

Aftermarket Technology Roadmap

*Essential technologies aftermarket professionals must understand and
aftermarket suppliers must master*

Published by the [AASA Technology Council](#)



Technology Council

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Cloud Computing

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Data Privacy

E-tailing

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S&OP

SaaS

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Telematics

VIO / PARC Data

Voice Picking

Web Marketing

WMS

XML

Executive Summary

Technology formerly meant word processing, MIS and EDI. It now encompasses predictive analytics, smart parts, cybersecurity, cloud computing, omni-channel strategies, IoT and the digitization of almost all aspects of the supply chain.

Success in the aftermarket in many ways is dependent on successful identification, deployment, training employees in the use of, updating and integration of various technologies – many of which companies do not have core competencies in managing. IT's role in ensuring competitiveness continues to expand, but no longer can stand-alone IT departments manage the breadth of the disciplines and technologies that are emerging and are disruptive.

The AASA Technology Council (ATC) developed, published and updates this Aftermarket Technology Roadmap to guide aftermarket suppliers (and their channel partners) as they research technologies that must be understood, and in many cases, mastered. The Roadmap will be updated continuously to ensure aftermarket technology professionals and newcomers to the industry remain current and in the know.

Technology Roadmap Content

Each major technology is explained in stand-alone chapters, which include Definition, Description, Author and Resources. Links to relative content and related chapters provide additional information and resources. Subject matter experts have contributed content that enables readers to develop a good understanding of the technologies. Logos for ATC valued affiliate members are included with links to their respective websites.

AASA Technology Council

The AASA Technology Council (ATC) is the industry's forum for networking and exchange of best practices focusing on current and emerging technologies that support suppliers' efforts to reduce costs, improve efficiencies and pursue new business opportunities. All leading manufacturer brands and technology solution providers are members of the ATC. The purpose of the Council is to provide a forum for executives, managers and professionals to gain insight in the following key areas of focus:

- Sales & Marketing – BI, CRM, Digital Marketing, Data Analytics, E-commerce, E-tailing, Training, Forecasting
- IT – Network Management, Cybersecurity, EDI, ERP, Web Services, Cloud Computing, IT Outsourcing
- Data Management – PLM, PIM, MDM, Cataloging, Digital Assets, Mapping

The ATC holds several major events and sessions that enable suppliers to interact with other suppliers and to engage with the industry's leading channel partners. Events/meetings/sessions include the following:

- AASA Technology Conference – the industry's top technology event
- ATC Spring Meeting – networking, roundtable discussions and content from subject matter experts
- Channel Partner Technology Town Halls – annual event that brings suppliers and customers together to discuss technology opportunities
- ATC Fall Meeting – education and roundtable discussions for manufacturer members
- ATC Business Technology Innovation Award Competition – New and established companies “pitch” their brand new innovations to compete for the votes of ATC members for this annual prestigious award.

Initiatives and work groups provide opportunities for members to address industry technology challenges. Past and current projects include:

- EDI and Bar Code Standards
- Cybersecurity Best Practices
- Master Data Management
- POS Data
- Aftermarket Technology Roadmap
- AR Content for Repair Shops

For more information on the ATC, visit www.aftermarketsuppliers.org/councils/ATC.



1 | Definition

ACES (Aftermarket Catalog Exchange Standard) standard, owned and maintained by the Auto Care Association, was a watershed event in the evolution of catalog information development in the USA. As noted in the section of this Guidebook on “digital cataloging” this standard provided, for the first time in this region, a digital foundation for communication of catalog data. This information provided by the Auto Care Association for this standard provides several elements that are critical to its successful use by the industry.

2 | Description

- Defining the Vehicle on the Road: A master data base, the “VCdb” (Vehicle Configuration data base) that provides information about vehicle configurations operating in the marketplace, so that suppliers have a standardized table, to which, product data can be linked. Typically, a supplier would link its products to the specific vehicles that could productively use these products as replacements for the original products when they fail or are damaged. Accurate linkages are critical to the ability to find the right product for a given vehicle and product application.
- Defining the Products Themselves: A set of related standards called PIES (Product Information Exchange Standard) and its related data bases, including the PCdb (Product Classification data base, the PAdb (Product Attribute data base) and Brand table, all provide standardized, descriptive and detailed information about supplier products. After the supplier defines its products in this database, they can be linked to the VCdb above.
- A machine-readable format (XML, or extensible machine language) for use in sharing large amounts of data electronically.
- An information web site for users of the standards at “www.autocarevip.com”.

