# Inventory Insights – Impact Case Study

ACTIONABLE INSIGHTS & IMPACT CONSULTING

## Spare part distributor in the automotive sector

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| Inventory Impact * | 9.7m EUR | reduction of existing inventory |
| | 2.3m EUR | avoided inventory built-up |
| Revenue Impact * | 2.8m EUR | additional revenue from avoided stock-outs |
| Profitability Impact * | 1.2m EUR | profit from additional revenue |
| | 0.3m EUR | profit from decreased interest |
| Project costs and time ** | 100k EUR | incl. intern. employee FTEs |
| | 25.5 FTE days | including:<br>▪ data preparation,<br>▪ insight reviews,<br>▪ process interviews,<br>▪ solution workshops |
| Duration | 6 weeks | |

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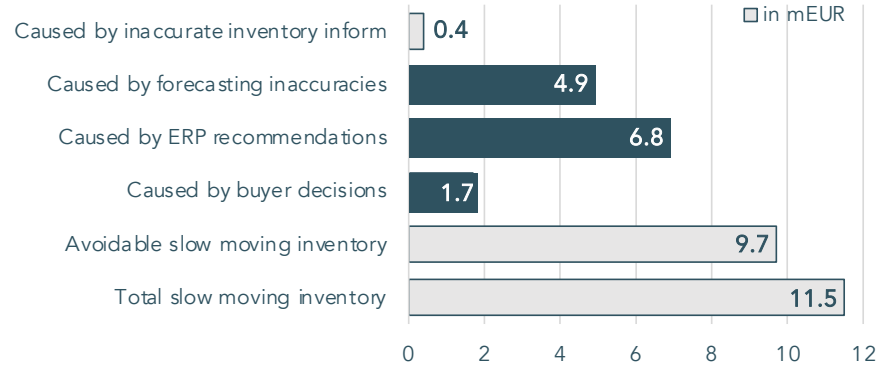
| Company | Anonymous due to investor request | |
| Sponsor | Investment Manager of PE investor | |
| Ownership | Private Equity Investor | |
| Annual Revenue | 203m EUR | + 20 % vs. PY |
| Inventory level | 44m EUR | + 21.5 % vs. PY |
| # WH locations | 9 warehouse locations | |
| Client Situation | ▪ acquired by PE 2 years prior to engagement<br>▪ new management installed with acquisition<br>▪ investor concerned about increased capital requirements due to inventory build-up<br>▪ management claimed inventory levels to be industry standard | |

* forecast confirmed by client
** solution implementation not included in project costs

### Inventory Root-Causes Indentified




* the sum of the different causes exceeds total avoidable slow moving inventory as usually multiple causes affect the same SKU's. The values shown provide an indication of the comparable impact of each root-cause.

### Key Root-Causes

1. Supplier lead times were significantly exaggerated in the system – on average by 4.3 months. Lead times had been changed during the massive supply chain disruptions caused by COVID19 but not been monitored and adjusted since.
2. The rolling demand forecast, while accurate on an aggregated level and sufficient for sales projections, had not been conducted on an item level. Demand based item classification had not been updated in the last two to three years and diverged significantly from the current and last year demand.
3. In order to save on shipping costs per part, buyers had filled up container on top of the wrongly calculated demand with additional "A" classified parts.

### Solutions developed by company

1. Reviewed calculations used to determine purchase parameter and updated all purchase parameter in the system.
2. Switched to historic data based forecasting with monthtly adjustment reviews.
3. Initiated project to create new decision system to weigh inventory costs vs. freight cost savings.
4. Introduced approval process for significant deviations from purchase recommendat.

