

ARC WHITE PAPER

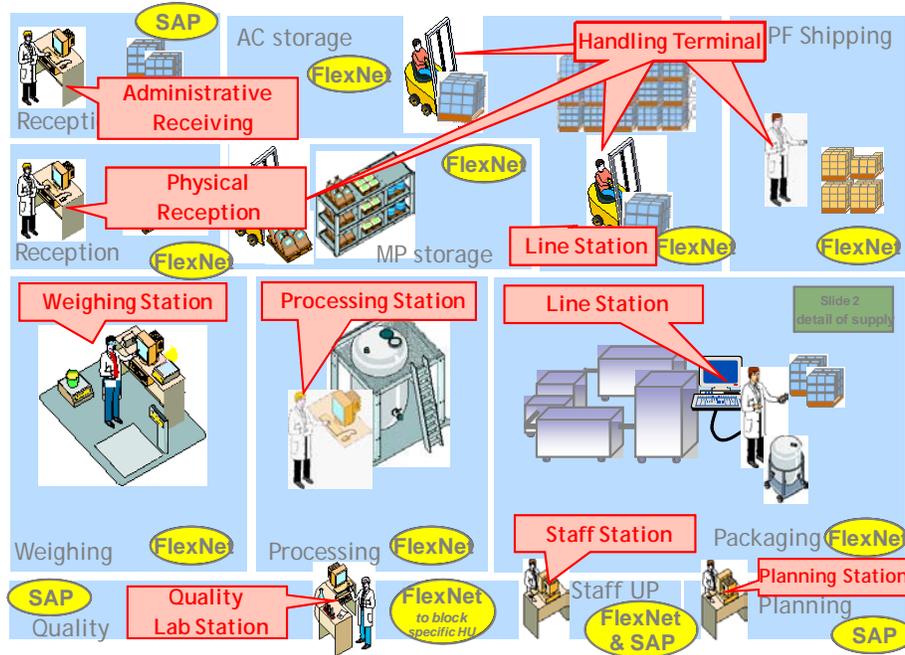
By ARC Advisory Group

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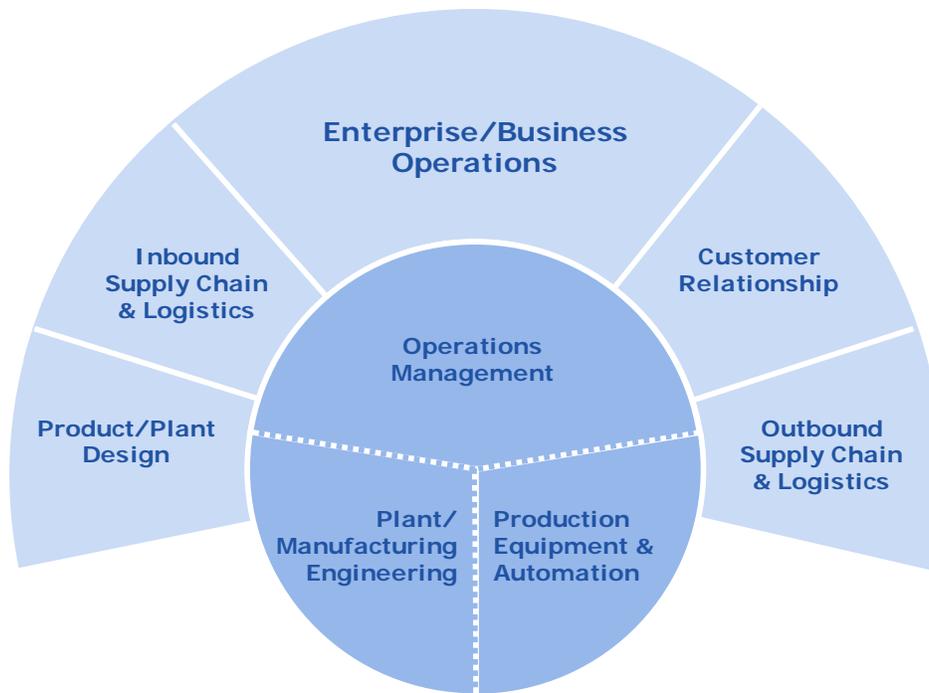
Operations Management: The L'Oréal Way

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Functional Footprint of the Integrated ISIS Operations Management Solution



Collaborative Production Systems for Highly Flexible Manufacturing

Executive Overview

L'Oréal, the world leader in cosmetics, is well underway in implementing an integrated operations management solution across all its factories worldwide. L'Oréal feels this positions the company as a leading global IT user, both in terms of technology and user-friendliness. To reap benefits early, while reducing risk and cost, L'Oréal has implemented both ERP (SAP) and OM (Apriso's FlexNet) in an integrated manner, site by site, using a common "core" model.

