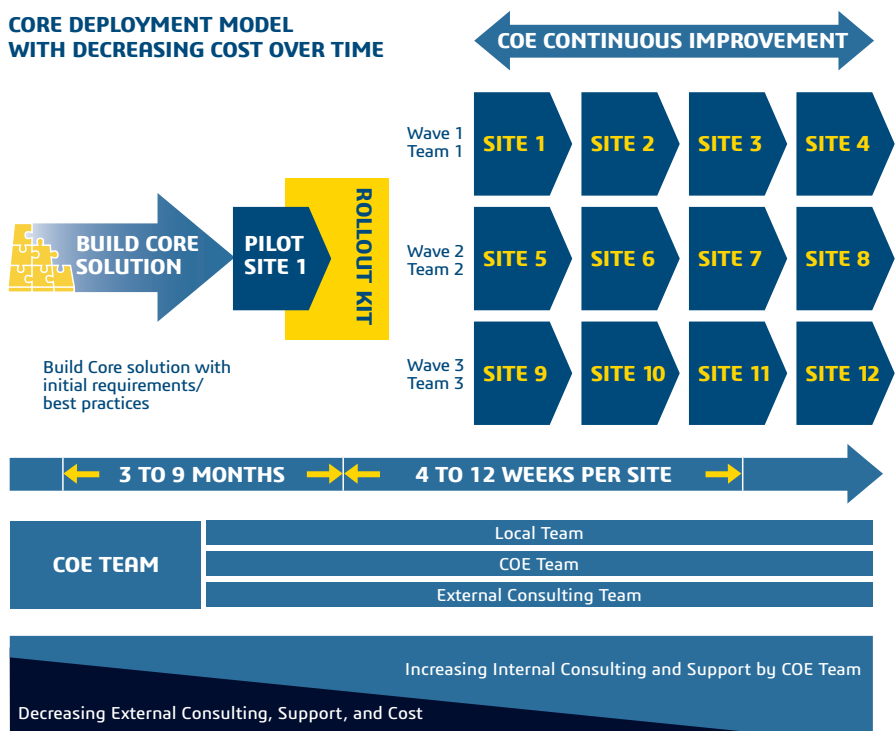

Figure 5
Graphical depiction of a Core deployment model with decreasing cost over time

Return on Investment

It is important to understand that deployment costs steadily decrease as more plants are brought online, even as the speed of rollouts accelerates. This is because the rollout teams gain experience and knowledge that helps streamline the deployment process. By not starting each site with a "blank slate," considerable cost savings are possible as more and more sites go live. See Figure 6 for a graphical depiction of these deployment cost savings.
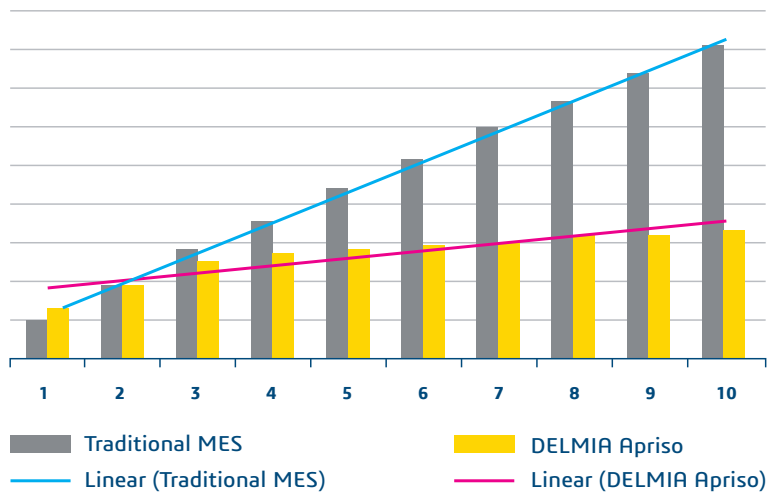
Figure 6
Total and average cost per site declines with a DELMIA Apriso solution, when compared to traditional Manufacturing Execution Systems (MES)

There is another way that Return on Investment (ROI) is amplified when embracing a Core deployment methodology with a software system that supports the easy sharing of best practice processes: the collective knowledge of what processes function best is steadily expanded. In other words, as each new site goes live, a new opportunity exists to learn more about what processes can further increase productivity and reduce waste. Based on the fact that processes can be easily transported to any other DELMIA Apriso site location, this collective knowledge can be readily shared across the enterprise, effectively expanding the cost benefits of implementing a new DELMIA Apriso solution.

