

SELF FINANCING THE PLM THROUGH ASSORTMENT CONTROL

A BI POWERED SOLUTION FOR INTELLIGENT ASSORTMENT
CONTROL AND PHASE-OUT

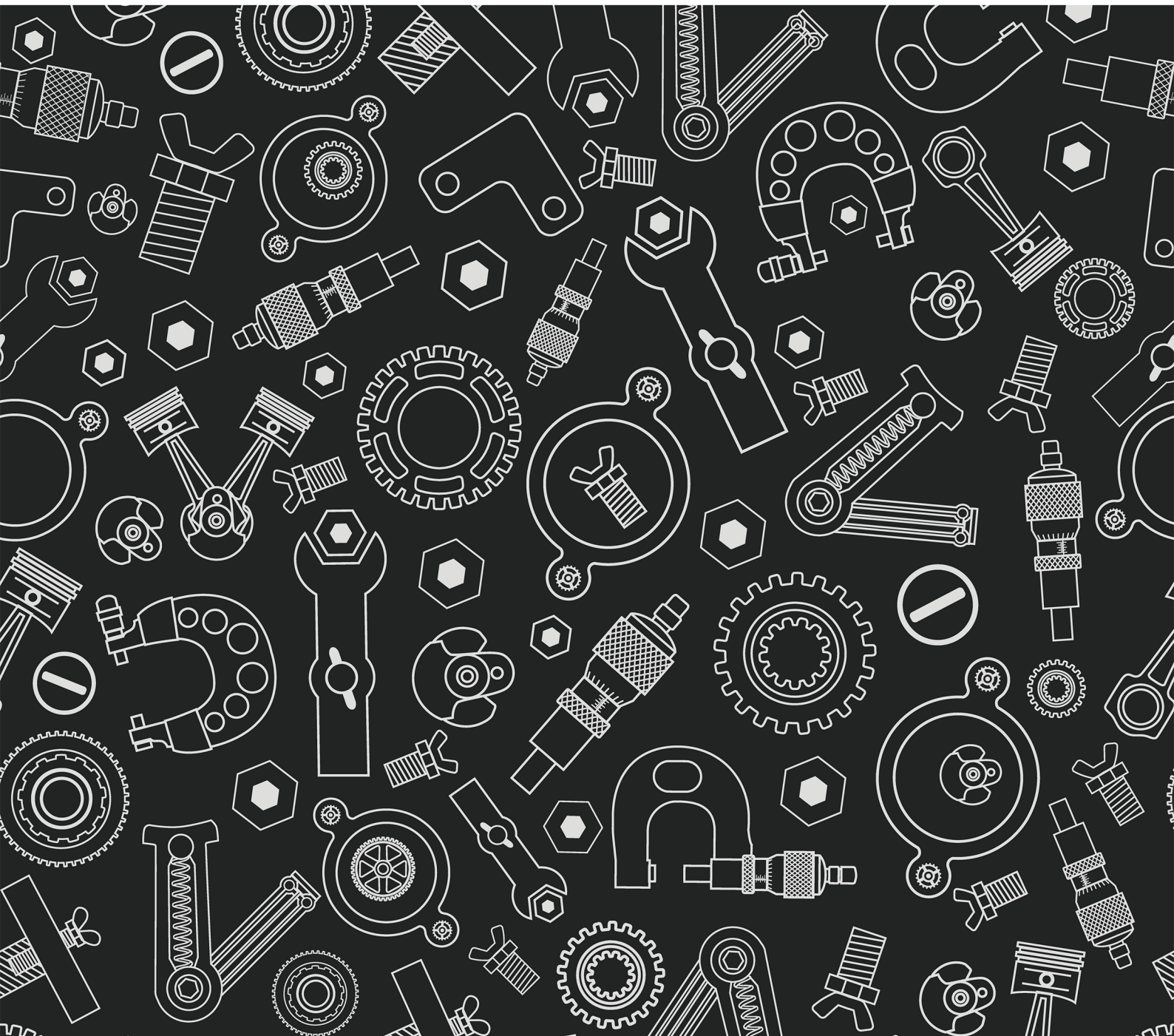
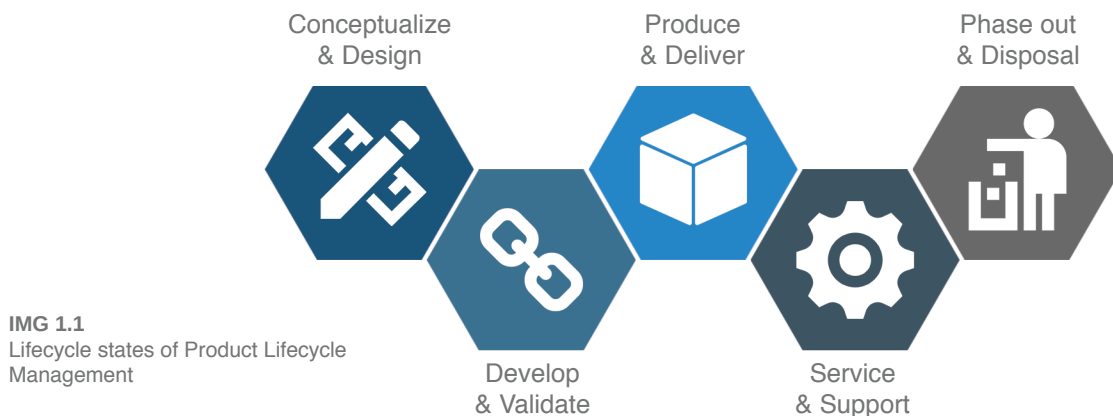