Terminology

The somewhat dated term, MES (manufacturing execution system), refers to a limited subset of functionalities defined within the ISA95 standard.

At L'Oréal, manufacturing and "industrial" logistics operations are modeled in and automated by a more comprehensive operations management solution, with the business operations modeled in and automated by the ERP. At L'Oréal, both are part of the same "Operations" organizational unit.

This model allows L'Oréal to capture best practices in supply chain management (including operational logistics), production management, and quality management and drive operational excellence uniformly through the organization by implementing both the applications and the practices on each site worldwide. Best practices are owned by "business owners" who provide a business diagnosis at sites, helping each define and implement the required process changes. Management and personnel at each site take ownership for the implementation of their new processes. This rigorous change management program, sponsored at a high level by L'Oréal's

VP for Operations, has been crucial to the success and acceptance of the solution. Cross-functional teams composed of both operations and IS personnel perform each implementation. IS is an important component to the success by bringing its competence in system design, implementation, management, and support to bear on the solution.

As a result, the sites that use the system can rigorously apply the production procedures that optimize product quality and traceability, while virtually guaranteeing personnel and client security. Traceability and supply chain information are available in real time throughout the organization, providing additional agility.

Apriso's FlexNet operations management solution provides a flexible platform that lends itself to the core model approach, while providing the out-of-the-box, real-time warehouse, logistics, production, and quality management functionality that L'Oréal requires.

How to Successfully Implement Operations Management

Virtually everyone has heard of L'Oréal or used their products. Less well known, is the philosophy that makes the company so successful and also helps make their integrated operations management implementation such a great success. L'Oréal believes that everyone aspires to beauty, so they define their mission as to help men and women around the world realize that aspiration, while fully expressing their individual personalities. L'Oréal consistently applies these principles, not only to their customers but also their employees, society, and the environment. "If you sell well-being, you need to be part of the well-being of the planet," said Jacques Playe, L'Oréal CIO for Operations. All operational objectives naturally derive from this philosophy:

L'Oréal's Values

L'Oréal applies their principles, not only to their customers but also to their employees, society, and the environment. "If you sell well-being, you need to be part of the well-being of the planet," said Jacques Playe, L'Oréal CIO for Operations.

- Ensuring the **safety** of people and protection of the **environment**
- Guaranteeing perfect product **quality**
- Being **innovative** in processes and packaging
- Guaranteeing an excellent **level of service** and shorter **time-to-market**
- Minimizing production and logistical **costs and investments**

Objectives

Rather than just defining requirements of an operation management system, L'Oréal used a holistic perspective to define their specific requirements for operations. These included the changes and improvements needed to be made and how an integrated ERP-operations management solution could be used to drive excellence through a global company in a sustainable homogenous manner. Specific requirements defined included:

- Provide an IT infrastructure including an integrated solution built upon a platform that guarantees the worldwide consistency of the operations model
- Provide real-time visibility and traceability throughout operations to manage manufacturing,

First Optimize the Process

L'Oréal first optimized the operations processes, and then determined how these could be supported by an integrated solution. Too often, inefficient processes are automated.

- Ensure flawless production and logistics operations to guarantee quality and compliance with the ISO 14001 certification and regulations

L'Oréal called their solution, "ISIS," which is both the name of an Egyptian goddess, and the acronym for "Integrated Solution for Industrial Systems." A logo was developed to serve as a symbol for integrity and completeness and represent the solution's capacity to collect dispersed information into a coherent system. Values associated with ISIS are: Innovation, Simplicity, Integration, and Support.

Approach

For each major business process, a process "business owner" (BO), part of the L'Oréal operations management team, defines the requirements for the process. Regional business owners (Zone BO's) support the BO. In an iterative process, the BO or zone BO conducts a business diagnosis on a pilot site, and, working together with site personnel and management, makes



lists of action item defining the improvements needed. Where multiple processes are involved, discussions are sometimes necessary to determine the overall process corresponding to all BO's requirements. The site management takes ownership to implement the changes.

Stéphane de Peyrelongue, ISIS implementation program manager, and M. Playe, jointly insist that the project was largely one of "change," referring to changes in both the processes and in the habits of the employees.

Additionally, the global interaction and sharing among European and North American project team members has allowed for stronger implementations. Weekly status review meetings offer a venue for discussion on lessons learned, states Morris Lenczicki, North America Project Manager. By having this robust interface, it is possible to better focus on the change management aspects of the project implementation.

Significantly, the specifications for the operations management solution were derived from the specific requirements of the process design.

During implementations, site management and local key users (LKUs) support the BOs and Zone BOs. This chain facilitates change management, continuous improvement, and information exchange: the sites are trained in

corporate practices; best practices identified by sites are incorporated into the corporate standard; and the LKU's observations and concerns are quickly addressed.

