

CNO – NETWORK 2010



Rolling Production Forecasting at Johnson Electric: Less complex and more accurate



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The title Chief Networking Officer (CNO) refers to the person in senior management that is responsible for connecting a company to its customers, suppliers and partners. The CNO supports intra- and inter-company business processes using information technology and telecommunications, in order to ensure that participating employees can work together in an efficient and effective manner.

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1 Johnson Electric

Johnson Electric develops and produces electric motors, switches and programmable controls for various areas of application in the automobile industry and numerous other sectors, such as household appliances and electric tools. With a production volume of three million finger to fist-sized motors each day, the company is one of the largest providers of electrical drives in the world. 39,000 employees in 23 countries represent the company at the most important industrial locations in Europe, Asia and the USA. Johnson Electric generated a turnover of 1.7 billion US dollars in 2009 – a difficult year for the automobile industry and its suppliers.

The company is characterized by a high level of vertical manufacturing integration: 1.) the products and resources are developed and manufactured inhouse; 2.) starting with the raw materials, such as synthetic granules and metal bands, all manufacturing stages (from component production to assembly of the finished product) are handled in the company’s own manufacturing facilities; 3.) technical support is also covered by the company. Although the company focuses primarily on customer-specific, large volume business, it also manufactures a wide range of standard products.

*Franz Lübbers,
Consultant*

“The time and effort required for rolling production planning was immense. However, the high level of vertical manufacturing integration and corresponding amount of tied capital made it worthwhile.”

This case study describes how Johnson Electric increased the accuracy of rolling production planning, in order to reduce the amount of tied capital in the production area. With the help of the CRM solution Salesforce.com, projectnet gmbh was able to improve the end-to-end flow of information, which, in turn, increased the quality of rolling forecasts. In doing so, neither the existing ERP and planning solutions nor the time and effort for customer advisors was increased. The reduced amount of time alone required by customer advisors to enter data made the project worthwhile.

Contact person	Company	Function
Marc Quanten	Johnson Electric	Global leader for sales force
Franz Lübbers	Lübbers Industry Consulting	Consultant
Werner Grätzer	projectnet gmbh	Managing Director
Norman Briner	sieber&partners	Author

Fig. 1: Contacts

2 Complex rolling forecasts

Customers expect delivery times of between three and four weeks from Johnson Electric. However, this is not enough time to manufacture a product if the initial production is not started until the orders are received. With the help of a buffer store, delivery times can be reduced. This ties capital and increases liquidity requirements, however. Johnson Electric, just like any other manufacturing company, therefore tries to reduce the amount of tied capital in order to increase profitability. To enable this, rolling forecasts (forecasts that are updated on a monthly basis) are created in order to determine the required number of units. More precise forecasts lead to lower tied capital amounts and, subsequently, increased profitability.

Johnson Electric has been using rolling forecasts for the production area for many years now. Due to the complex structure of the Group, which includes numerous different products, customers, production locations and IT systems, the sales forecast data had to be entered manually into Excel sheets by the sales executives in the respective sales regions, based on the various specifications of production managers at approximately 10 manufacturing sites. The utilisation of these rolling forecasts enabled Johnson Electric to significantly reduce the amount of tied capital required by the company. In addition to the orders, the customer advisors also entered data regarding sales opportunities. This data was used exclusively by the production managers to determine the required number of units.

These rolling forecasts had two weaknesses, however:

- A considerable amount of time was required to manually enter the orders and sales opportunities and analyse the Excel files. In Johnson City in China, the largest manufacturing location of Johnson Electric, numerous employees were responsible for checking the data in the Excel files.
- The customer advisors were only able to integrate their knowledge of the purchasing intentions of the customers they supported via the forecasts provided by the sales executives.

When Salesforce.com was introduced as the new Customer Relationship Management solution (CRM solution) in Europe, Franz Lübbers (former project manager for Johnson Electric Europe) and Werner Grätzer of projectnet GmbH recognised the possibility of using this system for rolling forecasts, in order to address the areas where room for improvement existed.

