The Five Pillars of Digitization in the Automotive Industry

Digitization underpins the transformation of business activities, process improvements, and the development of new competencies and business models across 5 key areas within the auto industry.

1. **Connected Supply Chain**
2. **Connected and Autonomous Car**
3. **Industry 4.0**
4. **Digital Retailing & VRM**
5. **Mobility as a Service (MAAS)**

**Key:**
- VRM—Vehicle Relationship Management
- HMI—Human Machine Interface

Source: Frost & Sullivan
Future of Automotive Supply Chain—Connected Supply Chain

Future automotive connected supply chain targets substantial improvements to the value chain through enhanced efficiencies, reduced costs, greater collaboration and more innovation.

Automotive Digital Transformation Market: Connected Supply Chain, Global, 2016

- **A** – Connected Inventory Management
- **B** – Embedded Intelligence
- **C** – Product Traceability
- **D** – Sensorization
- **E** – Supply Chain Integration

**Connected Product**

Connected products, service opportunity (when a part needs replacement), real-time customer feedback to be incorporated in design changes, modifications, etc.

Source: Frost & Sullivan
**Industrial Internet of Things (IIoT) and Impact on Automotive Manufacturing—Automotive 4.0**

Digitization, Agile manufacturing, Supply chain integration and data analytics are core enablers of IIoT.

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<th>Core Enablers of IIoT</th>
<th>Key Elements of IIoT</th>
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<td>and operational inefficiencies</td>
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*Source: Frost & Sullivan*
Big Data from Connected Cars Offering Cost Savings

New product analysis, digital leads, reduction in warranty costs, and cost-savings are among key benefits of harnessing Big Data from connected cars.

Source: Frost & Sullivan

Connected Cars Market: Big Data from Connected Cars offering Cost Savings, LATAM, 2016–2023

- Digital Leads
- Warranty Costs Reduction, Predictive Maintenance
- Integrated Traffic Management
- User and Dealer Satisfaction
- Enhanced Product Development and Testing
- Services
- Co-operative and Automated Driving

Source: Frost & Sullivan
Digitalization Reshaping Automotive Retail Process

New automotive retail formats are disrupting how consumers of the future will connect and relate to OEMs' brands. Experience centers and flagships stores are growing in LATAM.

Automotive Retailing: Digitalization Reshaping the Automotive Retail Process, LATAM, 2016

3rd Party Online Stores

Web Sites offering customers a huge database for multiple car brands.

Live Online Interface

• OEM/Dealer Web sites to facilitate online sales with car configurators, visualization tools, and online chats

Experience and Lifestyle Stores

Lifestyle stores offer a strong automotive brand experience through lifestyle-related concepts

Concept and Flagship Stores

• Personalized experience
• Virtual experience
• Digital retail cycle

Pop-up Stores

• Pop-up stores are usually temporary stores with 3D visuals and QR codes at high-traffic locations designed to draw the public's attention

Note: Not a comprehensive list of examples. Images used for illustration purposes only. Source: Frost & Sullivan
As-a-Service Model Evolution in Automotive

The future will evolve to include unbundling of components to form “as-a-service” businesses. Mobility- and software-as-a-service will account for a majority of revenues.

TRADITIONAL MODEL

- Normal product sales and spare supply – Traditional model
- Product sales
- Spare parts sales
- Maintenance and operation fees
- Service experts and customer care centers for recurrent revenues

AS A SERVICE MODEL

- Upsell premium features
- Lower customer care costs
- Predictive analytics on the products to reduce the customer care costs
- Introduction of new models like pay per hour/minute, pay as you use, pay per mile

Value-added Aftermarket Services
Smart Mobility
Software-related Services
Optional Equipment As A Service

Source: Frost & Sullivan
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A detailed description of the methodology can be found here.
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