The advantage to the marketplace of using this standard, in cooperation with PIES, is that it significantly improves communication and mutual understanding among the channel partners of products and their specific applications to vehicles in the market. The ACES portion provides for a consistent application of products to specific “year, make and model” of vehicle, while the PIES provides detailed, standardized information about the products. Without this, the number of application errors (and the related costs that would result) in the market would skyrocket!

The ACES standard, itself, is provided free by the Auto Care Association, however the databases that are needed to use it effectively, in particular the VCdb in the case of ACES, is provided on a fee-based subscription basis. Please see more information about the PIES portion of the standard (and the fee-based data bases needed to support it) in its own section of this Guidebook.

The use of standardized data does come at a cost, but at a much lower cost than is needed to manually address the same information, and the same high-quality result cannot practically be achieved manually. This is made more important since most distributors in the marketplace prefer, or require, standardized digital data in the ACES/PIES format in the USA and Canada (Mexico is currently a mixture). It is also important to note that there are a number of companies that specialize in supporting suppliers in the development of ACES and PIES data, should that be an attractive approach for some suppliers.

3 | Author



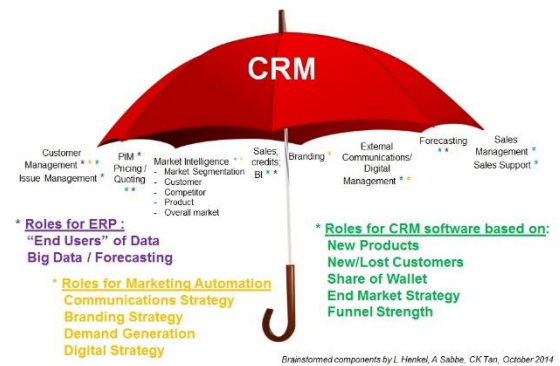
Charley Johnson | Chief Executive Officer | OptiCat, LLC.

4 | Resources

OptiCat <http://opticat.net> | OptiCat Online <http://opticonline.com>

CRM

1 | Definition



CRM, or Customer Relationship Management, is a broad concept with multiple definitions. The most concise view is: CRM is a philosophy and a business strategy, supported by a system and a technology, designed to improve human interactions in a business environment. There are many ways to achieve CRM, but in its full sense, it is a way to capture a 360° view of the customer, supported by technology, such that companies can give better service, recommendations, and make better decisions around their Commercial strategies.

2 | Description

Consider the umbrella in the above picture. CRM is not simply a sales tool, but a process that enables the entire Commercial team (Sales, Customer Service, Marketing, Product Management, Pricing, etc.) through multiple integrated tools.

Sales Management: a CRM tool will include Account and Contact lists, Activities performed for the customer by company personnel, and Opportunity management. Opportunity Management is the definition of potential sales called the pipeline. A sales person may receive a lead (see below, "Lead Generation") that will develop into a customer need. This need will travel through several stages resulting in a "win" or a "loss". It allows a company to understand (1) where its potential sales are coming from; (2) when they might expect the sale; (3) resulting in accurate forecasting to ensure the customer gets the expected merchandise or service.

Service Management: integrated with Sales Management, this tool will include the Account and Contact lists, and will indicate issues management, with insights into past activities and sales operations. It becomes a collaborative tool used (generally) by Customer Service teams and viewed by Sales teams, and tracks the issue from inception to finish, keeping personnel accountable to finding the quickest resolution to an issue. A Service Management tool can also be used to track warranties and issue avoidance.

Pricing & Quoting: a system integrated with the central CRM to request a price and/or define a price with approval levels as appropriate. Because of the integration with the CRM Opportunity module, it allows Pricing Management to understand what prices "won" or "lost" and to understand the reason, competition faced, and region the pricing behavior took place, resulting in more efficient pricing. With regards to quoting, it helps to improve quoting for faster turnaround.

