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THE DDMRP PROJECT AT VALMEX
IMPLEMENTATION PHASES AND RESULTS

Introduction to Valmex

Based in Lucrezia di Cartoceto in the province of Pesaro and Urbino, Valmex S.p.A. is one of the world's leading producers of heat exchangers for domestic gas-fired wall-hung boilers. With its strong vocation for innovation, Valmex stands out for its ability to provide advanced solutions in the field of heat and refrigeration technologies. Through an integrated process that goes from product design through to final delivery, Valmex has earned a reputation for excellence in the industry.

The opportunities for improvement that led to the DDMRP project

Since 2011 Valmex had used software based on the Theory of Constraints to manage its supply chain. However, over time, the system had proved unsuitable for handling the increasing variability of demand and the introduction of new products on the market. This had led to an increase in manual activities with the frequent rescheduling of internal and external plans with Suppliers, rising operating costs, rising stock levels as well as the potential risk of reductions in the quality of customer service.

In 2020 the Valmex Team decided to learn more about the DDMRP methodology by taking part in a DDMRP webinar held by Advance SC Solutions, the Advance School consulting division. The Valmex Team subsequently decided to launch a feasibility study with Advance.

The Advance approach to the DDMRP project

Advance, an international partner of the Demand Driven Institute since 2017, supported Valmex throughout the DDMRP implementation process. Following a methodical approach, the project was implemented with cutting edge project management techniques through a consolidated Advance Supply Chain Solutions DDMRP roadmap.

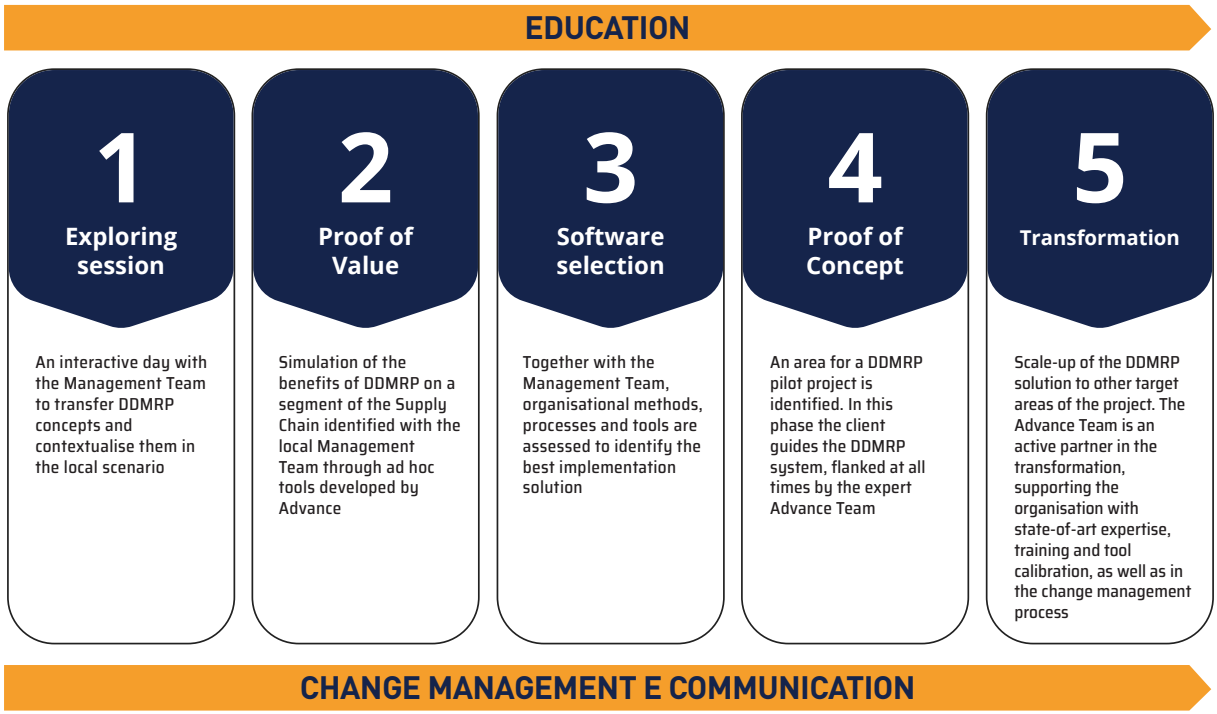

Figure 1 - Advance SC Solutions roadmap for DDMRP projects

"Advance Team's extensive DDMRP experience helped us to make the right choices in each phase of the project."