TABLE OF CONTENTS

EXECUTIVE SUMMARY	03
INDUSTRY OUTLOOK	04
BUSINESS CASE	05
SOLUTION	06
RESULT AND BENEFITS	07
CONCLUSION	08
APPENDIX : TECHNICAL DETAILS	09
ABOUT THE AUTHOR	12

WHAT IS PRODUCT LIFECYCLE MANAGEMENT?

Product Lifecycle Management (PLM) is an information management system that can integrate data, processes, business systems and people. This allows you to manage this information throughout the lifecycle of a product efficiently and seamlessly.



SCOPE OF THE DOCUMENT

Traditionally, PLM systems have enabled faster time-to-market by reducing development and production time, and optimizing costs throughout the product lifecycle by making engineering information available across various stages. As the various functions of an organization get digitized, there are many more sources and consumers of data, and PLM systems are evolving to support these multi-dimensional needs.

This is changing the way organizations perceive Product Lifecycle Management.



This document elaborates how Wipro leveraged the above trends by supporting a leading heavy industry company in their PLM journey to unleash the power of data and business intelligence in assortment control, which is a critical aspect in a manufacturing organization.

BUSINESS INTELLIGENCE IN ASSORTMENT CONTROL

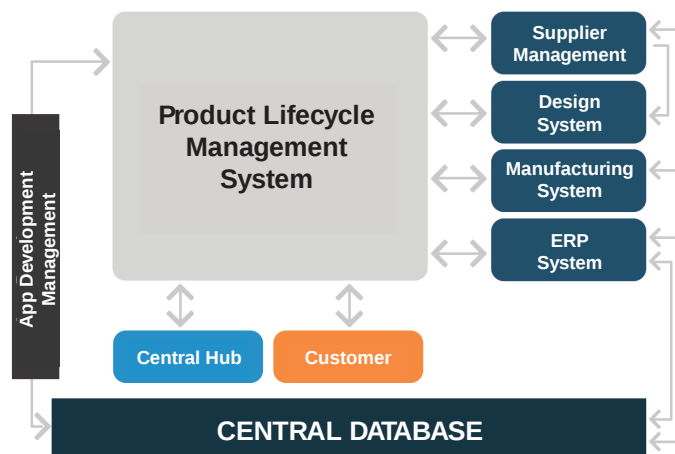
What is assortment?

The set of products, parts, spares and associated documents (CAD drawings, specifications, customizations, material details, customer data, etc.) which are active in production/sales is called an assortment. A company's active assortment can grow to over a million parts and components over years of operation. Maintaining an active assortment has a cost impact, which increases significantly over time.

The next few pages talk about the changing landscape of Product Lifecycle Management and elaborate how Wipro helped the customer's organization in collecting and sanitizing data from diverse sources by leveraging its Business Intelligence system "Magic Box" thereby actively monitoring and controlling the growing assortment

MODERN DAY PLM SYSTEMS ARE BECOMING INCREASINGLY CONNECTED

Engineering, manufacturing and enterprise software (ERP, MES, etc.) systems are being connected to share information between design, manufacturing, inventory, marketing, and sales teams. Beyond the organization, suppliers are becoming design partners requiring access to product data. Customer feedback, which is of very high value, needs to be tied back to engineering as well. Hence, there is a need to store and share data in a structured and controlled manner to make all these connections possible.