Leveraging a Center of Excellence Team

After going through the process of rapid, standardized rollouts, a manufacturer now has in place the organizational framework necessary to support continuous improvement. In fact, many times the process of continuous improvement is layered in to the rollouts concurrently. Regardless, once the first site goes live, the importance of a COE team becomes a key element of the deployment and its ultimate success. The COE's governance model is similar to that of the initial project. The only difference is in purpose—to oversee continuous deployment of standard processes, discovery and testing of improvements, and deployment of these improvements everywhere. The COE eventually becomes the owner of change, and the master of best practices spanning manufacturing operations world-wide.

Typically, a COE consists of a multidisciplinary team of experts (sometimes referred to as Subject Matter Experts or SMEs). This team includes experts focused on process governance, who will then decide what process changes are needed and how they should be applied. These individuals should frequently travel to the plants while also being aware of the various business needs and constraints. Another set of experts are the IT specialists, who will be responsible for scoping decisions done by the process owners, testing, and implementation of the actual changes to the plants. All team members must work together to interact with and implement their process changes with the user base in the plants.

The benefits from establishing a COE include:

- Greater consistency of best practices across the enterprise, resulting in an increase in quality, efficiency, and productivity
- Faster deployments across the enterprise, accelerating ROI
- Improved business continuity and system usage adoption
- Higher degree of business alignment
- Greater consistency with process metrics for analysis and improvement
- Lower TCO

The DELMIA Apriso platform is uniquely capable to support a COE team. The DELMIA Apriso Global Process Manager module introduced earlier supports the monitoring and deployment of best practices globally to each plant. As shown in Figure 7, DELMIA Apriso GPM can seamlessly deploy standardized processes across the enterprise to help ensure globally consistent operations. Continuous improvement initiatives can be deployed automatically to the entire landscape of plants to enforce process improvements enterprise-wide; its process monitoring capabilities enable control of which processes are used in what versions and in which plants.

GPM and the DELMIA Apriso MOM solution help IT departments to:

- Deploy processes consistently, on a global scale to multiple sites
- Manage revision control of each business process better
- Secure control of who can change a business process
- Control who can put a process into production
- Track which process and version is running at each site

Harvesting best practices managed by the COE for continuous improvement becomes a way of life. Typically, a DELMIA Apriso server is located at the COE to build best practices and continuously improve manufacturing processes. It builds and tests processes, then uses GPM to deploy manufacturing processes to the field. The system is not just a top-down distribution of best practices. It provides a way to discover process improvements that are made out in the field, by any person at any location. Then, GPM can bring those processes back from the field to the COE process repository, where they are available to any plant in the enterprise.
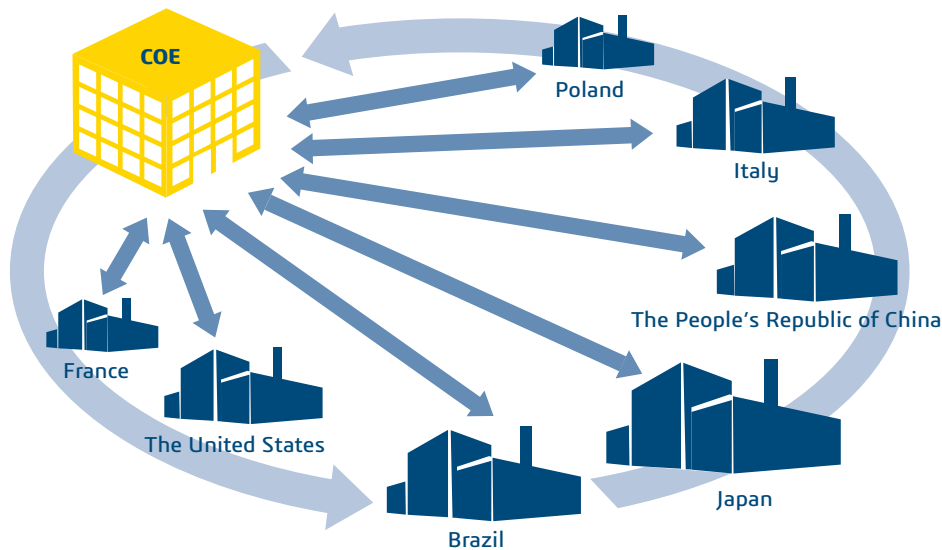
Figure 7
Harvesting and sharing continuous process improvement via a COE team enables all plants to take advantage of best manufacturing practices