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| Step 1 Analysis | **How much did purchases in the last 3, 6, 9 and 12 month contribute to your excessive inventory?**<br><br>1.) Data analysis showed that almost 11.5m or 26.5% of inventory where slowing moving, meaning inventory on hand was covering > 1 year of forecasted sales.<br><br>▪ 56% of the slow moving inventory had been bought in the last 6 months,<br>▪ 80.5% in the last 12 months.<br><br>This proved that the core of slow moving inventory did not result from older parts the company needed to keep at hand to provide spare parts for older models as claimed by management.<br><br>2.) Additional analyses:<br><br>a.) Slow moving inventory proved to be especially high for "A" classified parts – parts with a supposedly high demand and fast turnover.<br><br>b.) Significant variations were shown between warehouse locations, each of which had their own buyer, proving the claim of industry standard wrong as 2 locations showed significantly lower slow moving inventory levels across all SKUs. |
| Step 2 Analysis | **How much did buyer decisions to deviate from system contribute to your excessive inventory?**<br><br>1.) Data analysis for the purchases for the Top 100 slow moving items per location over the last 6 months showed frequent and significant upward deviations from the purchase recommendations.<br><br>Extrapolations evaluated the impact to be 1.7m EUR.<br><br>Interviews with the buyers disclosed a focus on fully utilizing container space to a.) reduce freight costs and b.) prevent stock-outs due to insecurities in availability of shipping capacity.<br><br>Underperforming buyers did not take into account the changes made to purchase parameters, which also reflected the increased insecurity. |
| Step 3 Analysis | **How much did ERP system purchase recommendations contribute to your excessive inventory?**<br><br>1.) Purchase parameter in the system were compared to actual data (lead time, MOQ). It showed that especially supplier lead times were significantly exaggerated in the system – on average by 4.3 months. MOQ data was exaggerated as well but did not have as significant an impact.<br><br>Data analysis for the purchase recommendations over the last 6 months at purchase date for the Top 100 slow moving items per location vs. accurate recommendations on adjusted purchase parameters showed significant excess.<br><br>Extrapolations evaluated the impact to be 6.8m EUR.<br><br>Interviews with the buying team disclosed that the lead times and MOQs had been changed during the massive supply chain disruptions caused by COVID19, but had not been monitored or adjusted since. |
| Step 4 Analysis | **How much did forecasting inaccuracies contribute to your excessive inventory?**<br><br>1.) No forecast could be provided as forecasting was only conducted on aggregated level.<br><br>2.) The forecasting data in the system had only been multiplied with category developments from the aggregated forecast. A full comparison on SKU level between the forecasting data in the system vs. last 12 month of sales showed significant discrepancies.<br><br>The impact on slow moving inventory was 4.9m EUR.<br><br>3.) A detailed review of order cancellations and credit notes showed 4.4m in lost revenue due to stock outs. 2.9m in orders cancelled due to late arrival of parts and 2m in credit notes due to wrong parts delivered. Of those wrong parts delivered 75% were due to the company trying to send alternative parts for stock out parts according to interviews conducted. Modeling against a historic consumption based forecast with adjusted reorder points would have prevented 54% of the 4.4m in lost revenue. |

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| Step 5 Analysis | **How much did inaccurate inventory information contribute to your inventory build-up**<br><br>1.) Data analysis of inventory adjustments showed a high correlation the slow moving inventory.<br><br>The impact on the slow moving inventory was 0.4m EUR.<br><br>Interviews with warehouse managers disclosed significant issues due to the large volume of returns deriving from rejected alternative parts due to the stock-outs. |
| Solution Development Support | 1.) Workshops were conducted to map solutions for the different root-causes and the following decisions made:<br><br>a.) The root-cause of inaccurate inventory information might be further reduced by preventing stock-outs and the sending of alternative parts. The identified process improvement solutions did not show a significant enough cost-benefit ratio.<br><br>b.) Additional data analysis was required to develop a sales forecast improvement solution. The significance of the impact warranted the effort.<br><br>c.) Based on the data analysis regarding ERP parameter an update was easily conducted and an annual review process implemented.<br><br>d.) Improving the manual decision making by buyers was considered to show enough cost-benefit, but external support was needed to create the solutions.<br><br>2.) Detailed interviews with the sales force showed that the sales force had explanations for 83% of demand deviations from the projections based on past demand and general sales trend.<br><br>A detailed mapping of those explanations identified a series of trigger events and indicators the sales force could monitor and regularly adjust a future forecast based on historical demand and general sales trend. |