IMG 2.1 A Digital PLM System

DATA FROM PLM SYSTEM IS PROVIDING ACTIONABLE INSIGHTS

PLMs were traditionally built as drawing/CAD centric document repositories. As the enterprises are getting digitized, this document oriented-approach is turning into part centric model; this digital definition of the data is enriched in terms of form, fit and function. Data about design, manufacturing, inventory, markets and product usage is helping organizations draw useful insights, which is helping deliver products faster and also enabling them to understand customer requirements better. Business Intelligence systems that consume PLM data are enabling data-driven decision making across various functions.

DEPLOYMENT OF MASTER DATA MANAGEMENT SYSTEMS ALONG WITH PLM

A PLM system collates large volumes of data from diverse sources. This data is usually from global locations, various production units and other business functions. Managing this data is a major challenge because of data consistency, redocumentation and formatting challenges as global operations need to conform to different measurement systems, units and data storage formats. This creates a significant data inconsistency, unstructured collaboration, redundancy, and increased chances of errors. To minimise this, organizations are increasingly moving towards master data management systems that act as a central repository for system data thus seamlessly integrating various sources of data under one robust system without any redocumentation.

CUSTOMER FEEDBACK TO IMPROVE PRODUCT ENGINEERING

Product usage data is allowing the engineering teams to gather real-time insights into how the customer is reacting to a solution or service. Digital PLM solutions are deploying an integrated communication portal to channel this feedback to improve quality and timelines. This downstream reach of PLM into customer insights is leading to better engineered products and faster time-to-market.

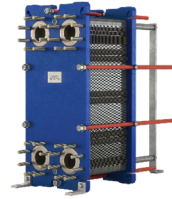
134 YEAR OLD COMPANY + OPERATIONS IN 35 COUNTRIES = LARGE ASSORTMENT

Alfa Laval is a Swedish company that deals in the production of specialized products and solutions for heavy industry. Headquartered in Lund, Sweden, Alfa Laval focuses on large scale operations such as Marine, Energy, Infrastructure, and Food industries. Alfa Laval has over 300 products categorized under three major product lines:

IMG 3.1
Alfa Laval Product Lines



Separation



Heat Exchanger

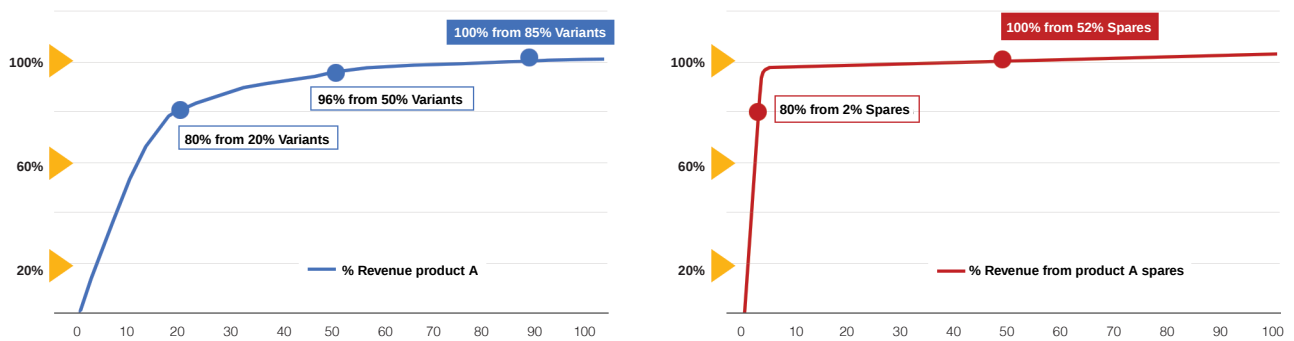


Fluid Handling

Most of these products have thousands of variants in the market. Moreover, the company adds 30 to 40 products every year, each with a large number of variants, in the form of new products, acquired products or updated versions of currently deployed products. A large percentage of the products are also customized with add-ons and extensions which adds to the product list due to the Configured To Order (CTO) model of their business. While this is typical of a company this size, Alfa Laval was keen to remedy this situation.