TYING IT ALL TOGETHER

DELMIA Apriso is the only global MOM solution that includes each of the three pillars referenced in this white paper. By combining a platform-based approach to MOM with a team capable of successfully deploying such a solution, a powerful competitive differentiator is possible, capable of providing strategic advantage that can last well beyond when the last site goes live. The following sections provide two case study examples of global manufacturers that have embraced DELMIA Apriso's three pillars, demonstrating that this solution is indeed "real" and achievable within a relatively short time period.

Case in Point—L'Oréal

L'Oréal SA is a Paris-based cosmetics company with €25.26 billion consolidated sales in 2015 and operations worldwide. Between 2003 and 2004, the company made the strategic decision to invest in SAP as their global ERP solution. As with many companies that have made similar IT decisions, there were many reasons that drove this selection. In the case of L'Oréal, management decided that their current IT systems, mainly homegrown at the local level, could no longer support their plans for growth. They believed it was important to be able to both re-engineer business processes and clean out the old legacy systems, on a region-by-region basis.

In and of itself, this decision to deploy a global SAP ERP system is not particularly noteworthy. Many of L'Oréal's competitors in the Consumer Packaged Goods space were also on a similar journey. The uniqueness of L'Oréal was that they were planning to roll out a global MOM system that would interoperate with their ERP at the same time. Contrary to popular thought, at the time, L'Oréal immediately recognized that their ERP system would not be adequate for managing their manufacturing facilities. A dedicated MOM solution would also be needed.

After a thorough competitive evaluation, L'Oréal picked DELMIA Apriso as their global MOM standard for all of their 37 plants. In 2006, L'Oréal had their first "go-live" at a pilot plant in Belgium; shortly thereafter, they went live with their first North American pilot.

L'ORÉAL

Centers of Excellence

One of the unique approaches L'Oréal took in these deployments was developing COE teams in North America and Europe to manage the process. These teams were generally cross-functional with resources from Operations, IT, Accenture (their SAP implementation partner), and DELMIA Apriso. These groups led the implementation process, ensuring that business processes were standardized across facilities. As part of their deployment, L'Oréal achieved a high degree of process standardization (95-99%), which was truly remarkable. The only differences tended to be legal regulatory issues or technical plant issues in how inventory was picked, and routed.

By establishing COEs and ensuring implementations were highly standardized from site to site, L'Oréal was able to consistently complete plant implementations of SAP and DELMIA Apriso in nine months. Today, L'Oréal has finished their European and North American deployments, and is halfway through its Latin America deployment. Asian and Indian facilities are next. At the time of writing this white paper, L'Oréal was live at 23 of their 37 sites.