3 Precise data thanks to end-to-end information

3.1 Data basis for forecasts

Rolling forecasts utilise historic and current data to calculate forecasts for the near future. At Johnson Electric, the following data is taken into consideration:

- Historic production volumes
- Current customer orders
- Expectations of customer advisors with regard to sales

The historic production volumes and the current orders are entered into the Enterprise Resource Planning systems (ERP systems) at the manufacturing locations. Sales figures and expectations regarding future orders are entered into Salesforce.com by the customer advisors.

During resource planning, the production areas focus on the end product as the basis for creating planning units. As a product can have more than one purchaser, the sales areas focus on a different aspect when creating planning units, namely a combination of customer and product data. Even if the end product is sufficient as a planning unit after aggregating the customer requirements, the perspective is still different initially.

The combination of customer and product data therefore forms the smallest common denominator for the planning units from both the production and sales perspectives. This information forms the basis for the exchange of information between the CRM system and the various ERP systems. This ensures a direct, end-to-end flow of information from the customer support to the production planning areas, as the customer advisors can only provide information on the development of their own customers and the products that they support. Aggregation at the product level is completed automatically in the system.

Johnson Electric's rolling planning system is divided up into around 40,000 customer-product units. Even with a team of around 100 customer advisors, it would not be sensible to request monthly updates for such a large number of planning units, as the time required to complete this work would mean the advisors would have hardly any time for the actual customer support activities. The automatic calculation of forecasts is therefore the sensible option.

3.2 Calculation and verification of the forecasts

Thanks to projectnet's excellent Salesforce.com knowledge, this solution can be used for the calculation and verification of forecasts, in addition to the collection of knowledge from the customer advisors (cf. figure 2). All data is automatically exported from the ERP solution and saved as of CSV files. The production data and orders are then extracted from the overall data on a virtual server using SQL commands, before being imported as CSV files into Salesforce.com. Following this, the ERP data is divided up

across the 40,000 customer-product units and supplemented with sales expectations data from the customer advisors. By multiplying the planning units and the respective planning periods, approximately 1,000,000 data sets are generated, which are updated on a daily basis using this process. An algorithm automatically calculates the preliminary forecast.

The customer advisors check some parts of the automatic forecast. Customers with large order volumes have the greatest effect on the forecasts. This information is therefore checked carefully by the customer advisors, i.e. it is either confirmed or corrected.