Business Intelligence: Integrating CRM with the ERP or BI system gives the sales teams an understanding of what a customer is buying and what credits/invoices are outstanding. This can lead to better service and recommendations. "White Space Analysis" shows what the customer is buying and where he is not buying, creating an upsell/cross sell recommendation. This can also be used to incentivize the sales teams by showing a sales person the amount the customer is buying

and how much it would take to achieve a certain monetary gain. BI, combined with CRM, will also help in forecasting.

Gamefication: Similar to showing the sales person how much more sales it would take to achieve commission/bonus, gamefication creates competition among sales team members in a game oriented fashion with objectives which are tasks or behaviors which lead to sales. The psychology of a sales person is very rooted in competition, and with additional incentive in “beating” his opponent sales person or sales team, this helps move potential sales through the pipeline faster.

Lead Generation/Marketing Automation: Marketing’s campaigns through the web site, digital, or email result in interest from potential customers. These interests are nurtured electronically. If a potential customer is interested in a potential product, the next time he opens the website the product or related product appears enticing the potential customer to click for more information. Similarly, a Marketing campaign may be emailed to potential customers who have shown previous interest. The potential customer’s behavior is captured and scored. Once the score gets to a desired level, the potential customer becomes a lead that is passed to the sales person who takes it and defines an opportunity. In addition, the behavior helps Marketing teams understand what customers want to see, and can improve Communication and Digital strategies.

Implementation pitfalls: CRM implementations have historically had a high failure rate because the focus has been on reporting the pipeline to upper management. It has been perceived by sales people as “management Big Brother”. A key to successful implementation is to demonstrate to the sales people how it can increase their individual sales.

3 | Author

Lisa Henkel | Sales Effectiveness Program Manager | Gates Corporation

4 | Resources

Salesforce.com | Marketo | Oracle Sales Cloud | Big Machines

Cybersecurity and the Dark Web



1 | Definition

Cybersecurity, computer security or IT security is the protection of computer systems from theft of or damage to their hardware, software or electronic data, as well as from disruption or misdirection of the services they provide.

2 | Description

“Cybersecurity”...say it out loud once. It sounds very “Mr. Robot” or “War Games” doesn’t it?

Yet, at the end of the day, it’s simply the art of being logical and reasonable in an effort to protect your company’s most valuable and cherished assets. It’s a never-ending good versus evil campaign in an ever-changing war of minds and technology.

I often hear the statement “You can’t have TOO MUCH security protection!” Well, I’m here to tell you that this statement is utter nonsense. Would you spend \$100 to protect a \$20 bill? Absolutely not. That’s asinine! In the same way, you wouldn’t spend \$2500 on a piece of software to protect a \$500 laptop. Cybersecurity protection simply comes down to common sense.

To take this a step further, if you break down cybersecurity to its simplest form, you end up with Risk Management. It’s knowing the threats and understanding the countermeasures. It’s using sound judgement and diligence to come up with the most appropriate controls to protect your company’s investments. It’s measuring the value of an asset against the cost of the countermeasure. It’s measuring the pros and cons and coming up with the best solutions based on the relevant facts.

“Yes, but what about the dark web, and the scary side of cybersecurity?” Well, this is a topic that you could spend weeks, months, or even years diving into. It’s crazy, it’s unimaginably weird, and it’s technologically fascinating! It is quite literally, the digital Wild West.

For those hearing this term “dark web” for the first time. Imagine another internet where anything goes. An underworld of mystery. A part of the World Wide Web that is only accessible by means of special software, allowing users and website operators to remain anonymous or untraceable. As you can tell already, this is a recipe for some digital thuggery and mayhem to take place.

Wait, did you just say “Anonymous?” Aren’t they the hacker outfit that wears the creepy Guy Fawkes masks who express an overarching desire to combat censorship, anti-oppression, promote freedom of speech, and counter government control? Yep. That’s the one.

The Dark Web

"This is your last chance. After this, there is no turning back. You take the blue pill—the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill—you stay in Wonderland, and I show you how deep the rabbit hole goes. Remember: all I'm offering is the truth. Nothing more."