> "Any company evaluating a global MOM deployment should carefully consider how the change management process will be structured within the company to ensure success. Based on our experience, it is essential to have executive support and bring disparate groups together through a Center of Excellence type model. These groups should include operations, IT, and external resources, and they should all have the ability to focus on how the solution can remain standardized across facilities and deliver the needed business processes transformation at the local manufacturing level. By creating these Centers of Excellence and ensuring standardized business process across the manufacturing plant network, we have been able to position our company for the future growth requirements of the business and I am sure other businesses can benefit from the same approach."
>
> Morris Lenczicki, Vice President of Industrial Systems Applications
> Corporate Operations North America, L'Oréal

In those plants that are up and running on DELMIA Apriso, L'Oréal management reports a more engaged workforce, a demonstrable reduction in paperwork and data gathering, and more integrated workflows between planning in the supply chain and manufacturing execution. The ability to more easily benchmark performance across the organization has also been achieved. L'Oréal has now ensured that shampoo produced in Brazil, Germany, or the US will be made exactly the same, meets cost targets, and is of the highest quality.

As evidence of L'Oréal's leadership in manufacturing operational excellence, the company has been recognized by numerous judging panels as being an innovative leader. L'Oréal won the Editor's Choice award at the 2009 Progressive Manufacturing Summit in recognition of their ability to globally standardize plant floor operations and quality processes.[7] And, in 2010, L'Oréal's global standardization was recognized again with an award for operational excellence at the European Manufacturing Strategies summit held on October 20, 2010 in Swissôtel Düsseldorf, Germany.[8]

Case in Point—Cummins

Cummins Inc. is a global power leader with complementary business units that design, manufacture, distribute, and service engines and related technologies. Cummins has $19.1 billion (2015) and 55,000 employees to serve customers in 190 countries. Cummins turned to DELMIA Apriso to take a more enterprise-wide and holistic approach to better support growth into new, emerging markets. They faced a need for greater flexibility to customer demands while ensuring the highest quality standards. The objective was to improve real-time visibility and control across their global manufacturing operations. In the beginning of 2011, Cummins began replacing its legacy MES and quality systems with DELMIA Apriso's global MOM solution.

"By implementing DELMIA Apriso as a global platform for manufacturing operations, L'Oréal has successfully expanded the results from our Lean Manufacturing, Six Sigma, and other continuous improvement programs. It is now faster and easier to deploy and improve best practices across all of our plants."

—Jacques Playe, CIO of Operations L'Oréal

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7   L'Oréal Wins Editor's Choice Award at 2009 Progressive Manufacturing Summit, June 18, 2009; http://bit.ly/L8fPR5

8   L'Oréal Wins Awards for Operational Excellence at European Manufacturing Strategies Summit, November 30, 2010; http://bit.ly/L8gdPw

A comprehensive DELMIA Apriso Production and Quality footprint was integrated with Cummins' Oracle E-Business Suite R11. A Core team was established as a critical component of Cummins' global MOM deployment. This team was assembled with representatives from global manufacturing engineering, manufacturing IT systems, and corporate IT personnel. A Change Control Board (CCB) was established that met bi-weekly to manage Process Change Requests (PCRs). The team was strategically focused, so it evaluated each process change in the greater context of what potential business benefits were possible from each PCR (see Figure 8).
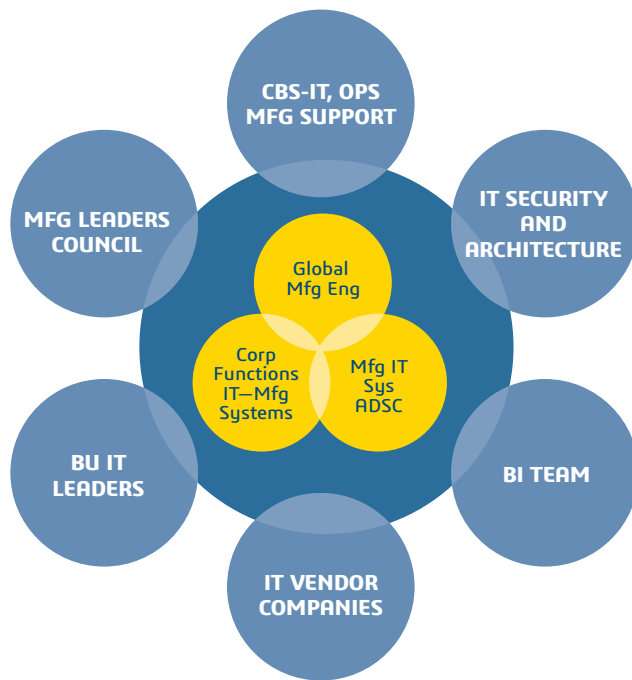
Figure 8
Cummins' Core team structure

