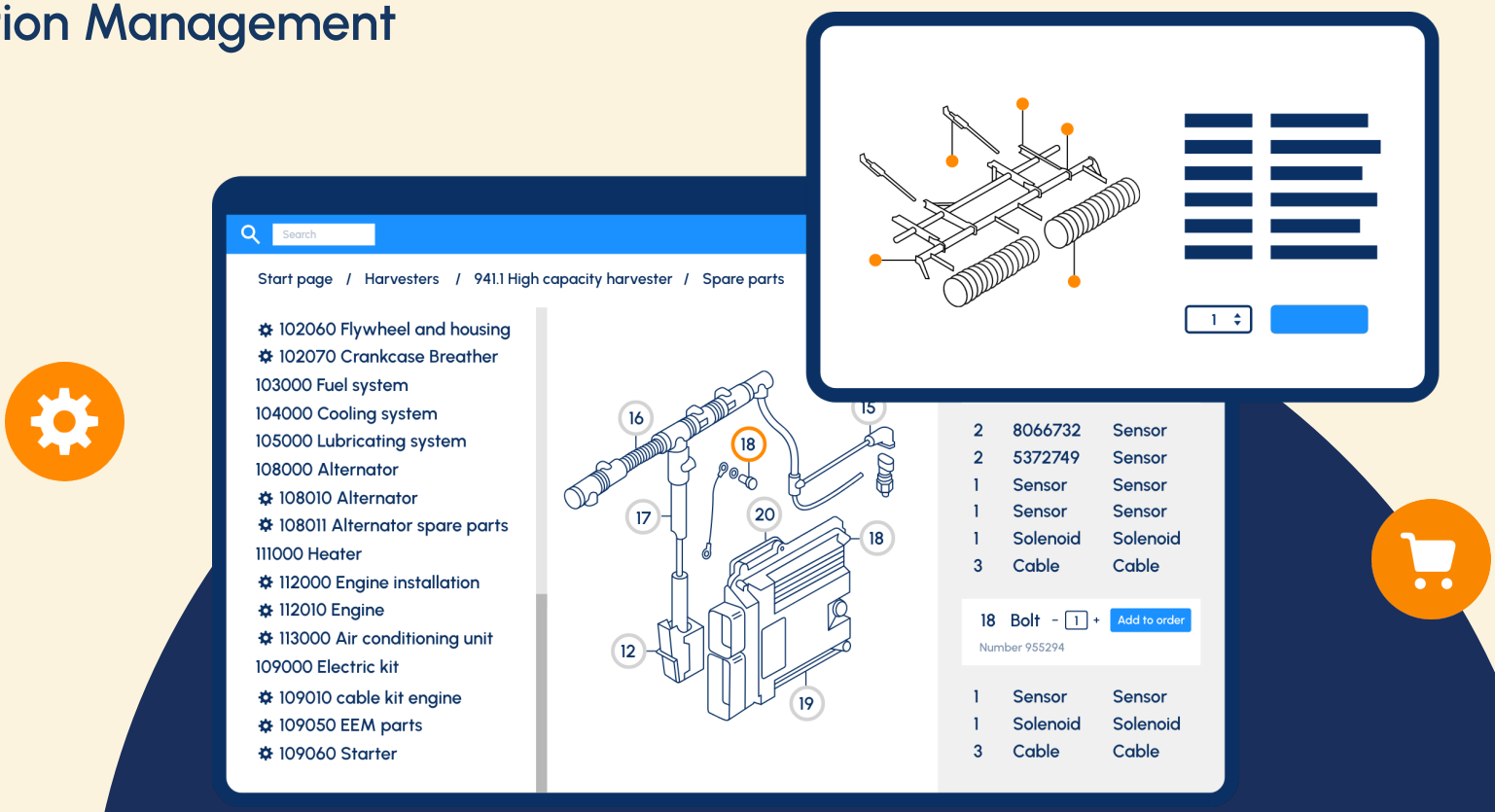
WHITEPAPER

Aftermarket Product Information Management

Optimising Service Delivery through Advanced Product Information Management

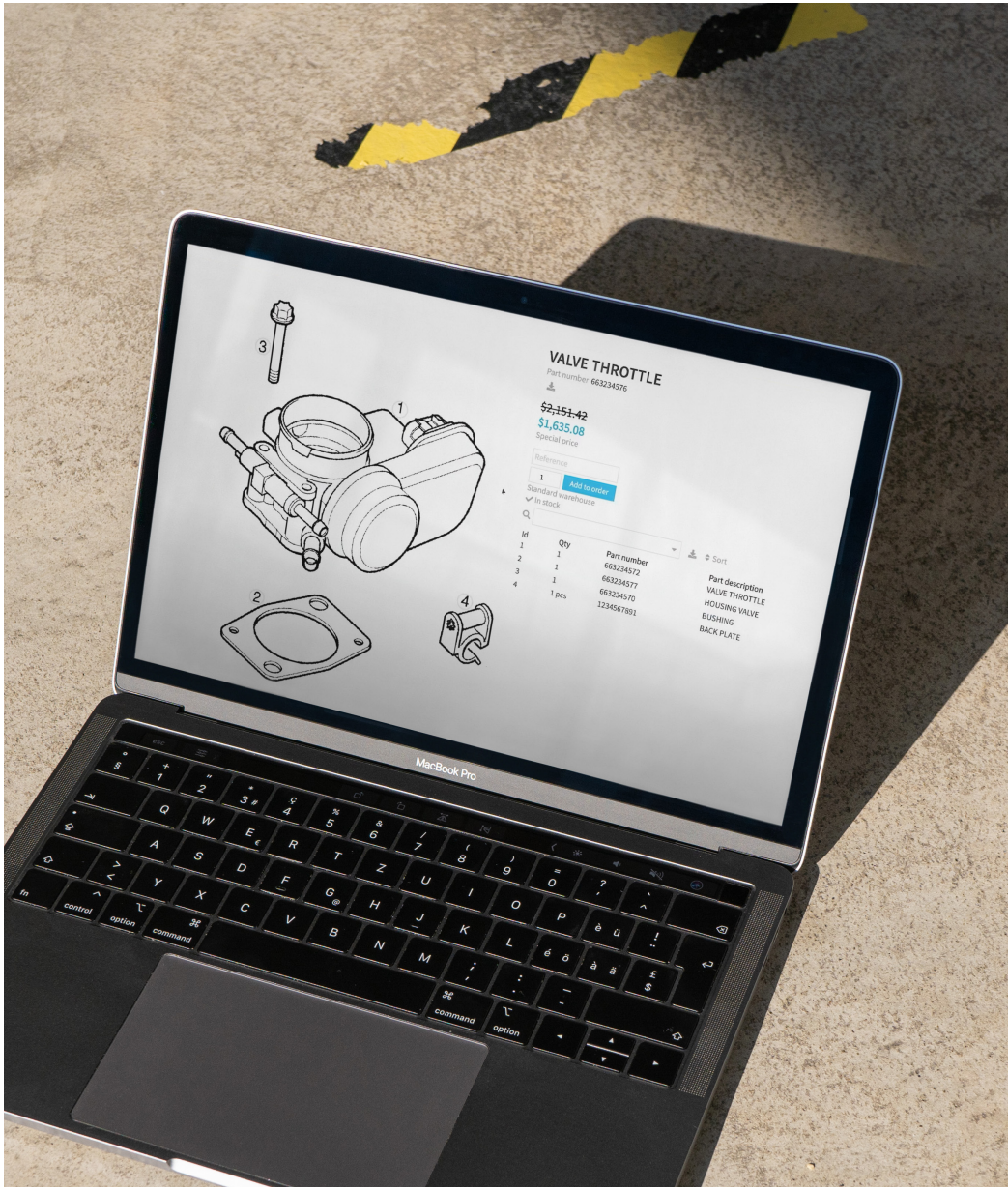


SIGNIFIKANT

Abstract

The aftermarket industry is becoming more complex due to the consolidation of companies and mergers, as well as the expansion of product lines and changing customer demands. This increasing complexity has created a greater need for effective data integration to ensure seamless operations and customer satisfaction. One of the biggest challenges is managing content silos – where product information is fragmented across different departments or systems, making it difficult to maintain accuracy and consistency. This results in inefficiencies, slow time-to-market, and an inconsistent customer experience across multiple sales channels.

This whitepaper explores how Signifikant's PIM, integrated with digital twin technology, helps OEMs and their service providers improve operational efficiency and maintain project timelines even in the most challenging environments.
It demonstrates how Signifikant's PIM centralises and streamlines product data, breaking down content silos to create a unified source of truth. In addition to supporting OEMs, Signifikant also serves service organizations by streamlining processes and consolidating data, enabling more efficient operations and improved service delivery.



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CHAPTER 01

Introduction

In traditional machinery maintenance, unexpected breakdowns can pose serious challenges. When machinery or equipment stops working in remote locations like forests, construction sites, manufacturing lines, etc, it disrupts operations significantly. Service teams then face the difficult task of diagnosing the issue and sourcing the necessary replacement parts.

If the correct parts are unavailable or incorrect parts are supplied, downtime will be prolonged, impacting project timelines and raising costs. Disconnected data systems and incorrect or unavailable information on parts can worsen the situation, as service centres often lack real-time visibility into machinery conditions. Signifikant's Product Information Management (PIM) system addresses these challenges by consolidating and organising product data, including specifications and documentation.