IMMOBILE INVENTORY CONTINUES TO BE MAINTAINED IN ASSORTMENT

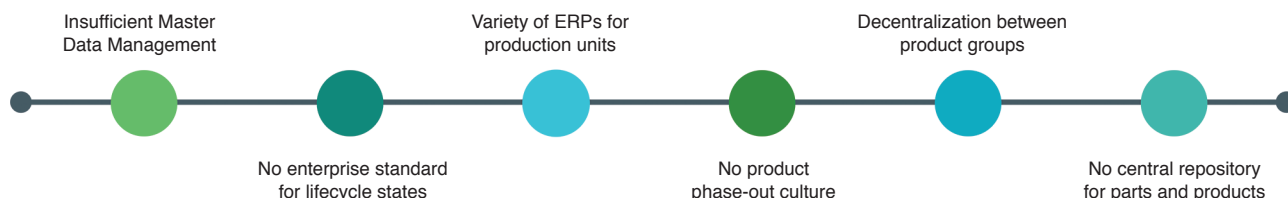
Alfa Laval has thousands of products installed at numerous global locations. As a part of service contracts, the company is expected to maintain an inventory of spares to support these deployed products for up to 30 - 40 years with some of these products having hundreds of spare parts. The number of products/spares maintained in an assortment usually goes into millions, and grows by up-to 10% each year. Moreover, the products are sold across multiple geographies and are customized according to the regulations of those geographies, which further adds to the assortment. As the assortment grows, the cost of keeping a product active adds up significantly.



IMG 3.2 Revenue distribution for Product 'A' and its Spares

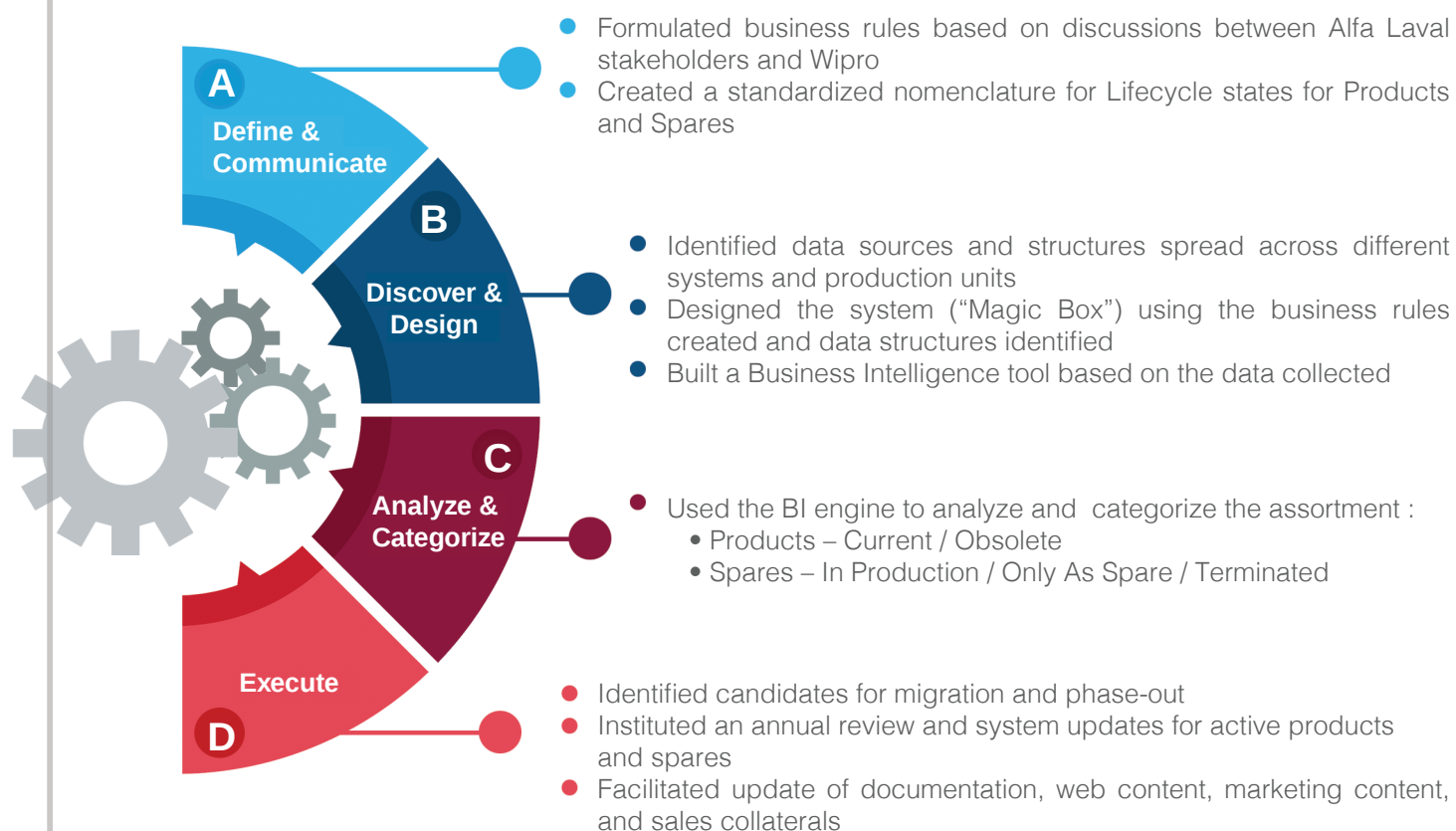
The analysis of the sales data for Product A revealed that 15% of the product variants and 48% of the spares maintained in the assortment had not been sold the last 15 years, but were still being maintained in the IT Systems. Alfa Laval, in partnership with Wipro, built a business intelligence solution to solve this using the data already present in the various systems across their different business units and manufacturing plants.