Post-DELMIA Apriso implementation metrics for the first engine assembly plant indicate a 90 percent reduction in customer defect claims and a 25 percent improvement in production throughput. As evidence of the financial incentives for process standardization and reuse, Cummins' implementation costs were cut 50 percent for their second engine assembly plant; future cost reductions followed for each of their next DELMIA Apriso implementations. As of 2015, a total of 15 Cummins' sites have gone live.

As another metric of success, Cummins has now experienced months of uninterrupted perfect quality (0 PPM) products delivered to one of their largest European customers. The cost savings, brand benefits, and customer satisfaction yields from perfect products was hard to fully capture. These benefits extend far beyond the simple cost savings avoided from product returns and warranty claims.

In October 2011, Cummins won the top Manufacturing IT award at the 2011 European Manufacturing Strategies Summit for unrivalled ROI from their DELMIA Apriso implementation.[9]

> "We are delighted to be recognized for our efforts streamlining and standardizing our manufacturing processes around the globe. By partnering with DELMIA Apriso, we were able to take a global perspective on manufacturing operations and continuous improvement to achieve higher quality, greater efficiency, and lower costs by delivering better real-time visibility and control over our operations."
>
> Dr. Robert D. Borchelt, PhD.
> Director, Manufacturing IT Systems & Industrial Controls at Cummins Inc.

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9   Cummins Inc. Wins Top Award for Manufacturing IT, November 3, 2011; http://bit.ly/veUv7x

CONCLUSION

This white paper began with a discussion of why manufacturers have gone global as they seek new growth. Implementing a global MOM solution is an excellent strategic decision to cut costs, improve productivity, and increase operational responsiveness. Manufacturers that adhere to the three-pillar strategy as outlined in this white paper can position themselves for greater success in the execution of their strategic operations plan.

DELMIA Apriso uniquely delivers each of these pillars—and does so better than any other application suite in the marketplace. In our analysis as to **why** clients have chosen DELMIA Apriso over the competition, the reasons focus around four major attributes:

- Faster initial deployment
- Faster global deployment
- The DELMIA Apriso team
- Continuous improvement enablement

See **Appendix B** to read in greater detail DELMIA Apriso's unique capabilities, the benefits that can result, and how they differentiate DELMIA Apriso from the competition.

Implementing a global MOM is no easy task. Many vendors say they can do it; none have been able to do so with consistency and the same record of success as DELMIA Apriso. Speed and scalability are critical keys to deployment success. If it takes 12-24 months to bring a single site live, one at a time, a global deployment of 20 sites will literally never end—it simply won't achieve the necessary momentum to bring to completion. With DELMIA Apriso's proven three-pillar approach, this timeframe is dramatically reduced, and so is the time to value. DELMIA Apriso has many customers, in many different industries, which have successfully brought two to three sites online per month, not two to three per year. This step change in performance has directly impacted their bottom line and their competitive position in the market.

If your organization is currently in the process of trying to get more value out of your current global manufacturing footprint, don't hesitate to contact us; you may be surprised with how refreshing and novel our approach can be.

About Dassault Systèmes in Manufacturing

DELMIA is a Dassault Systèmes brand that empowers companies to connect the digital and real worlds of manufacturing to plan, execute, and optimize their production processes. Using applications and solutions powered by or available from the Dassault Systèmes **3D**EXPERIENCE platform, these capabilities help global manufacturers to improve responsiveness, increase quality, and accelerate new product introduction across their enterprise and extended product supply network.