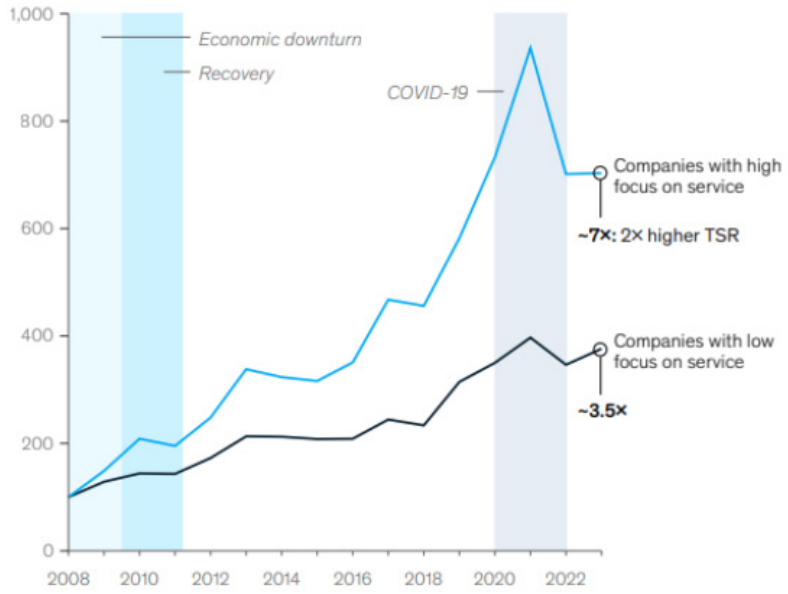
With PIM at its core, Signifikant's digital twin technology enhances aftermarket product management, creating virtual models of spare parts and service information. This dynamic model reflects real-time data on spare parts usage, improving accuracy and speed in maintenance. The result is increased customer satisfaction and more efficient maintenance processes, supported by clear and accessible product information. Additionally, by providing accurate, real-time data to support critical processes and reducing inefficiencies, Signifikant drives revenue growth and lowers costs, enabling businesses to scale effectively while optimizing their aftermarket services.

CHAPTER 02

How the Aftermarket is Evolving?

Total shareholder returns are higher for B2B services companies that focus on the aftermarket.

Cumulative TSR for companies, index (2008 = 100)



McKinsey & Company

Aftermarket Trends

Recent data from McKinsey & Company illustrates that companies focusing on the aftermarket significantly outperform those emphasising service less. The report highlights the following:

- **Performance Disparity:** Companies with a high focus on aftermarket services have achieved a cumulative total shareholder return (TSR) of approximately 700%, which is about two times higher than their counter-parts with lower service focus, which saw returns of around 350%.
- **Economic Resilience:** The data also reveals that companies prioritising aftermarket services during economic downturns and recovery phases tend to demonstrate more resilience and growth. This trend became particularly pronounced during the COVID-19 pandemic when the gap in TSR widened.

The report shows (as highlighted below) cumulative TSR from 2008 to 2022, highlighting the stark contrast between companies with a high focus on aftermarket services and those with a low focus.

eCommerce Integration

According to a McKinsey Company report, many businesses aim to gain a competitive edge through eCommerce platforms. While digital strategies are common in B2C companies, they are less developed in B2B. This gap drives the adoption of multi-channel eCommerce storefronts that enhance the navigation and purchasing of spare parts and services.

The rise in online sales necessitates robust integration between back-end systems such as ERP, CRM, and PLM, enabling manufacturers to provide essential information, including complex structures, selected engineering data, delivery timelines, user-specific pricing, and inventory levels.

