

 Client:
**Global robotics and
automation company**

 Sector:
Industrials

 Solution:
Procurement Analytics

Key highlights

- ▶ The client wanted to generate end-to-end supply chain visibility in order to improve operational business performance
- ▶ The Smart Cube deployed its Procurement Analytics solution, digitising supply chain data and leveraging advanced analytics
- ▶ Recommendations drove measurable monetary benefits, including opportunities to improve the client's EBITDA margin by up to 5%, translating into \$50 million in additional profits

CASE STUDY

Helping a global robotics and automation client supercharge its supply chain with procurement analytics

Business challenge

In this fast-evolving world of globally integrated, dynamic supply networks, businesses need to adapt to create agility, flexibility and real time visibility along their supply chains.

A large global robotics and automation company, with manufacturing and non-manufacturing sites across 90 countries, came to The Smart Cube with a challenge: "How can I improve operational business performance using my supply chain data?"

The Smart Cube solution

The Smart Cube deployed its Procurement Analytics solution to generate end-to-end supply chain visibility, insights into operational performance, and opportunities to drive improvements across the client's global supply chain.

The solution involves digitising supply chain data and leveraging advanced analytics, through a multi-stage approach:

Defining the specific business problems

In order to devise an appropriate strategy, the client's broad operational performance challenge had to first be broken down into specific business issues, and then prioritised. The Smart Cube provided key insights by conducting stakeholder interviews, assessing data availability and quality, and determining business impact/ ROI for various use cases.

This process identified two initial opportunities to deliver tangible ROI:

- ▶ Due to inorganic growth, the client had no consistent visibility on performance, utilisation and profitability across multiple plants making it difficult to make fact-based decisions that would optimise production mix among plants and third-party manufacturers.
- ▶ Product level cost structure, including employee costs, varied significantly.



Collecting and standardising data

This stage of the process tends to be the most effort-intensive. The Smart Cube's analytics experts put in place the data management architecture through three steps:

- 1. Data discovery** – With the client team we identified relevant sources of data from multiple functions within the supply chain – Finance, Purchasing, Production, Sales, Customer Service and Workforce – that enabled a baseline comparison across operations.
- 2. Data preparation** – Client data came in different structures and varying aggregation levels. HR and location data came as flat files that were continuously updated in the client's systems; this provided the most granular information, available for each product category at each location. In contrast, financial information (such as P&L and balance sheet) was available only at country level and by quarter, thus having the lowest granularity. Discrepancies between data sources – structure, granularity and reporting period – required definition of the data extraction rules so that only relevant information was kept for analysis, for which a Python-based automated data preparation process was deployed.
- 3. Data integration** – To link information from different sources, and apply analytics, we built a dynamic visualisation framework, using the most granular level available for each data source.



Visualisation of current performance

We identified the KPIs of most importance to decision-making supply chain executives and developed online dashboards to report on two factors: spend and sales flow mapping throughout the value chain, and operational and financial performance.

This exercise gave the client visibility of multiple supply chain metrics:

- ▶ Product level cost structure across plants
- ▶ Employee cost and productivity across regions
- ▶ Short-term resource availability and liquidity analysis across plants (e.g. working capital, accounts receivable)

The dashboard's dynamic filtering enabled analysis at sub-levels including region, product group and business unit. By slicing and dicing the data, we performed root-cause analysis to identify the drivers that were keeping costs up and negatively impacting margins.



Turning the data into insights

To identify opportunities for cost savings and performance improvement across the client's supply chain required The Smart Cube to apply advanced data analytics, including:

- ▶ **Prediction** – We integrated external data to assess the impact of labour cost increases across manufacturing facilities in multiple countries, over a five-year period. Forecast labour cost increases were benchmarked against expected productivity gains. The predictions identified countries where the productivity gain was off-set by the labour cost increase by such a differential that it made them unprofitable. This led the client to restructure operations in those countries.
- ▶ **Simulation** – We created a simulation tool to assess the impact of moving production from one plant to another, to address the challenge of variable capacity utilisation across several manufacturing sites. The insights generated led to a recommendation for the client to centralise its production rather than having several facilities for the same product category.
- ▶ **Optimisation** – To help the client to maximise its EBITDA margin, we devised an algorithm, which for any given product category, distributed the production volume across its manufacturing network.



Value delivered

Tangible bottom line business benefits – Recommendations from The Smart Cube drove measurable monetary benefits:

- ▶ Opportunities to improve the client's EBITDA margin by up to 5%, translating into >\$50 million in additional profits
- ▶ Potential to increase capacity utilisation from 40% to over 80% across multiple product categories
- ▶ Production volume consolidation in a single location, the cost savings generated a two-fold increase in profitability for several product categories

Holistic visibility – Getting complete visibility of supply chain data, and applying analytics to make fact-based predictive decisions, gave the client, for the first time, intelligence across the whole value chain, including:

- ▶ P&L between divisions
- ▶ Performance at multiple reporting levels
- ▶ Opportunities to increase cashflow, margins and profitability
- ▶ Areas to reduce costs and generate savings

Accelerated decision-making – The insights arising from embedding a data-driven strategy enabled supply chain executives to move from tactical and reactive activities, to strategic and proactive decision-making, around:

- ▶ Manufacturing location optimisation
- ▶ Capacity utilisation maximisation
- ▶ Production volume consolidation

Learn more about how our [Procurement Analytics solution](#) can help you apply analytics at scale to uncover new opportunities for cost savings and value delivery, proactively mitigate supply risks, and drive continuous innovation.

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