For more information, visit **www.3ds.com/DELMIA**

APPENDIX A: ROADMAP FOR OPERATIONAL EXCELLENCE

REFERENCE	WHY IMPORTANT?	DELMIA APRISO SOLUTION	OTHERS
FLEXIBILITY			
Flexibility to support wide variation of requirements across manufacturing plants and regions	Manufacturing varies widely in levels of automation, products, and labor policies across plants, divisions, and regions	BPM and configuration on a unified architecture	Scripting or custom code around "fixed footprint" applications
Support for multiple manufacturing models	Large enterprises usually have different types of manufacturing	BPM and configuration on a unified architecture	Applications really aimed at a particular manufacturing model and forced fit into others (SAP Manufacturing Exclusion (SAP ME) electronics)
Plants have varying priority around manufacturing applications	Operational applications footprint can vary by plant based on their priorities	Wider DELMIA Apriso footprint across applications all as a unified architecture	• SAP can deliver lots of ERP modules • Automation providers have purchased lots of piece parts
Support for localizations and plant specific requirements	Firms using a standard solution must still support special requirements in individual plants	BPM and configuration on a unified architecture	Able to accommodate local variation via scripting/ custom code, no ability to roll into core or other plants
Support for a wide variety of automation systems and levels of automation	Varying legacy systems dominate in manufacturing	• Automation vendor neutrality • Standards based Machine Integration (MI) • BPM and configuration • DELMIA Apriso fits around automation	Automation personnel all will want to replace competitive automation over time
Support for corporate ERP (SAP) and legacy ERP in the plants	Legacy systems dominate in manufacturing	• Business system neutrality • Certified interfaces and strong integration skills • DELMIA Apriso as "Jell-O®" around business systems	• SAP wants you to replace the entire ERP first • Automation and Pure Plays are not focused on ERP integration
PROCESS STANDARDIZATION			
Ability to transport & execute best practices across locations	• Process standardization is a key goal • 24/7 requirements lead to physically distributed servers	Global Process Manager with language localization	No known capabilities
Support multiple process versions and multiple versions of the mfg software deployed in the field	• Process standardization is a key goal • Challenged by different software versions across a number of plants	Cross-version support in v9.6	• No capabilities to transport • No standard capabilities to support multiple versions
Visibility and common metrics into and across all plants	• Can't compare if there is no standardization • Real-time visibility critical in production process management	• MPI • BPM • GPM	SAP can with BusinessObjects but that is complex and slow (some companies experience up to four months for first draft of report)
Ability to support plants from a centralized or regionalized location	• Continuous improvement is required in manufacturing • Excellence is dispersed	GPM enables a virtual COE	All will talk about a COE, but substantial IT resources still needed in the plant to support code changes, upgrades, and shutdowns
Multilingual, multi-time zone	Globally dispersed plants	• Standard capability • Unicode (double-byte) database • Database content in multiple languages	All competitors imply they have it
Track and Trace across plants	• Most products are now made across multiple plants • Compliance requirements • Some yield and quality problems need multi-site visibility	DELMIA Apriso's Global Traceability Solution (G-TAG)	• SAP can do it awkwardly • Rockwell say they can do it • Automation personnel are plant-centric