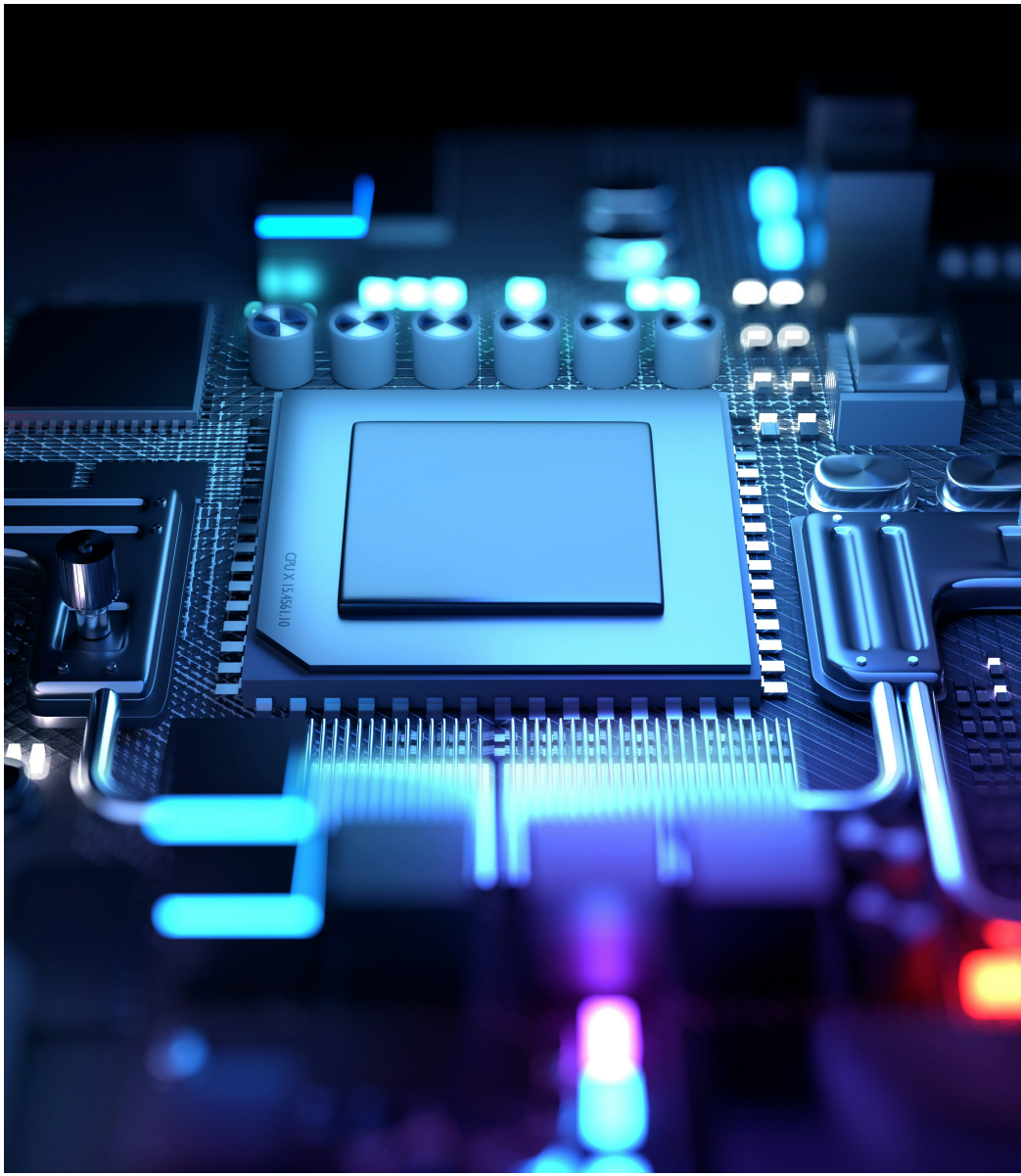
E-catalogue Trends

Research from Gartner shows that, by 2025, 80% of B2B sales interactions between suppliers and buyers will take place through digital channels. They expect seamless, intuitive digital experiences that prioritise user interface design and ease of navigation.

Online catalogues are now integral to mobile-optimised customer portals, allowing users to efficiently purchase spare parts and access service information with just a few clicks. Accurate and reliable data from backend PIM systems is crucial to meeting these demands.

Digital Twin Trends

According to the IoT Analytics Report, the digital twin market is projected to grow at a 30% CAGR from 2023 to 2027. Currently, 29% of global manufacturing companies have implemented digital twin strategies, and job postings related to digital twins have increased by 11% since October 2021. As companies evolve their aftermarket strategies, the integration of digital twins combined with master data with complete product structures of complex machinery is becoming increasingly valuable.



CHAPTER 03

What Challenges Do Companies in the Aftermarket Industry Face with Product Data?

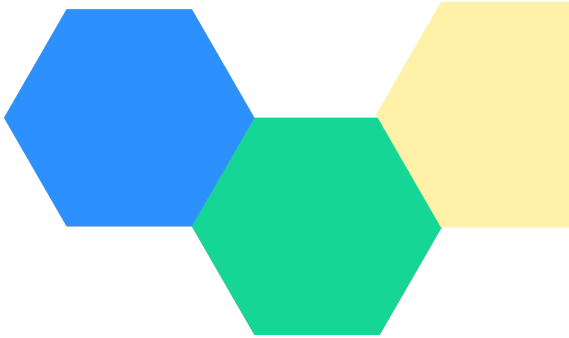
Managing fragmented data across different departments, often called content silos, is a major obstacle in the aftermarket industry when it comes to delivering personalised information to users. Due to fragmented data, companies face:

- **Outdated Information**
  Disconnected systems lead to delays in updating and distributing accurate data.
- **Complex Catalogues**
  Managing vast and diverse inventories becomes difficult without a structured system.
- **Inconsistent Data**
  Multiple tools and technologies contribute to inconsistencies in product information across platforms.
- **Real-time Insights**
  Without digital twin technology, identifying the correct replacement parts for damaged components becomes less accurate, leading to mismatches and increased downtime.
- **Maintenance Challenges**
  Customers may struggle with unclear guidance on fitting replacement parts, increasing installation errors and prolonging repair times, ultimately causing more operational disruptions.
- **Poor Service Experience**
  Without the right technology to provide accurate data, seamless support, and a personalized experience, service organizations struggle to meet customer expectations, leading to dissatisfaction, and missed opportunities for growth.

This fragmentation makes consolidating information into a single workflow challenging, complicating the integration of eCommerce solutions and the introduction of new applications or services. Addressing these issues is crucial for aftermarket companies looking to enhance customer experience and drive sales growth in an increasingly digital landscape.