Vendor Selection

L'Oréal had previously selected SAP for corporate business processes, including supply and demand planning, human resources (HR), and finance. For operations management, L'Oréal wanted a system that would be easy for operators to use, while effectively supporting the corporate functions of the ERP. Following a formal vendor selection process, a well-known MES provider was chosen, mainly for its production management functionality. To maximize benefits, L'Oréal's strategy was to implement the integrated ERP-OM solution, site by site.

L'Oréal had initially assumed that the warehouse management (WM) function would reside in the ERP. However, the central servers could not ensure 24x7 availability and L'Oréal's dynamic supply chain requires real-time visibility and flawless material movement that requires continuous, nonstop communications between the warehouse management systems and the rest of the operations management.

A Dynamic, Global Supply Chain

For L'Oréal's dynamic global supply chain, warehouse management needs to be close to real-time and at least as available as the production management system.

To eliminate errors and ensure that the supply chain would not get locked up by contradictory instructions, it was concluded that -- rather than residing in the corporate ERP business system -- the warehouse management function should, in conjunction with the operations management system, reside at the local sites and run in a real-time platform with 24x7 availability.

Upon evaluation, it was determined that the operations management supplier originally selected could only provide this functionality with custom developments and, thus, the vendor selection process was reactivated. This time, Apriso was chosen based on its capability to deliver a wide array of functionalities out of the box, based on a real-time platform that would allow the desired central development and roll out of configured best practices. Today, L'Oréal uses Apriso FlexNet to manage on-site production, quality, traceability, material movement, and warehouse operations.

The Project: Pilot and Roll-Out

For operations management, one server is used for development and a second for production. This guarantees the integrity of the source. The same principle was used for the global ERP development and roll out.

On the pilot site, following the business process analysis and optimization, the process was divided into tasks and the system configuration specified. The majority of the pilot was developed on site by a cross-functional team composed of operations and IS personnel and led by the program manager from IT. According to L'Oréal, having both IS and operations in the same location allow issues and questions to be sorted out in the shortest time. The company perceived that this mode of operation accelerated the pilot development, which took only nine months (including the vendor change).

On average, the project consumed 70 resources, of which 30 were dedicated to FlexNet. This included personnel from operations, application development, documentation, and training. Every two weeks, both the application itself and the implications for the process were reviewed in project meetings. L'Oréal managed progress in a classic fashion based on deliverables by bi-weekly milestone. Project quality control was done by peer review for each deliverable, followed by a second validation by the BO or Zone BO. L'Oréal used a beta release for the site to test and become familiar with the new processes, followed by a production release. BO's and Zone BO's conducted a second audit three months before, and a final audit, just after the release. Analogous to ERP development and roll out, the resulting FlexNet application became the "core" application, applicable to a large extent to other sites.

Developing on Site

Having both IT and operations in the same location allows issues and questions to be sorted out in the shortest time, accelerating the pilot development time.

Developing on Schedule

By reusing the core model to implement the solution for different sites, implementation is highly efficient.

L'Oréal used a similar process during the site roll out phase. Process analysis and improvement begins three months ahead of the application configuration. This is necessary, since every site is slightly different and each needs to take ownership of and allow sufficient time to implement process changes. Site-specific configurations take less time, just seven months on average, since they are based on the core application.

During the first years of the rollout phase, two teams -- one in Europe and one in North America -- performed simultaneous implementations at different sites. Currently, 11 sites are "live" and the program is on schedule to have

60 percent of group production managed using ISIS by mid 2009. According to L'Oréal, once a site goes live, it immediately reveals glitches in the actual work processes, even if the theoretical process is perfectly designed. This leads to further process adjustments and improvements. For example, QC samples on which non-destructive tests have been done need to be in-

tegrated into the finished goods inventory. If the system is not configured to reflect this, the system's information on the amount of finished goods is inconsistent with the actual amount, leading to discrepancies in accounting and excess work-in-progress.

Following initial beta implementation, L'Oréal completed the second through fifth implementations at a relatively rapid pace. Since L'Oréal was concerned about deviating too far from the core application, user comments and concerns were collected and evaluated. Today, a process is in place to govern the selection and implementation of a best practice into the core model. These "versioning" modifications are implemented based upon both resource availability and validation by the BO. This process helps to improve user acceptance of the solution and its enhancements.

A Typical Work Process on a Site Using ISIS

With ISIS, production planning is done in the SAP-APO module, complemented at some sites by a detailed production scheduler. Based on real-time information and supported by agile processes, production can be re-scheduled up to three days before production. The objective is to provide flexibility, while protecting site operations from excessive disturbances.

When primary materials are received on site, they are identified and labeled; the material composition and history, lot number and the identity of the provider are entered. Samples are taken and tested to verify that the primary material's quality meets specification. Once the lot is accepted, the

What the Operators Say

One operator said that she feels secure because she is certain to execute the procedures correctly.