APPENDIX B: DELMIA APRISO'S UNIQUE CAPABILITIES

DIFFERENTIATOR	CAPABILITY	ENABLERS/FEATURES	BENEFIT
FASTER INITIAL IMPLEMENTATION			
1. Progressive build methodology with Evolving Core	• Visual iterative configuration of business processes • Conceptualize global solution architecture • Systematic design/build within global framework • Collaborative approach engages across departments • Visual business process configuration • Support geographically dispersed teams • Consistent and repeatable implementation methodology	• Methodology anticipates conceptualization of global solution architecture • Rapid Prototyping and Blueprinting available within the product (Process Builder (PB)) to support visual, iterative configuration • Validate as you go (PB+GPM) • Process versioning and release validation (PB+GPM)	• Eliminates requirements churn and rework of processes • Accelerates initial deployment • Enables easier change management/greater user acceptance
2. Leverage solution assets	• Solution assets proven in previous deployments • Best Practices developed over multiple implementations • Methodology to package and reuse business functionality	• Solution repository (PB) • Documented and proven solutions • Platform for accelerated integration • Package and deploy business process based solutions (PB+GPM)	• Faster time to first "Go Live" • Reduces risks of pilot • Platform for continuous improvement
FASTER GLOBAL DEPLOYMENT			
1. Progressive build methodology resulting in a portfolio of processes	• Evolving Core • Build/assemble reusable, extensible pieces to create business flows • Collaborative approach engages across departments • Identify and prioritize business requirements • Agile or Lean approach with iterative, visual development • World-class project management	• Rapid prototyping of solution flow • Phased deployment • Blueprinting (PB) • Phased deployment with requirements validated as you go (PB+GPM) • Process versioning and release validation (PB+GPM)	• Greater probability of project success from initial deployment to wide-scale rollout • Decrease cost and risk of rollouts • Easier change management/greater user acceptance
2. Evolving Core solution	• Phased, systematic rollout • Core solution evolves/grows as new best practices are found • Core solution + Local enhancements • Forward/backward process deployments without shutting down production	• Validate and enhance as you go (PB+GPM) • Monitor, package, and distribute processes (GPM) • Process versioning and release validation (PB+GPM) • Executable BPM with local extensions	• Scale and speed of deployment • Eliminates risk and delay of big bang implementations • Enables multiple (near) simultaneous "Go-Lives" • Increases value of solution as you go • Increased knowledge capture, collaboration, and satisfaction of operations people
3. Process standardization on your best practices	• Executable BPM • Model executable business processes that cross functional boundaries • Standardize metrics and KPIs • Governance model	• Monitor, package and distribute processes (PB+GPM) • Executable BPM solution • UDM • Global MPI • Global manufacturing solution	• Reduces scope of the project by eliminating inefficient, unapproved, unofficial processes • Focuses technical team on improving best practices and eliminating cost of supporting bad practices • Standardization is first step to process optimization
4. Reduce dependency on technical resources over time	• Ability to configure reusable sub-processes • Wave deployments over time • Evolving Core will eventually cover all best practices • Collaborative implementation method for knowledge transfer and enablement • Process standardization • Simplified forward/backward process deployments • Ability to define and deploy localizations centrally	• Executable BPM solution • Monitor, package and distribute processes (PB+GPM) • Global manufacturing solution	• COE can do the work, reducing need for local plant IT • Enables multiple simultaneous "Go-Lives" • Reduces schedule and resource risk • Reduces deployment cost