-Morpheus (Laurence Fishburne) – The Matrix



I guess you could say that cybersecurity is far-reaching and crosses many boundaries both corporately, politically, and socially. It's a mystery, wrapped in a riddle, wrapped in an enigma as they say. Well, or it's not. Maybe it's just us against them and not much more. I guess it really just depends on what you hear, who you talk to, or what you uncover on your own.

Whatever it is, it's here to stay and it's a vast ocean of knowledge and information. This is why I love it! This is why I live it! This is why I can never get enough of it.

If this an area that also interests you, I invite you to dig into to the fascinating world that is cybersecurity and the Dark Web. However, I warn you, what you find, can't be unfound. I've provided a few links below to enlighten your mind and pique your interest to dig even further.

Enjoy!

3 | Author

Kevin Pentecost | Standard Motor Products



4 | Resources

[The 3 Simple Steps](#) | [Cybersecurity Frameworks](#) | [The Dark Web](#)

Digital Assets

1 | Definition

With the ever-growing digital aspect to the automotive aftermarket buying process, it was only a matter of time before the Heavy Duty and Off-Road industries were going to see the same transformation. It's no secret that content is king, but it can seem like a daunting task as you think back to all of the products - probably thousands - that have very little to no associated data or visual information over the last few decades. The following provides a framework for building your content strategy.

2 | Description

In general, there are two types of content: 1) visual, typically referred to as digital assets and 2) technical, which are the specifications of the parts and their potential uses. This chapter will focus on the visual or digital assets.

1. The first step in any content project is to take a step back and think about the ultimate goals for your product content. Are you looking to enhance your personal brand and website or are customers/receivers asking for this content? If the latter is true, it is important to know what they need as this will always provide a good baseline for the minimum content needed for success. Receivers often will provide a digital asset document outlining their requirements, so you need to do is request it. If you are proactively creating content, it is important to build an internal workgroup with both the marketing and product teams to ensure you are capturing everything everyone needs.

2. With the goals identified, one should focus on what content to create. Most assets will fall into one of three categories: static images, video and more recently, 360°/3D imagery. Below are some quick definitions:

- Static images – These are your general product photos, i.e. front, back, left, right, ¾ marketing and any connectors. These images are generally needed for every part. The exact angles and number of images may change based on complexity, but when buying online, you need to see the parts. It is important to capture connectors so that buyers have an extra level of confidence they are selecting the right part during a digital purchase.
- Video – Videos work great for complex parts requiring deep explanation of function or even installation. Think of videos as your chance to explain to potential buyers both the value of your parts and how to use them. This may not be necessary for every part but can be very helpful as the complexity of the part or any unique features increase.
- 360° Imagery – These are interactive images which allow the buyers to rotate parts around and even up and over the parts to mimic an in-person experience. Over the past couple years, more and more receivers have begun asking for 360° imagery because it provides the buyer the opportunity to fully explore a product and reduce or even eliminate

any doubt they have selected the right part.

- As an added bonus to 360° images, you can often extract many - if not all - of the standard static images you need right out of the 360-degree file as a “spin set” view is typically made up of between 24 and 72 JPEG images depending on the number of planes captured.

3. Once you identify the goals of your project and the content required to achieve them, a plan should be created to reflect priorities and timing. Typically, there will be a significant number of priority items, but there also will be less-urgent items. A good rule of thumb is to review the drivers of your top 20% to 30% of sales. Receivers may provide their priority lists and deadlines. This allows you to manage the project based on immediate and long-term needs and help you select the right partners with which to work.

4. Now that we have covered the goals, priority list and the required content, it is time to build the image-capture strategy. Project size, goals, timing, number of products and new product release frequency will influence whether to build a studio and capture the images in-house or partner with an outside agency. A third party agency typically will be able to capture the images much faster as this is their core competency, and they can allocate more expert resources toward a quick project completion. Internal studios provide more control over the specific content and ownership of the process over time. General rule of thumb: If you have fewer than a few thousand products or release only a few hundred a month, working with an agency can be less costly and eliminate the need to hire a photographer/videographer, which would only be needed a few days a month.

