Dealing with the crisis

Endoscopy Spain Business Case

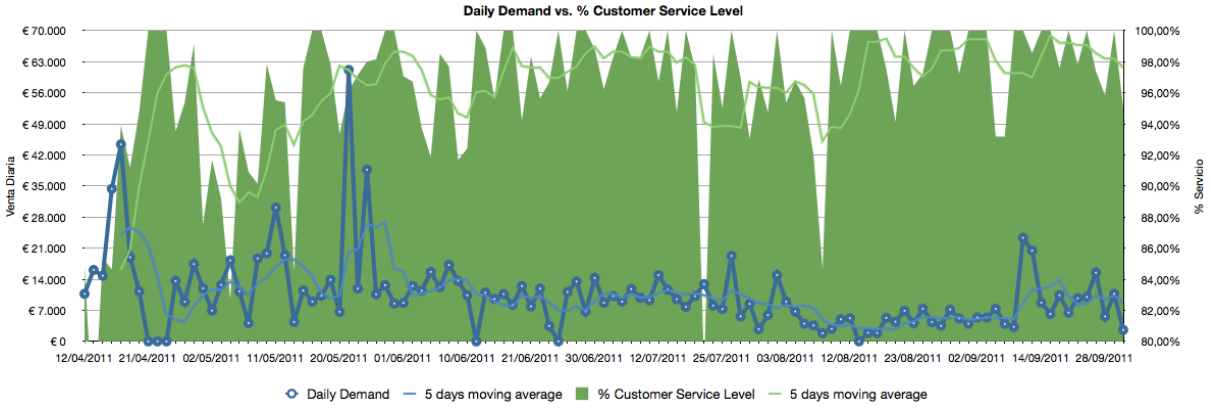
Smith & Nephew is a global business engaged in the development, manufacture and marketing of medical devices in the sectors of orthopaedic reconstruction, orthopaedic trauma and clinical therapies, endoscopy and advanced wound management. Company shares are traded at the at the LSE with symbol SN and NYE with symbol SNN. At the same time it is one of the FTSE 100 index companies.

On this report, we will cover how one of the company business units in Spain, endoscopy, has battled against the crisis becoming a more competitive company by raising their supply chain performance indicators. This analysis has been done with daily data form April to September included, 2011. The indicators that have been observed are inventory value, backorder value, daily demand and customer service levels.

To become more competitive and improve supply chain key indicators, Smith & Nephew implemented Planning Studio 100, a CAS (Complex Adaptive Systems) which executes supply chain strategies defined by planners without any human intervention.

Demand vs. Service

Planning Studio 100 was implemented between December, 2010 and March 2011, releasing its first orders to suppliers in mid March. Data shown in this issue started to be recorded in April, 14th.



During this period, daily demand fluctuated between 5 and 15 K € with outliers as far as 63 K, while customer service has increased from late eighty's over 96% as stated by the the five days moving average (green line).

Achievements to focus on are:

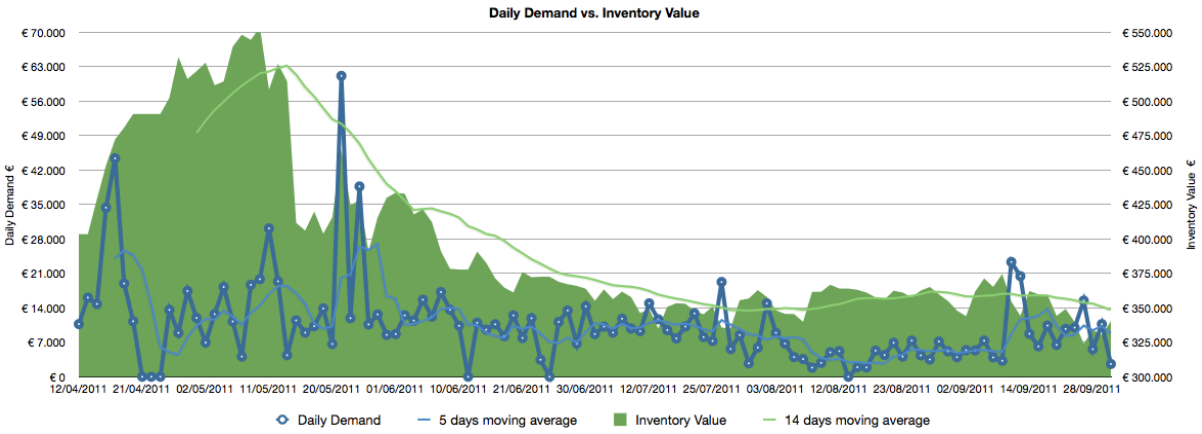
- Customer service levels are not hit when daily demand increases abruptly, as it happens in May.
- In terms of adaptiveness of Planning Studio 100, take a look to September demand which have increased 30% over previous periods and customer service level is still above 96%.