Barbara Nesta – Procurement and Logistics Manager – VALMEX

Below is a brief outline of the main features of each phase.

1. Exploring Session

An interactive training day was organised on site with the Valmex management team to transfer basic DDMRP concepts and contextualise them in the local scenario. A Value Stream Map was created as part of this working day, on the basis of which a draft of the potential pilot Supply Chain segment and allocation of buffers was created.

2. Proof of Value

Once the supply chain segment of interest was identified, some representative finished product codes were identified on which to carry out a DDMRP simulation. The objective of this phase is to evaluate, using real customer data, the benefits the company can obtain with DDMRP. Several pieces of data from the previous 12 months relating to a family of selected and representative finished product codes were therefore extracted from the company database. The Advance team entered this data into its own proprietary simulation software. Buffers were then appropriately positioned and sized in optimal areas of the supply chain segment.

At the end of this process, a graph was produced showing the stock and service levels that would have been obtained using DDMRP rather than the existing planning system (see example below).

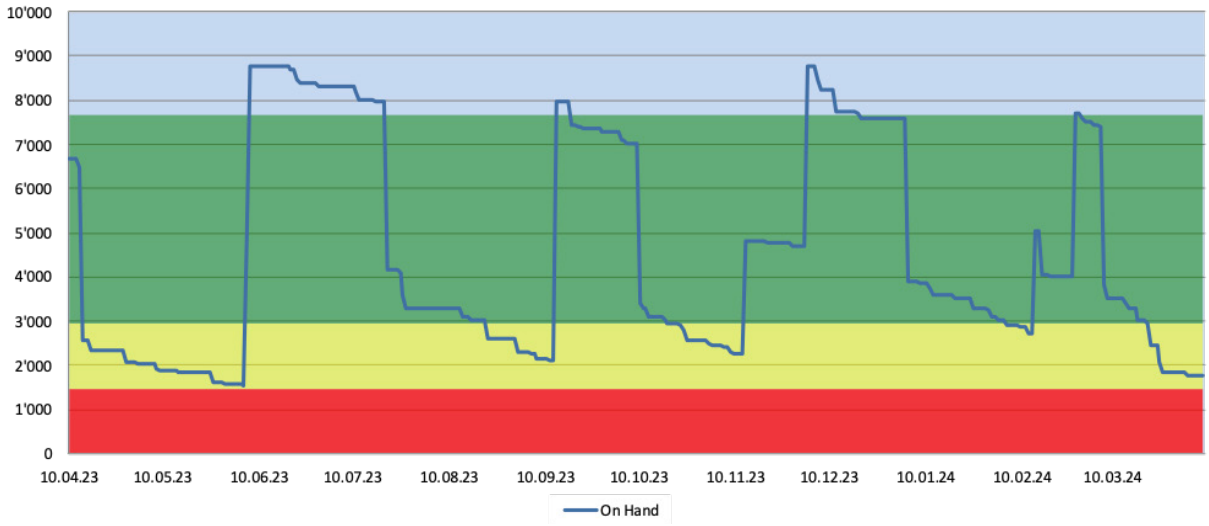

Figure 2 - Stock trend with application of DDMRP

From this analysis, it was possible to observe the significant improvement in both service and stock levels resulting from the use of DDMRP. These results were then used as input for the preparation of the Business Case (illustrated below in section 4.1).

3. Software Selection

In this phase, necessary before moving onto the Proof of Concept step, Advance identified potential software on the market from the approximately 30 available at the date of the project, with a DDMRP module developed and officially approved by the Demand Driven Institute. After an initial shortlist compiled on the basis of various parameters, including available features, costs and company organisation and capabilities, relative Demos were organised with selected software providers, involving both the entire Valmex and Advance teams: the aim of these Demos was also to assess the degree of support from the software companies in both the customisation and implementation phases. Also critical was the presence of the Valmex IT Team which had to evaluate the software in terms of its interface with the existing management system. At the end of the Demos, Advance prepared a comparative overview of the software with the pros and cons of each solution and recommendations: the Valmex Team then made its choice.