Advanced agencies offer a hybrid approach in which they will help with the initial priority product list and then help set you up with your own studio to handle new products and the remaining backlog. They typically can build remote studios on-site at your facility for large upfront projects to eliminate the logistics of shipping thousands of parts and then can leave the equipment for ongoing image capture needs.

5. The final step in the process is **execution**. It often is helpful to use a “single touch” approach. One of the more challenging parts of photographing a product is actually sourcing and preparing the product. The actual image or video capture is just one small step. For this reason, it is important and the most cost-effective to capture everything you think you might need at one time.

If you are building an internal studio, work with a partner that can provide equipment to automate the image-capture process as much as possible. While there is no way to fully automate the creative process there is some stellar equipment available to make the process easier and faster for your team. If you have identified 360° imagery as a requirement, identify a partner that can train you how to double dip these assets to gather your static images at the same time.

If you select the agency approach, locate a partner that has experience in the aftermarket, as this will help ensure you capture all the images you need the first time. It is essential to utilize best practices for particular product types based on the information received from receivers and other manufacturers. If 360° images are needed, work with an agency that can pull some or all of the static images from those 360s in order to maximize your investment. This also is a great time to

have your agency capture weights and dimensions for shipping or attribution purposes. This saves you from having to pull the part off the shelf again later.

The final step in the digital asset creation process is to ensure you have a way to store and syndicate the images/videos. There are a number of software and service providers that provide these capabilities if you do not opt to have your internal teams handle it. If you are choosing to send the images to a number of receivers on your own, it can be helpful to have the files named for each of them when they are created so you can simply transfer the files without the need for renaming or reformatting.

3 | Author



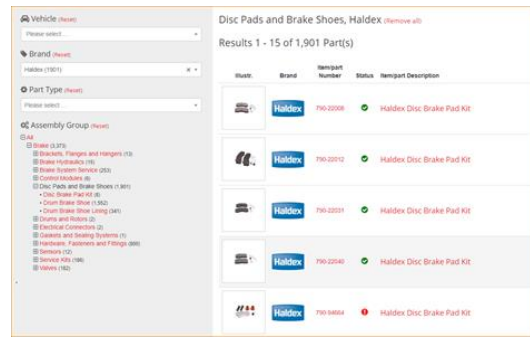
Matt Fowler | Director of Sales | Snap36

4 | Resources

[AutoCare Digital Asset Best Practices](#) | [Snap36 Automotive Page](#)

Digital/Online Catalogs

1 | Definition



When most of us think of “digital and online catalogs”, we tend to think of Amazon, where many of us routinely purchase a variety of products, from food items to clothing to workshop tools, and much more. However, as the term applies to transportation related markets the meaning is much different. While the general operating approach may be similar, the use and proliferation of online catalogs is significant. So, where to begin... let’s start with a bit of history to provide a solid understanding of how we got here, then we will address how things work today and how they will likely work in the future.

2 | Description

The History

There are really two stories to tell that provide the best perspective on the development of cataloging... before the institution of digital (and digital standards) and after the introduction of that technology.

Before Digital Standards:

The Supplier’s Early Perspective:

In the beginning, catalogs in our industry were generally printed, with suppliers of parts providing a “catalog” of available products to their customers. Each supplier would choose what information it would include in these catalogs based on the products being sold. This might include the applications for the products (such as the vehicles the parts might fit), known as “applications”, as well as some level of product descriptive information (things like dimensions, materials, etc.), known as “attributes” data in the automotive marketplace. All this information was developed and stored in written or printed form in word processors using spread sheets at the supplier’s place of business, and catalogs were printed from formatted sheets provided to outside, or in house, commercial printers. This was a laborious and costly task that required substantial resources and product knowledge gathered by the company’s catalog manager from various departments within the organization, such as engineering, accounting, logistics and marketing, and from a variety of inside and outside resources to develop application data. An interesting note is that this catalog was often outdated and riddled with errors that were manually discovered by the time it had been delivered to the distributors and shops for use.

The Distribution Channels' Early Perspective:

Prior to digital tools and standards, the distribution of products was accomplished by distributors and retailers taking the information provided by suppliers in paper form and incorporating it into “catalogs.” These might take the form of a distributor branded catalog or an accumulation of supplier catalogs all grouped on catalog stands for their own use and the use of their customers.