CHAPTER 04

How Does Signifikant's Aftermarket PIM Solution Address Product Data Challenges?



Aftermarket PIM systems are explicitly designed to manage the unique needs of aftermarket products. Unlike regular PIM solutions that handle a wide range of products, Signifikant's aftermarket PIM focuses on the specific details:

1. **Centralised Data Repository**
Signifikant's aftermarket PIM consolidates complex product structures, including exploded views, service data, and supersessions from various sources, ensuring a single source of truth. This central repository reduces data inconsistencies and enhances data accuracy, allowing businesses to provide reliable information to customers and service teams.

2. **Automated Catalogue Management**
An Aftermarket PIM significantly reduces the time and effort required for catalogue updates by partially or fully automating the creation and maintenance of spare parts catalogues. This system enables complete digital twins, including detailed product structures, technical illustrations, parts lists, service and maintenance kits, supersessions, and other critical information. It ensures that all content remains current and accessible across multiple formats.

3. **Real-time Information Access**
Field teams benefit from immediate access to a comprehensive knowledge base, enabling them to deliver efficient service. Real-time updates ensure service personnel have the latest information at their fingertips, improving service quality and response times.

4. **Multichannel Distribution Capabilities**
An effective Aftermarket PIM ensures seamless information distribution across service organisations, dealers, and partners, enhancing user experience through multiple channels and via multiple formats. With the ongoing digitisation of assets and business operations, this process ensures the distribution network has accurate product information throughout the lifecycle, which is crucial for driving the company's growth in the aftermarket sector.

5. **Personalisation and ECommerce Integration**
The Aftermarket PIM enhances customer satisfaction by providing machine-specific information at the point of sale. Integration with eCommerce platforms allows for the development of comprehensive online shops that streamline order processes and enhance the overall shopping experience.

CHAPTER 05

How Does Aftermarket PIM Differ from Standard PIM Solutions?

Standard Product Information Management (PIM) solutions mainly focus on finished goods, but aftermarket PIM is specifically designed for the unique needs of parts sales and services. These specialised systems simplify the complexities of post-sale information by bringing together data from various sources into one central place.

Here is a closer look at how aftermarket PIM differs from standard PIM solutions.

Feature	Aftermarket PIM (Signifikant)	Standard PIM
Data Structure	Detailed drill-down of complex products for managing spare parts , accessories and supporting hierarchical structures for easy navigation.	Simple product categorization with limited depth, making it difficult to manage spare parts and accessories efficiently.
Data Enrichment	Technical illustrations, maintenance kits, compliance info, manuals, and supersession details for products historic products.	Limited to general product details, with limited technical data. Typically lacks comprehensive documentation like manuals, compliance details, and supersession tracking.
Integration	Integrates various data types from multiple sources, including dimensional drawings, bills of materials, standard times, parts, CAD drawings, technical bulletins, guides, packages, kits, illustrations, service protocols, and tools. Supports seamless data flow across ERP and eCommerce systems with phased implementation flexibility.	Primarily handles basic product information such as descriptions, SKUs, and pricing. Limited support for technical content like CAD drawings, service protocols, and bills of materials. Integration with ERP and eCommerce is often rigid, requiring extensive customization for aftermarket needs.
Catalogue Management	Designed for dynamic spare parts catalogues that adapt to inventory changes and support offline functionality for field service use.	Static catalogues with rigid structures that do not automatically adapt to inventory updates. Typically requires an internet connection for access and updates.
User Experience	Developed for technical users (e.g., B2B managers, engineers) and service organisations, with localized interfaces for multilingual user needs.	Designed for general retail or basic product cataloging, often lacking customization for technical users.
ECommerce Optimisation	Focused on aftermarket-specific eCommerce.	Basic eCommerce features, lacking tools for aftermarket sales.
Complete digital twin	Provides comprehensive digital twins for spare parts, including detailed product structures and real-time usage data.	Lacks digital twin capabilities, offering limited product representations.

Key Characteristics of Aftermarket PIM

- **Granular Data Structuring**
  Drill-down hierarchy and supersessions simplify the classification and management of complex spare parts.
- **Enhanced Data Enrichment**
  Supports the addition of comprehensive technical specifications, compatibility details, and maintenance information essential for aftermarket products.
- **Integration Capabilities**
  Seamlessly integrates with ERP systems, eCommerce platforms, and supply chain management tools to provide a unified data ecosystem.
- **Content Segregation**
  Ensures accurate product data is delivered to the right recipients, reducing errors in the service network.
- **Supporting Dealers with Accurate Data**
  Provides downstream dealers with up-to-date information, boosting service precision and customer satisfaction.