DIFFERENTIATOR	CAPABILITY	ENABLERS/FEATURES	BENEFIT
FASTER GLOBAL DEPLOYMENT			
5. Vendor-neutral integration to business and automation systems (PLM-ERP-Automation)	• Build standard interface architecture that can be mapped to external systems • Vendor neutrality supports system diversity • Minimize interface (re)work • Provide abstraction layer to enable common control maps to handle diversity in automation • Remove business logic from automation layer	• Standards-based Machine Integrator (MI) layer • Certified Business Integrator (BI) layer • BPM for flexible business logic outside of automation layer • BPM enables flexible functional deployment	• Reduce customization of business systems • Connect MES into manufacturing IT for the plant faster • Eliminates dependency on vendor-specific automation integration
6. Experienced, proven people with references	Trusted advisors and world-class project managers who advise on: • Cultural and governance models to develop and enforce strategy • Functional partitioning and data mastering • Global manufacturing rollout strategy • Manufacturing transformation strategy • Identifying and prioritizing business requirements and value streams	• Working with partners to support global and wave deployment • Expert knowledge of deployment strategies • Portfolio of solution assets proven in previous deployments • Six Sigma-certified Professional Services • Experience with 100's of successful implementations	• Reduce implementation risk and cost • Enable adaptability and flexibility • Enhance value of existing business and manufacturing systems • Roll out faster and shorten time-to-value • Ensure high project performance—quality, budget, time, and acceptance
7. Global manufacturing solution: common solution across multiple production/manufacturing and logistic models	• Common SOA technology solution • Executable BPM • Supports multiple manufacturing models • Supports multiple logistic models	• Common data model across all sites and applications • Wider footprint unifies applications • BPM + local execution • Monitor, package, and distribute processes (PB+GPM)	• Reduce manufacturing IT costs • Improve visibility, control and synchronization across enterprise • Reduce customization of business systems • Improve system acceptance and usage
CONTINUOUS IMPROVEMENT ENABLEMENT			
1. COE on steroids (advanced COE capabilities)	• "Managed innovation": harvest innovation from the field • Simplified forward/backward process deployments • Identify and deploy best practices • Dynamic/Virtual COE (global team) • Enhance existing processes and introduce new processes • Implement and deploy changes and fixes	• Monitor process version and deployment (PB+GPM) • Globally standardize metrics • Global MPI • Define common manufacturing operations across sites (PB+GPM) • Enforce governance for process validation and release (PB+GPM)	• Better COE: Distributed, not just top-down • Leverage scarce manufacturing talent • Enforceable governance to risk of noncompliance
2. Platform approach to all of manufacturing operations	• Extend footprint into additional functional areas	• All applications built on a unified architecture • See "Faster Global Deployment" enablers/features	• Lower manufacturing IT costs • Future proof manufacturing platform • Greater flexibility
3. Evolutionary Functional Capability without the need for software upgrade	• Implement and deploy incremental process updates and additions quickly across one or more sites • Collaborative approach incorporates input from operations faster • Enables and supports Lean approach • Global visibility to identify best practices, performance, bottlenecks, and constraints • Centralized, rolled-up analytics and KPIs	• Visually model and configure business processes • Monitor, package and distribute processes (PB+GPM) • Global MPI	• More manageable pieces (no recompile or plant shutdown) • Avoid risk and delay of big bang upgrades • Accelerate innovation • Lower risk of nonconformance • Better perfect order performance

DIFFERENTIATOR	CAPABILITY	ENABLERS/FEATURES	BENEFIT
DELMIA APRISO TEAM DIFFERENTIATING CAPABILITIES			
1. World-class solution architects and project managers	• Comprehensive knowledge of Manufacturing Operations, ERP, PLM, and automation systems • Flexible and adaptable processes that support Lean/Six Sigma initiatives (that can be adjusted to fit customers' methodologies) • Understanding of confluence of three major technologies (BPM, BI, and MES) • Ability to work with network of Systems Integrators and local implementation firms • Consistent and repeatable implementation methodology	• Highly experienced employees with domain expertise across the enterprise landscape and a detailed understanding of manufacturing and logistics execution • Project management team with vast industry experience and detailed understanding of how to do a global deployment • Ability to work as a trusted advisor across manufacturing, leveraging best practices from across industries	• Reduces implementation time and risk • Highest rate of implementation success
2. Best people in the industry	• Six Sigma-certified professionals • Service professionals with many years of experience in a proven methodology • Ability to work with network of system integrators and local implementation firms	• Professional services team with 10+ average years of experience; 7+ years with DELMIA Apriso • Extensive supply chain, ERP, and manufacturing experience • Accountability that customers can count on • Ability to share experience for 100s of successful implementations and industry best practices	• Achieve a high quality deliverable
THE BOTTOM LINE			
DELMIA Apriso is the only solution that can consistently be deployed to 10-, 20-, or 50-site location manufacturers	• 100s of successful implementations of MOM across 45 countries • Four sites on same day (Volvo CE); 11 sites on same day (St. Gobain) • Multiple other simultaneous "Go-Lives" • Deploy in multiple regions simultaneously • Valeo @ 100 sites; GM @ 30+ sites in ~two years; L'Oréal in Europe and US in ~two years • Flexible deployment methodology follows strategic goals and capabilities • Implementation methodology that is consistent and repeatable	• People, processes, methodology, and product all come together in a consistent and repeatable way proven in large-scale rollouts • See all the capabilities above (and Global Checklist)	• Faster time to value • Reduced cost of IT • Consistent processes • Uniform Metrics, KPIs • Broader visibility and control • Cross-enterprise synchronization • You'll keep your job • Ensure high project performance—quality, budget, time, and acceptance

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