IDENTIFICATION OF BOTTLENECKS



A BUSINESS INTELLIGENCE ENGINE FOR PHASE-OUT AND CLEANING OF ASSORTMENT

Alfa Laval and Wipro laid out a four step methodology for the product phase-out process:

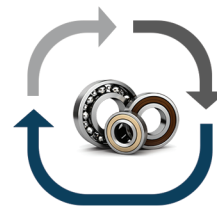


OUTPUT : STANDARDISED LIFECYCLE STATES

The Business Intelligence tool, based on factors like volume of sales, date of release, last sale, and various other business parameters, categorized the products and parts with lifecycle states as depicted in adjacent figure.



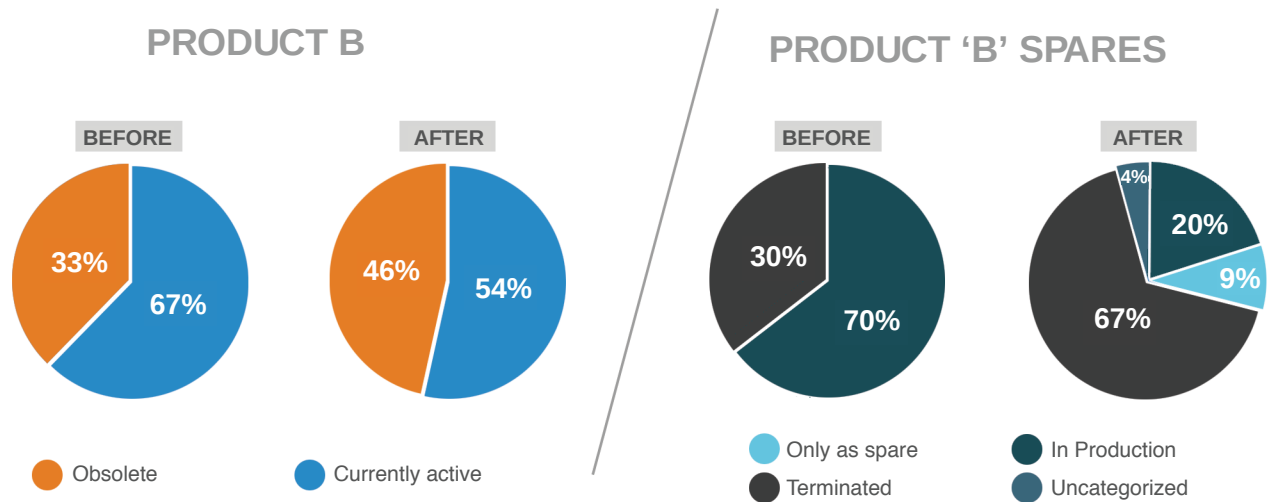
IMG 4.1
Product Lifecycle - 10 – 15 Years



IMG 4.2
Part Lifecycle - 40 – 50 Years

PHASE-OUT RESULTS FOR PRODUCT 'B' AND ITS SPARES

The results from executing this exercise for another Product Line B and its Spares have shown significant improvement in terms of number of Products/Spares phased-out.