4. Proof of Concept

Together with the Valmex Team, the Supply Chain segment in which to implement DDMRP was subsequently confirmed and clearly outlined, along with its product codes and bills of materials. This Supply Chain segment was a very important area for the company, with demand growing strongly but very variable. In addition, the aim was to cover the supply chain of the area in its entirety, from the end customer to production at Valmex through to the raw materials, integrating suppliers who would have visibility on the priorities indicated by the DDMRP system, based on the established and updated buffer levels. This segment of the Supply Chain had already been discussed in general in the previous steps, such as in the Proof of Value. The scope of activity was then included in the Project Brief with a clear indication of the project and governance team. The next step was the preparation of the Business Case, required to request the Valmex Leadership Team's approval of the project and its related investments.

4.1 DDMRP Project - Preparation of Business Case

All the data required to prepare the Business Case was collected on an official company form, to be submitted to the Management for approval. The Business Case outlines the context, the driver of the change, the required investment and the resulting benefits.
In the case of Valmex, the following benefits were expected:

a) Improvement of Customer service levels and optimisation of inventory levels throughout the Supply Chain. The reduction in the amount of space needed for stock would also have made it possible to avoid investments in new warehouses.

b) Reduction of operating costs, deriving from non-value-added activities such as expediting, changes to internal and external orders to suppliers, manual inputs.

c) Creation of an automatic Supply Chain KPI Dashboard to track performance, identify areas for improvement and monitor the results of the improvement actions launched.

d) Introduction of a medium/long-term planning process to promptly solve critical issues in the production plan on the basis of demand forecasts.

These benefits were quantified both with calculations and simulations and through Advance benchmarks deriving from previous DDMRP implementations. Implementation costs and investments were then incorporated in order to calculate NPV and IRR. Once the Business Case was approved by the Leadership Team, work started on the implementation of the project.

4.2 The Project Team

The team consisted of the Supplier Planning and Management (Barbara Nesta and Francesco Conti) and IT (Stefano Zannini) functions, with the sponsorship of Massimiliano Paolucci, Operations and Supply Chain Director. To ensure the success of the project, it was important to form a cross-functional team from the outset. For Advance, the team consisted of Daniele Meldolesi, Partner, and Patrick Rigoni, Lead DDMRP consultant. A Governance team and a Steering Committee were then formed to enable the involvement of all stakeholders, regular monitoring of the progress of the project and the prompt resolution of any critical issues and/or Red Flags.

4.3 Planning and Implementation

The Valmex implementation team was supported by Advance consultants during the preparation of the implementation GANTT, the allocation of resources, and the kick-off and implementation of the project. A DDMRP training and development plan was created for Valmex employees: members of the implementation team, future users of the DDMRP software and Valmex Managers. DDP (Demand Driven Planner) and DDL (Demand Driven Leader) training was then provided. Subsequently, the Valmex Team worked with Advance consultants to decide where to place the Buffers and how to size them along the entire supply chain within the scope, from raw materials to finished products.

"The most critical part of a project of this type is change management. Technical solutions can always be found: DDMRP has been successfully implemented in a wide variety of business scenarios. The key thing is that all stakeholders are determined to implement the change."