Another says that operations are simpler than before and that the system saves her time. She feels autonomous and responsible for her work, and more comfortable.

results are attached to a lot identifier and all information is available to operators throughout the production process by scanning the label. The system chooses a location in which to store the material, indicates this to the fork truck driver, and manages primary material inventory.

In production, when an operator opens a production order, the corresponding recipe is displayed and guides the operator through the procedure. The system checks the availability of primary materials for the lot before production starts and then guides the operator through the different production steps. When the operator scans the materials, the system verifies that it is the right material and complies with the quality specifications. This guidance increases operator comfort level in being able to execute the procedures correctly. This is significant when you consider that each site

can produce products according to hundreds, or even thousands, of different recipes.

ISIS visually guides the operator through the weighing process to match the recipe. The actual amount of material consumed is automatically recorded and the primary material inventory is updated. An identification label is printed and affixed to the product. In the system, this identifier is linked to all information on primary materials, their composition, quality, and shelf lives for the lot.

Before each packaging operation, the system checks the availability of both equipment and packaging materials and characteristics. The system informs the fork truck driver which materials and products to bring to the packaging station. Upon arrival at the station, the packaging operator scans the materials to check the procedure for the order. The system also prescribes the quality control samples that must be taken to comply with the ISO standard, while optimizing the number of quality checks. This too increases operator confidence in being able to execute orders correctly. Interviews with packaging line operators confirm that the system is simple to use, saves time by reducing the need to search for information, and thus helps contribute to reduced stress in the workplace. The system also managed product shipping, including real-time material movement, order management, and inventory management functionality.

Benefits

The benefits that L'Oréal reports from ISIS correspond exactly to the company's objectives. Specific benefits mentioned include improved security for clients and personnel; improved rigor in production and quality procedures

Solution Benefits

- Improved security for clients and personnel
- Rigor in production and quality procedures
- Real-time, on-line traceability
- Comfort and satisfaction for the operators
- Products of irreproachable quality

to enable real-time, on-line traceability; a more comfortable and satisfying work environment; and consistently high quality products for consumers. In short, the system both monitors and guarantees the proper production process.

According to M. Playe, Apriso FlexNet simplifies many things for L'Oréal. From a global point of view, the diversity of practices is reduced and practices across the global manufacturing sites more closely conform to corporate best practices. This corresponds to the objective of driving global operational excellence. Operations activities at each site are simplified or reduced in number. An example is automated

dispatching of production orders on production lines, as well as automation of many other production, quality, and warehouse management tasks.

Simplification encourages usage of the integrated ERP-OM application, and has not only direct benefits for production, but also brings synergistic benefits

Integration Benefits

- Facilitates and stimulates ERP usage
- Integrated ERP-OM roll-out brings benefits earlier, reduces elapsed time, cost, and risk compared to sequential implementations

through more effective ERP usage enabled by the OM. Examples include fewer discrepancies of actual-versus-plan, reduced primary materials consumption, less work-in-progress and reduced finished goods inventories, reducing waste throughout the manufacturing process.

Obviously, the simultaneous ERP-OM implementation has brought benefits earlier than a two-stage implementation. L'Oréal also mentions that introducing the ERP and the OM solution separately would have increased cost and risk. In this case, the joint ERP and OM implementation yielded combined benefits that exceeded those that L'Oréal would have realized from implementing each application as a stand-alone solution.

Conclusions

- Successful implementations of change in an organization, such as large IT deployments, require a change management approach that transfers ownership for the changes to those who have to apply those changes, such as site management and personnel. Ownership can only be transferred when the project sponsor fulfills his/her role. IT has an important role, as a service provider.
- A "core" model approach is one of the most efficient ways to manage large-scale operations management implementations. A flexible platform, such as Apriso FlexNet, allows processes and best practices to be captured and globally distributed.
- An OM solution combined with ERP can deliver greater combined benefits than separate, sequenced implementations.
- To manage an integrated supply chain on a global scale that operates in near-real-time, warehouse management and logistic functions of OM need to be real-time applications and available 24x7, or at least according to the same specification as the manufacturing-related functions of the OM solution. Each of these OM applications needs to seamlessly communicate with other enterprise applications, such as ERP and PLM.

Analyst: Valentijn de Leeuw

Editors: Greg Gorbach, Paul Miller

Acronym Reference

For a complete list of industry acronyms, refer to our web page at www.arcweb.com/Research/IndustryTerms/.

BO	Business Owner	LKU	Local Key User
CIO	Chief Information Officer	MES	Manufacturing Execution System
ERP	Enterprise Resource Planning	OBO	Operational Business Owner
ISO	International Standards Organization	OM	Operations Management
IT	Information Technology	QC	Quality Control
		WM	Warehouse Management

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