IMG 5.1 Impact of Assortment review for Product Line B and its spares

During this exercise, more than two-thirds of the parts which were to be migrated to a new system were removed from the assortment. Active products dropped from 67 percent from before the launch of the program to 54 percent after. Parts to be migrated decreased from 70 percent to a mere 29 percent through the analysis performed during the program. Over 100,000 parts were phased out as a part of this process.

BUSINESS BENEFITS

- Established a nomenclature for lifecycle states for the products and spares.
- Created potential cost-savings through phasing out of non-moving products and spares.
- Saved valuable man-hours through optimized process for storing, cleaning, & updating assortment data.
- Enabled better business understanding of assortment with respect to sales – yearly sales, sales by geography, customers.
- Deployed a business intelligence solution that can be a goldmine for Product Management and can be used by other business functions.
- Defined a standardised process for annual assortment review and phase-out.
- Provided an objective view to the management on introducing newer variants and periodic phasing out of the obsolete ones.
- Reduced the number of parts to be cleaned, enhanced and migrated to the new PLM, saving significant man-hours.

CONCLUSION

This exercise gave Alfa Laval a deeper insight into their products, data structures & data storage mechanisms which helped them optimise their assortment and streamline their efforts in data migration & management. This program is expected to significantly reduce the effort that goes into cleaning & updating assortment data; and the saved effort can be utilized for higher value work. Alfa Laval intends to make this an annual exercise for review and clean-up of their assortment.

There are also certain risks associated with this exercise. There can be resistance from sales teams on flushing out products as it might impact their overall sales targets. There could also be concerns around Customer Satisfaction as phase-out would lead to stoppage of support for certain products and spares.

On the positive side, one of the biggest benefits is using the power of analytics to get deeper understanding of what features of the products provide most value to the customer. This will help in creating better products. This would also enable the company to invest more on developing newer products and build a culture of innovation. Overall, there are significant tangible benefits that Alfa Laval envisions from the deployment of this business intelligence solution. This could be a big push for using business intelligence systems in making engineering decisions.

REIMAGINING THE APPLICATION OF BUSINESS INTELLIGENCE - WIPRO'S EXPERIENCE

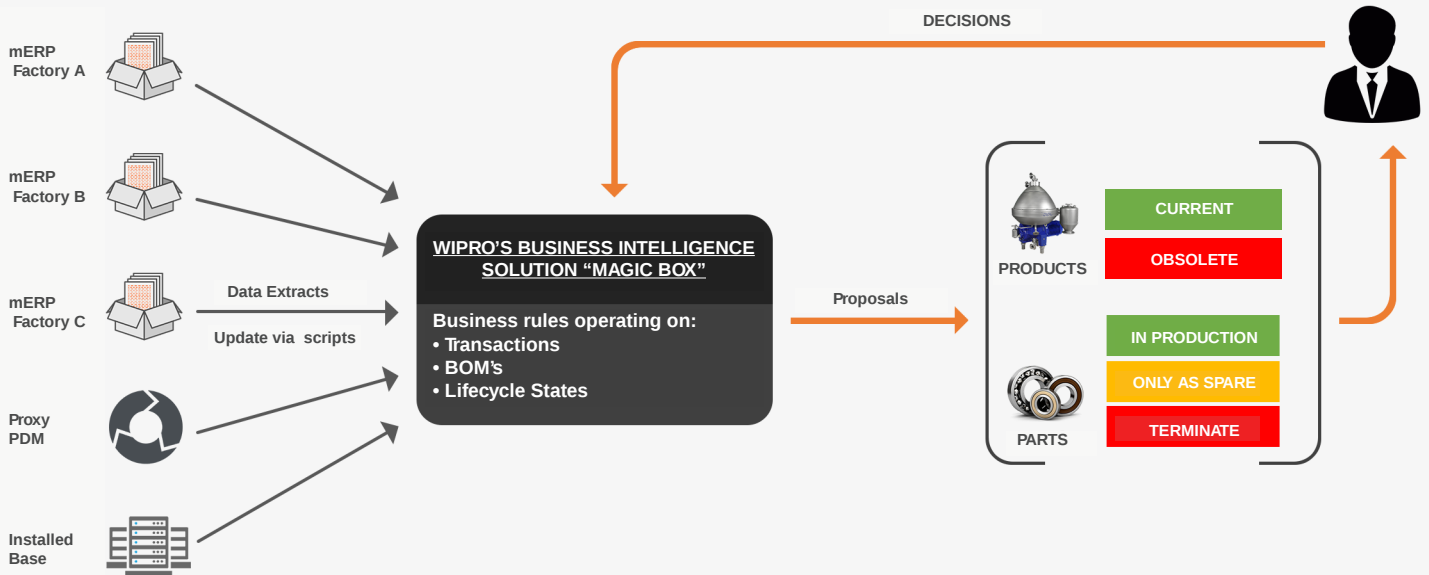
During this engagement with Alfa Laval, Wipro got exposed to a non-traditional application of business intelligence in a manufacturing organization for Assortment Control. Wipro leveraged its expertise in business intelligence and data analytics to analyse the large amount of data aggregated from various sources within the organization to solve the customer's business problem. This has opened many more avenues for Wipro to explore different use cases of business intelligence in manufacturing and Wipro is focussed on using its capabilities and deep domain expertise in helping companies achieve their PLM goals and objectives.