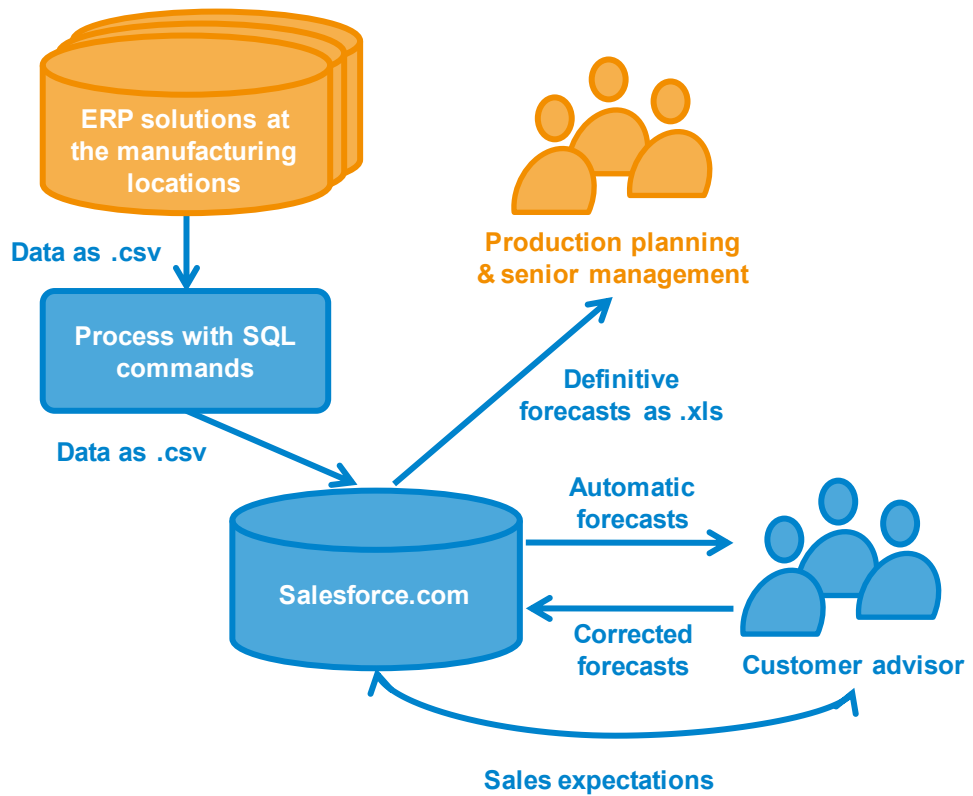


Fig. 2: Solution architecture

The definitive forecasts are either transferred back to the ERP system as CSV files or forwarded as Excel files to the production managers, in order to enable production planning. Furthermore, the sales executives, production managers or country managers can review the forecasts down to the very last detail using the analysis function of Salesforce.com (cf. figure 3).

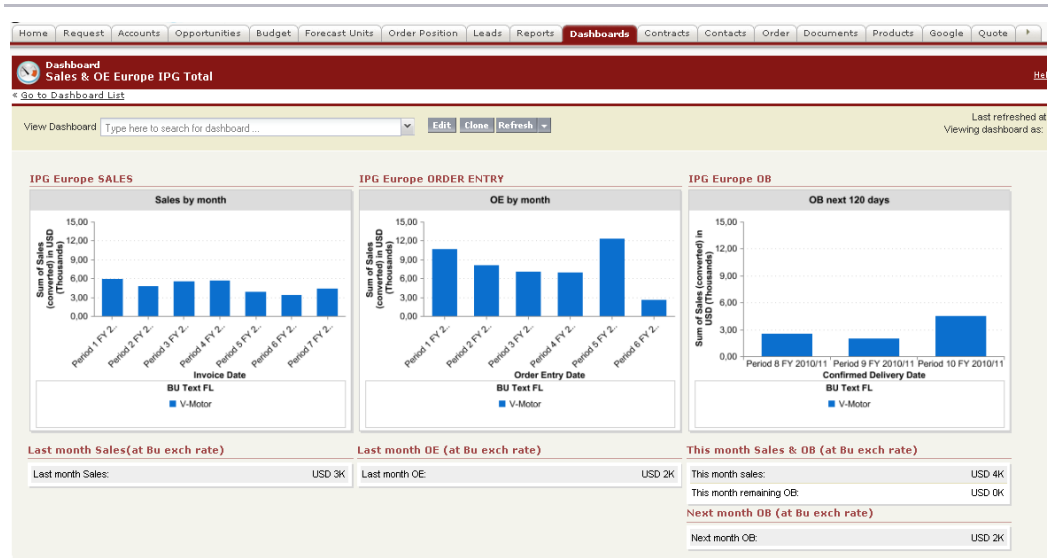


Fig. 3: Analysis in Salesforce.com.

4 Reduction in time & effort and tied capital

4.1 Increased profitability thanks to more precise forecasts

The knowledge of each customer advisor flows into the production forecasts. This integration of knowledge from the front improves the data basis and increases the accuracy of the forecasts. This ultimately leads to a reduction in tied capital and an increase in profitability.

*Franz Lübbers,
Consultant*

“The customer advisors can bring their knowledge into the planning process, thereby helping to significantly improve the forecasts – what’s more, this also means they have already entered their data for the sales reports.”

4.2 Faster sales reports

Thanks to the introduction of the Software-as-a-Service solution from Salesforce.com, customer advisors can now save comments and notes on their customers from anywhere and at any time and generate their sales reports with a few simple clicks of the mouse.

In the past, each customer advisor required at least one or two hours to create their sales reports, this work can now be completed in a matter of minutes. The reduced burden on the customer advisors alone means it will be possible to achieve a Return on Investment for the project within a matter of months.

4.3 No adjustments to existing IT

Due to the versatility and performance of Salesforce.com, it was possible to implement the solution with minimal time and effort and costs. What’s more, it also meant that no adjustments had to be made the various ERP and production planning solutions in use within the company. This, in turn, provides numerous benefits during implementation:

- The solution can be rolled out to the national companies on a step-by-step basis;
- it can be implemented within a matter of weeks, and
- the implementation costs are low.