Patrick Rigoni, Lead DDMRP Consultant, Advance SC Solutions

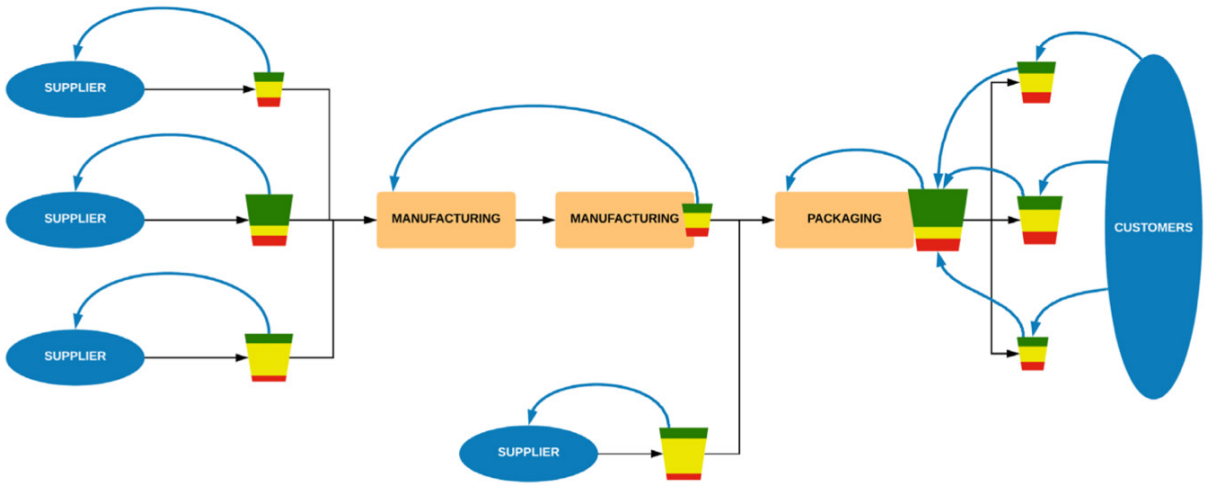

Figure 3 - Example of Supply Chain with positioning of Buffers

"The joint work of the Valmex and Advance Teams and the involvement of all stakeholders meant that implementation took place without any critical issues, according to the expected timeframes and costs, and with the envisaged results."

Massimiliano Paolucci, Operations and Supply Chain Director, Valmex

4.4 Data transfer from the management system to DDMRP software

Like with any DDMRP implementation, it was necessary to populate the software environment with data from the company's management system such as Master Data, BOM, open orders (supplier and customer), stock levels, etc. Standard format files to be populated with the management data were then prepared together with the software consultants. The interfaces for data exchange between the two systems were then tested and the frequency of data updating and exchange defined.

After a few weeks of preparation and testing, the DDMRP went live. In the first few weeks the Valmex Planning Team performed regular updates with Advance consultants to monitor the functioning of the DDMRP, check the outputs and if necessary make little adjustments. Thanks to the intense study and preparation work, only minor tweaks were required. The system went live with no critical issues and users quickly became familiar with the system and dashboard.

"The excellent collaboration between Valmex, Advance and the supplier of the DDMRP software enabled us to develop a tailor-made solution for Valmex in a very short time. All of this despite the logistical difficulties of being in the midst of the Covid crisis."

Patrick Rigoni, Lead DDMRP Consultant, Advance SC Solutions

5. Transformation

After gaining experience during the Proof of Concept phase, DDMRP was expanded in the following years to other Valmex Supply Chains with very limited incremental investments. Today Valmex has acquired significant expertise on Demand Driven MRP thanks to the training it has received, the implementation of the system and the extensive experience it has built up.

Evaluation of project and benefits achieved

After a period of a couple of years, a general evaluation of the DDMRP project was performed together with the Valmex team. The project was evaluated on the basis of 4 general aspects:

- **Effectiveness**
- **Efficiency**
- **Risks**
- **Sustainability**

It was important to allow a reasonable period of time to pass in order to be able to evaluate the following two aspects:

- **Effectiveness: Did the implementation deliver the expected results?**
- **Sustainability: Have the benefits been sustainable over time?**

Project evaluation criteria

"The DDMRP allows us to plan and manage inventories (both materials and semi-finished products and therefore also the production side) much more accurately than before."

Francesco Conti – Procurement Specialist – VALMEX.

Benefit	Achieved?	Actual
Inventory Reduction RM + WIP + FG	✓	Achieved -10%
Increased service level to cope with growing demand	✓	Achieved + 5%
Reduce expediting in transportation, cross-shipping, rescheduling	✓	Achieved -0.3 FTE on these no added value activities
Rework, Re-processing, Re-scheduling	✓	Eliminated
Better capacity utilisation at critical resources	✓	Achieved
Integration with customer/suppliers: negotiate better conditions	✓	Reduced costs Achieved
Penalties for late Delivery	✓	Eliminated
Stability in production	✓	Improved
Real Time Visibility of main KPIs	✓	Achieved Implemented Dashboard for Main KPIs E2E

"The adoption of DDMRP provides a clear daily overview of variations in resource saturation (following order updates/customer forecasts), enabling you to react and balance production loads more effectively."

Barbara Nesta – Procurement and Logistics Manager – VALMEX

The Advance SC Solutions Team

DANIELE MELDOLESI

Partner and Founder of Advance

PATRICK RIGONI

DDMRP Expert, Master Instructor

Demand Driven Institute, Advance

Advance Supply Chain Solutions

Advance Supply Chain Solutions is the consultancy division of Advance, Premier Elite Partner of ASCM/APICS. It provides consultancy services in the Procurement, Supply Chain Management, Lean Six Sigma and DDMRP areas.
Advance SC Solutions' assessment and implementation method has allowed companies of various sizes and from different sectors to quickly improve their performance levels and reduce Supply Chain costs.

For more information about our services write to: info@advanceschool.ch

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