APPENDIX

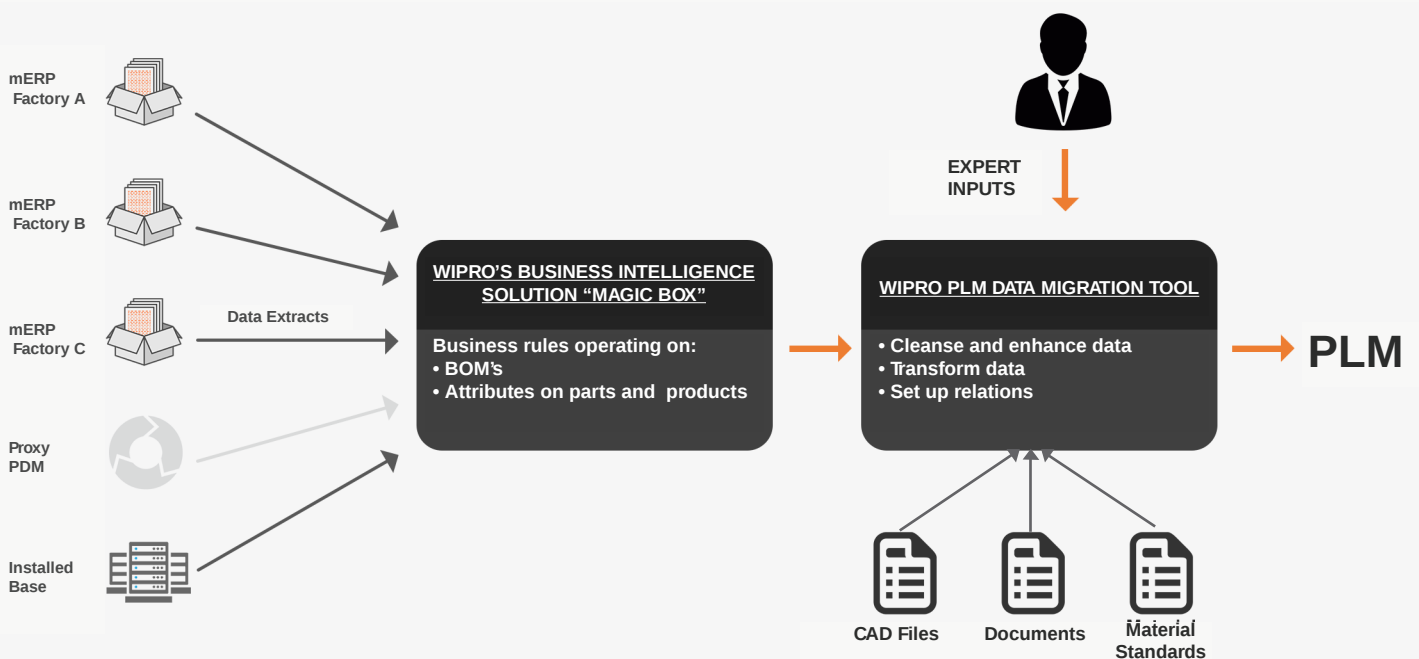
TECHNICAL DETAILS



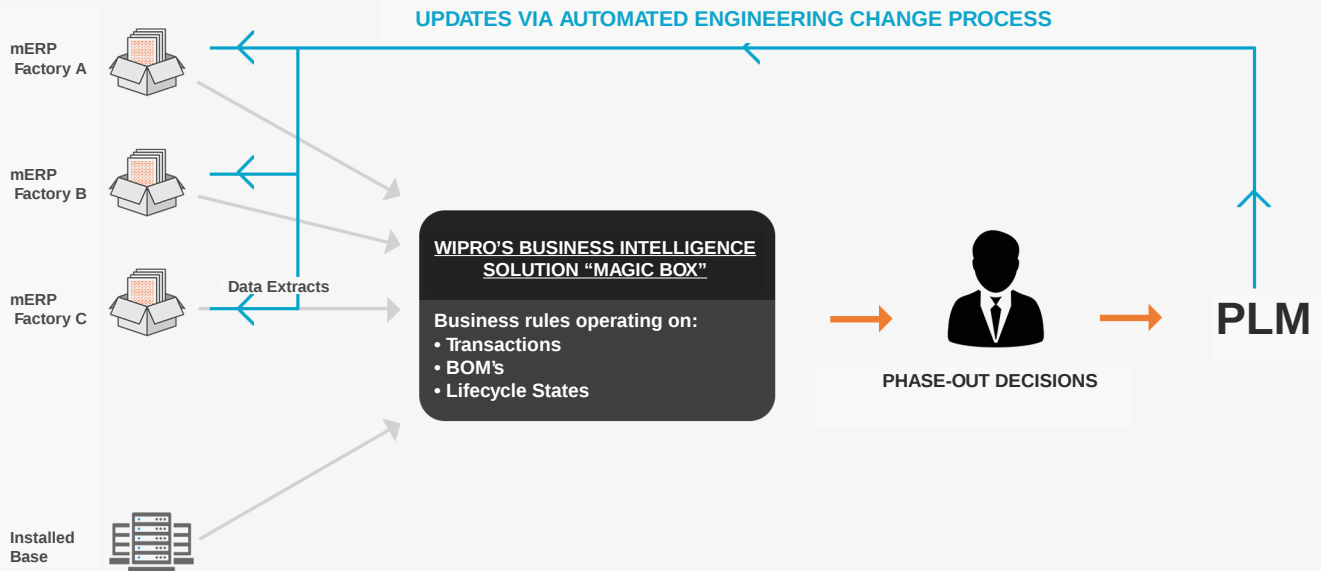
PHASE-OUT SOLUTION (ONE TIME EFFORT) – EXTRACT → PROPOSE → DECIDE → UPDATE



MIGRATION SOLUTION (ONE TIME EFFORT) – EXTRACT → CLEANSE → ENHANCE → LOAD



ANNUAL ASSORTMENT SOLUTION (RECURRING EFFORT) – EXTRACT → PROPOSE → DECIDE → UPDATE



ABOUT THE AUTHOR

ABOUT WIPRO PLM

As a part of Product Engineering Services (PES), Wipro has a dedicated Product Lifecycle Management (PLM) Practice, offering cost effective, high quality PLM services based on leading PLM tools. PLM is one of the key strategic lever of Wipro's business and our expertise is derived from more than three decades of strong expertise in Product engineering and PLM application implementation for our global customers. We transform our customers to higher levels of PLM maturity and help them realize the full ROI of PLM investments by implementing industry best practices and solutions.

Wipro has engaged with over 70 global clients across industry verticals including Automobile, Aerospace, CPG, Industrial Manufacturing, Medical Devices, Hi-Tech, and Semiconductor sector for delivering various PLM services including large End-to-End implementations. These engagements range from short term PLM implementations to multi-year, multi-phase, multi-million dollar implementations. Customers have leveraged Wipro's capabilities across a broad spectrum - from providing PLM advisory services such as PLM Consulting, Strategy & implementation, roadmap development, business case development & product evaluation to implementation, maintenance, testing & support. Wipro has expertise in leading PLM solutions such as Siemens Teamcenter, Dassault 3DEXperience, PTC Windchill, Oracle Agile PLM, etc.

ABOUT WIPRO LIMITED

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 160,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more, please visit www.wipro.com

ABOUT ZINNOV

Zinnov is a research, consulting & advisory company with core expertise in Product Engineering and Digital Transformation. We have been consistently been ranked amongst the top 20 outsourcing advisory firms for 8 years in a row by IAOP.

We help companies:

- In engineering, IT, digital and business operations to achieve higher throughput, innovation, productivity and cost savings
- Design, deploy, and optimize a global engineering partner strategy
- Build a sales and marketing strategy for their products and services in India, emerging and global markets.

With our team of experienced professionals, we serve clients across Software, Automotive, Telecom & Networking, Semiconductor, Consumer Electronics, Storage, Healthcare, Banking, Financial Services & Retail industries in US, Europe, Japan & India.

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