CHAPTER 06

Unifying Information Through the Aftermarket PIM System

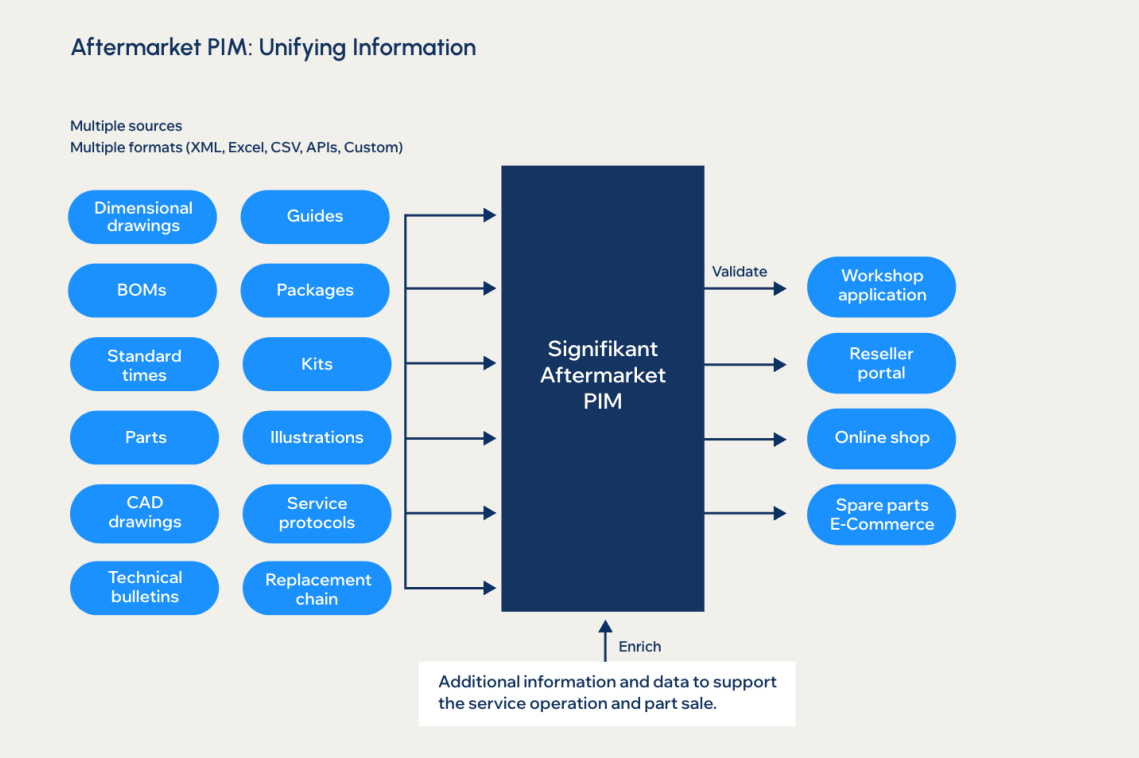
The Signifikant Aftermarket PIM employs a systematic approach to unify information from multiple sources, facilitating better decision-making and enhanced customer service. Here's a breakdown of the key steps involved in this process.

Step 1: Data Integration
The PIM integrates various data types from multiple sources (APIs, XML, Excel, CSV, APIs, and custom formats), including dimensional drawings, bills of materials (BOMs), standard times, parts, CAD drawings, technical bulletins, guides, packages, kits, illustrations, service protocols, and tools.

Step 2: Data Validation
Each data type is validated before being entered into the Signifikant Aftermarket PIM.

Step 3: Data Enrichment
Once validated, the information is enriched to create a complete product description, including relevant details for service and maintenance.

Step 4: Supporting Applications
The unified data supports various applications, including workshop applications, reseller portals, online shops, and spare parts eCommerce platforms.



CHAPTER 07

Seamless Integration in a Heterogeneous Ecosystem

In today's complex digital landscape, businesses rely on multiple systems and applications to manage aftermarket information. The Signifikant platform is designed to seamlessly integrate with diverse IT ecosystems, ensuring smooth data exchange across CAD, PLM, ERP, and other critical business systems.

Source systems

The Signifikant platform is a highly flexible and open solution designed to support a heterogeneous environment of applications, systems, media types, and file formats. It seamlessly integrates with source systems such as CAD, CCMS, PLM, ERP, and business PIMs, as well as homegrown systems and Microsoft Office documents. Data import is facilitated through file exchange, API integration (REST, SOAP), or direct database connections, with support for JSON and XML formats. Signifikant ensures structured data management by defining ownership rules, allowing source systems to create, modify, and delete data while enabling non-owning systems to complement and enhance information.