Demand vs. Inventory

First orders were released by Planning Studio 100 in mid march and arriving the inventory at beginning of April. Inventory value before march fluctuate between 350 and 375 K €.

Accomplishments to highlight are:

- The chart shows that the inventory hold previous to Planning Studio 100 was not properly balanced. There were parts with excess inventory scoring higher customer service levels than agreed and others less than required. For those which were not achieving service targets, Planning Studio 100 launched orders which increased the inventory as observed in April.



- Since mid May, the inventory reduction goes from 550 K to 350 K € as shown by the 14 days moving average. If you take a closer look to September daily values, there is a further fade-out of inventory reaching values below 330K €.

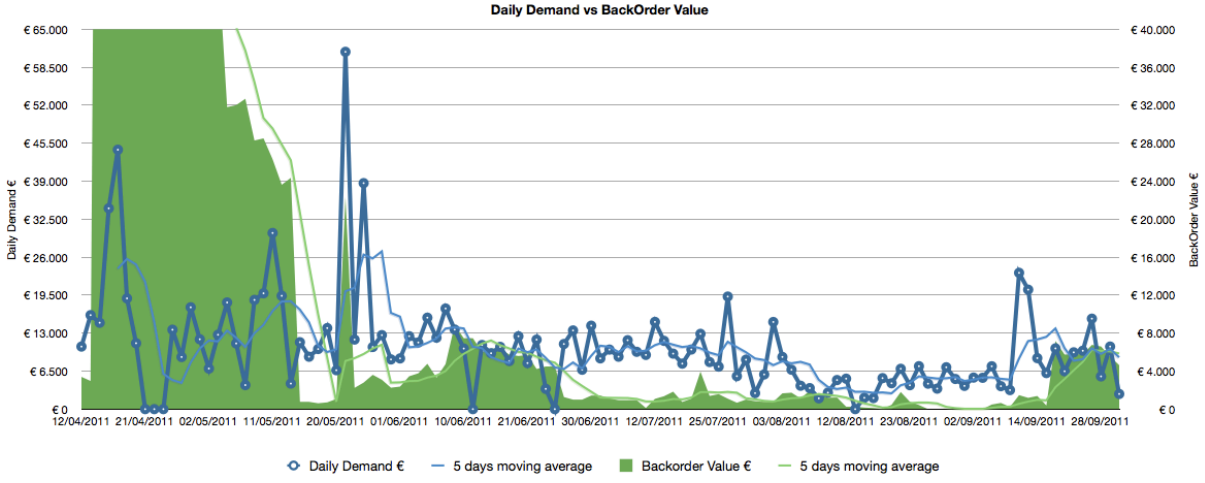
- In the next 4 months we expect to ease inventory value under 300 K € with the implementation of a new technology by Planning Studio 100 which is described in "**New strategies for managing very slow moving products**"

Demand vs. BackOrder

Even though during April, daily backorder values were extremely high, hitting 150K € several days, values previous to begin using Planning Studio 100 were always over 25 K € daily. So we have considered that average value before the implementation was between 25 and 30K €.

Facts to point out are:

- Backorder value has plunged to a fourth of what it was, from 25 K to a maximum of 6 K € considering 5 days moving average.
- From July till mid September, backorder value has been below 2K €



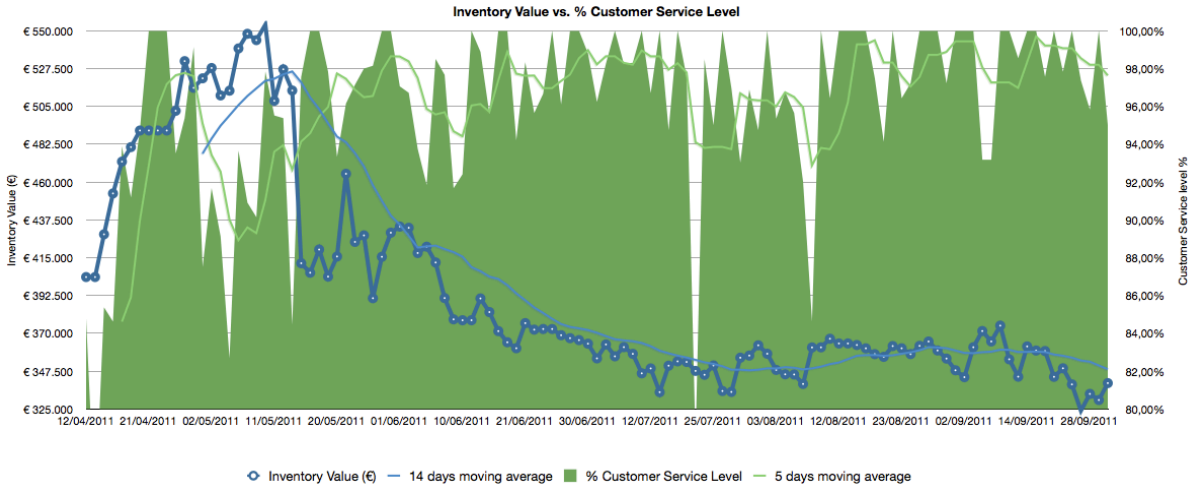
- The impact of a outlier demand value, as happened at the end of may reaching 61 K € when ordinary figures are always below 15 K, has a very limited impact on backorder which hit 22 K €.

Inventory vs. Customer service

The chart clearly illustrates that there is no impact on customer service levels as a consequence of a radical reduction of inventories. As described earlier, inventory levels before Planning Studio 100 implementation were in the range of 350 K to 370 K €.

Hitting inventory value all time lows as happens in September (330 K €) does not have a negative effect on customer service levels preserving it over 96% measured as 5 days moving average.

Statistically speaking there is no correlation between inventory value and customer service levels, something that can been seen in the following graph:



Inventory categorization

To put in the picture the reader about the accomplished results with the implementation of Planning Studio 100 at Smith Nephew Endoscopy in Spain, these are the figures which categorize the problem:

- 1,617 parts are planned daily. Of those 535 are planned to order and 1,085 are planned to stock.
- In terms of historical demand available, 1,261 parts have more than a year and 356 less than that.
- From those with a history longer than a year, 57% of them were demanded 2 or less times a year. The current distribution is: 432 were never demanded during last year, 190 were demanded once, 104 were demanded 2 times, 64 were demanded 3 times, 41 were demanded 4 times, 37 were demanded 5 times, 32 were demanded 6 times, 20 were demanded 7 times and the rest, 341 were demanded 8 or more times during last year.
- From those with a history shorter than a year, 61.8% of them were demanded 2 or less times a year. The current distribution is: 243 were sold 0 times, 71 were sold one, 17 were sold 2 times, 9 were sold 3 times, 4 were sold 4 times, 4 were sold 5 times, and the rest, 84 were sold 6 or more time over their existence.
- Lead Times have been calculated to cover a risk of 95%, so 95% of the times real lead times from suppliers will be less than the calculated lead time. 1,106 parts have a lead

time of 14 days or less, the rest 511 have a longer lead time, being the maximum 105 days. Just 11 parts have a lead time over 45 days.

- In terms of cost, 50% of the parts have a value of 100 € or less. The current distribution is summarized as follows: 220 parts have a standard cost of less than 30 €, 580 parts are between 30 and 100 €, 673 parts are between 100 and 600 €, 115 parts are between 600 and 3,000 €, 29 parts are over 3,000 €, being the maximum value 20,763 €

Acknowledgements

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Even though Planning Studio 100 is just another piece of software, its implementation is quite different from an E.R.P.. Understanding, dealing and managing uncertainty has nothing to do with defining and executing processes and workflows.

Verifying and checking the decisions taken by Planning Studio 100 to better execute our strategies is not always easy. Finding out that things are not always as we thought they were is always a challenge .

About the author

José Luis Casado (casadoj@obi-corp.com) is the CEO of On Board Intelligence (OBI), a leading provider of complex adaptive systems for solving challenging problems of the supply chain. He has more than 20 years of experience working as a consultants for multinational companies in the arena of supply chain planning, demand forecasting, inventory and customer service optimization.

Over the years, Mr. Casado has helped companies to traverse the path that emerge when inventory and service are not related and ends when inventory is the result of the execution of a well defined strategy of customer service, inventory investment and obsolescence allowance.