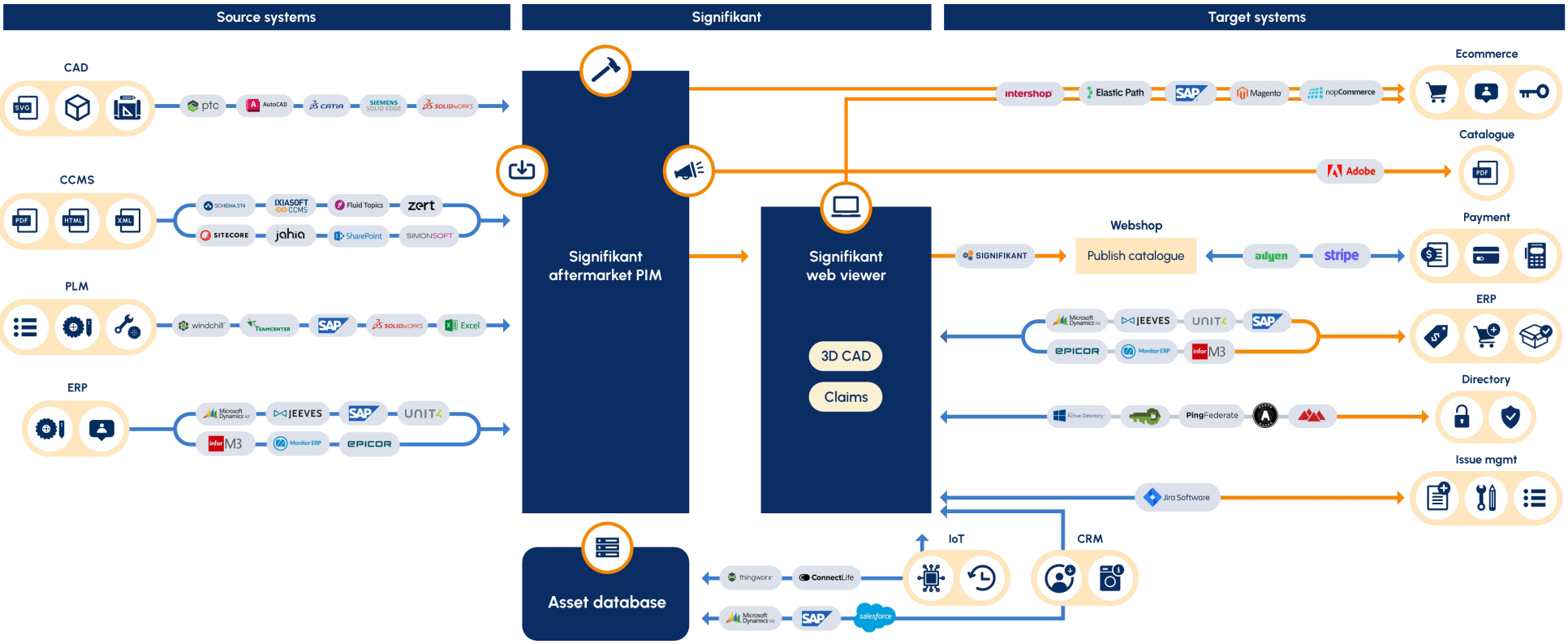
Target Systems

Signifikant also integrates with target systems such as ERP solutions, web shops, and the Signifikant Web Viewer, which serves as a comprehensive portal for navigation, search, and data retrieval. The platform enables seamless data consumption via the Signifikant Content API or file exchange, ensuring efficient access to critical aftermarket information. With robust filtering and search capabilities, businesses can enhance their digital ecosystem while ensuring that end-users receive accurate and up-to-date product and service details.

Integrated Systems

In addition, Signifikant connects with integrated systems such as ERP, warehouse managment, IoT, issue management, and payment platforms. These integrations enhance operational efficiency by providing real-time data on pricing, availability, order status, and service requests. The platform also supports authentication via SAML and OAuth, enabling secure Single Sign-On (SSO) and customer authentication. All Signifikant APIs adhere to modern security standards, using token-based authentication for secure data exchanges, ensuring a scalable, interoperable, and future-ready solution for aftermarket businesses.

Signifikant – Offering Flexible Compatibility for All Your Digital Assets



CHAPTER 08

What are the Key Steps in Signifikant's Approach to Managing Content Silos?

Signifikant offers a solution to help companies break down these content silos and deliver personalised information effectively. The approach consists of three key steps: Consolidate, Tag, and Filter.

1. Consolidate
Many tools for creating information are specialised and customised for specific processes. Instead of replacing these tools, Signifikant helps consolidate all the data into a single, consistent aftermarket database.

For example, if one tool handles product specifications while another manages customer support information, both sets of data are brought together into one database. Regular processes are established to ensure that data from each tool is imported, mapped, and synchronised, keeping everything up to date.

2. Tag
All types of information, from a short text note to a complete product catalogue, need to be tagged for various purposes:

- **Individual Machines**
  By tagging data with configurations and options, customers can easily link information to their assets or specific machines, ensuring that users can quickly find what they need.
- **User Relevance**
  Tags can indicate which users should see certain information based on their roles or expertise. For example, a technician may access repair manuals and service bulletins, while a sales rep might see pricing information.
- **Organisational Access**
  Tags can also control which organisations can view specific information, like restricting access to sensitive data based on region or organisation type.

3. Filter
To guarantee that users access consistent information across all applications, Signifikant centralises the filtering logic in one location. This approach ensures that any updates to the information model or tagging system are automatically reflected in all-consuming applications, contributing to the creation of a comprehensive digital twin. For instance, if a product's specifications are revised, all users in different applications will see the most current information without needing to make individual updates in each tool.

CHAPTER 09

What Functionalities Does Signifikant Aftermarket PIM Offer To Manage Legacy Parts?

Signifikant Aftermarket PIM offers a variety of tools to simplify the management of legacy parts. These tools help to:

- Manage legacy parts and their replacements
- Connect products to their ownership through self-registration or similar methods
- Keep track of recent purchases and modifications
- Manuals, bulletins, and other support materials are accessible
- Organise and track serial numbers, product versions, spare parts, documentation, and accessories for each product
- Strategies designed for cross-selling and upselling in the aftermarket
- Updated log of customers' products and installation bases
- Quickly identify the precise version of a product
- Records of the relationship between ordered parts and the products

CHAPTER 10

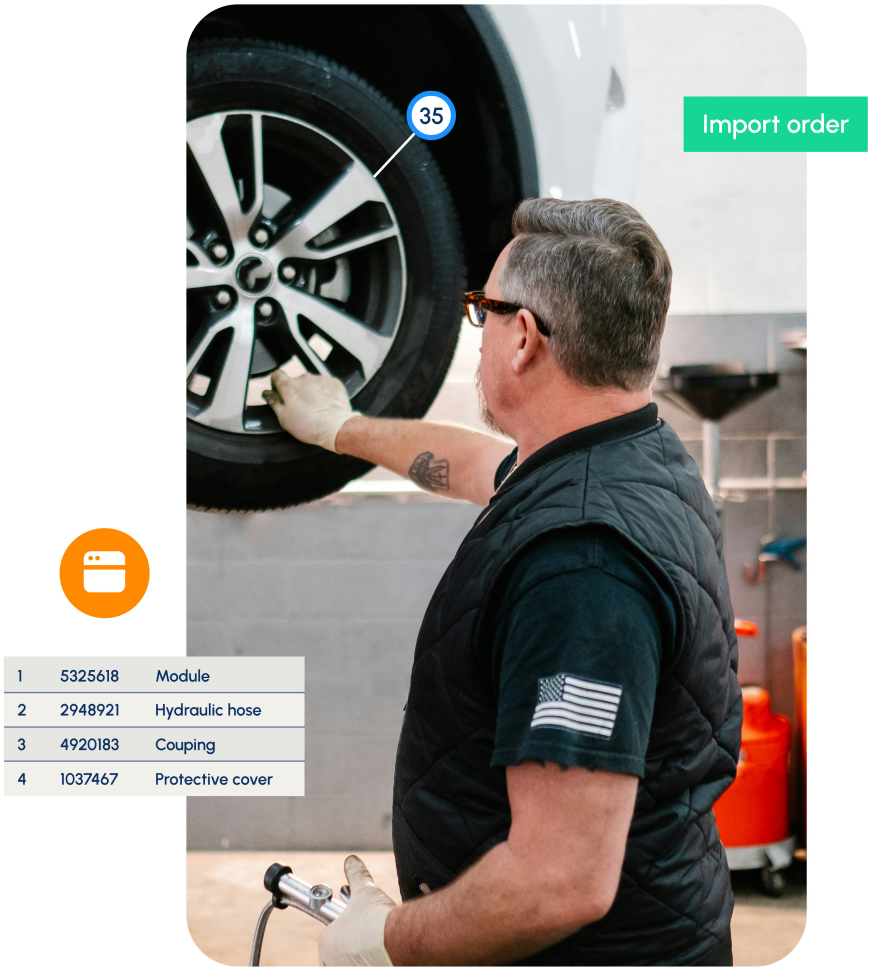
Conclusion

As businesses increasingly navigate the complexities of aftermarket operations, the need for a streamlined approach to managing product information has never been more critical. Data silos often hinder efficiency and accuracy, making it imperative for organisations to adopt a sophisticated aftermarket PIM system. Such systems facilitate the unification of diverse data sources and enhance the integrity and accessibility of product information.

Signifikant's platform helps manufacturers combine information from various sources, allowing them to provide timely, relevant, and personalised content to their users and partners.

With support for multiple channels and languages, we enable businesses to adapt quickly to market demands and customer needs.

Partner with Signifikant to maximise your aftermarket data and improve your operations. Our expertise in optimising product information will enhance decision-making and customer engagement. Contact us today to see how we can turn your content silos into valuable assets!



About Signifikant

Signifikant offers a complete solution for managing spare parts, including data documentation, e-commerce and personalization, resulting in increased profitability and enhanced customer satisfaction.

With a global presence through its headquarters in Sweden, and branch offices in India and France, Signifikant serves clients across Scandinavia, Europe, North America, and Asia.

Reach out to us on info@signifikant.se for more info