After Digital Standards

First, it's important to know that there are many applications of digital technology in cataloging and this paper focuses only on the highest level of market application. In this context, the use of digitized data, that is data usable and readable by a computer, streamlined the preparation of data for catalogs at all levels of the marketplace:

- Initially, this allowed suppliers to provide “digitized files” to the catalog printers instead of paper documents, thus allowing elimination of type setting by the printers.
- Next, the advent of digital standards allowed a “common language” to be applied, first internally by some enterprising companies. These companies developed their own standards and vehicle tables that allowed them to digitally assign products to specific vehicle applications, using paper-based supplier data, and later the supplier's digital spread sheets.
- The “big step” was brought about by the efforts of The Auto Care Association (ACES and PIES) in the USA, and TecAlliance (TecDoc) in Europe and other countries, to provide more comprehensive industry standards for industry wide adoption and use. After years of development, these standards represent the foundation of modern cataloging for the global vehicular industry. While there are other standards still used by some distributors and offered commercially, these two are the accepted standards sets for data preparation and distribution.
- With these developments, distributors can produce catalogs digitally using digital files provided by the suppliers and can add their own visual enhancements to their catalogs as they see fit. The digital nature of the information makes it relatively easy to provide catalog data through the entire distribution system, all the way to the shop floor for installation of the products into customer vehicles. The result has been a proliferation of online catalogs providing unprecedented access to national, if not global, product offerings.

It is important to note that the commonality of data provided by the standards is critical to the successful application of a supplier's product to the appropriate vehicle. As examples, if naming conventions are not consistent or if data measures are not consistent across supplier offerings, significant errors can result. This, in turn, results in warranty returns and dissatisfied customers.

Improving “speed” in the cycle of bringing new products to market provides more selling time for products versus the competition and allows suppliers to showcase their products more readily. The “digital standards revolution” has provided significant improvements in supplier speed-to-market, taking many months off the time needed to get products into selling positions at all levels of the distribution chain.

Finally, the advent of digital standards allows suppliers to communicate via the internet with customers at all levels of distribution, allowing the company story to be told in ways that was only dreamed about in the past. Offerings are now spreading beyond automotive to heavy-duty truck and other markets. More and more suppliers are joining distributors in more effectively “telling their product stories” and differentiating their products via online digital catalogs. Studies show that a high percentage (as high as 80%) of products are “shopped online” prior to purchase, either from an online catalog or from a brick and mortar store. Therefore, online digital catalogs using standardized data represent a significant opportunity for suppliers to make their messages heard by customers.

Please also see the sections covering more details on digital standards.

3 | Author



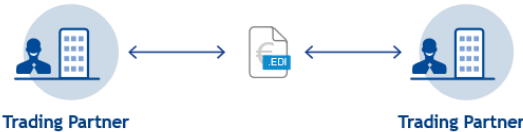
Charley Johnson | Chief Executive Officer | OptiCat, LLC.

4 | Resources

OptiCat <http://opticat.net> | OptiCat Online <http://opticatonline.com>

Electronic Data Interchange (EDI)

1 | Definition



Electronic Data Interchange (EDI) is the business process electronically communicating transactional information that was traditionally communicated on paper, such as purchase orders and invoices.

2 | Description

EDI has been utilized for more than 50 years, and at a glance, it represents quick and accurate digital data exchange within the supply chain. It basically is an electronic postal service between trading partners. Its longevity has created rumors that claim it is becoming obsolete, but in reality it is quite the opposite. In the past, the term EDI was only used when referring to two formats: ANSI X12 and EDIFACT. Today, the term encompasses over 300 formats, including XML and PDF. It also is common to use EDI in a broader sense to refer to business transactions involving API integration with e-commerce sites like Amazon and eBay Motors, and/or integration with internal applications like ERP and WHS.

EDI Standards and Document Specifications in the Aftermarket

Standards are the rules (structure, content, syntax) that define the language for document exchange between trading partners to ensure a common meaning across systems. ANSI X12 and UN/EDIFACT are the most prevalent formats used in the aftermarket industry.

- Common EDI Documents:
 - 850 Purchase Order
 - 810 Invoice
 - 855 PO Acknowledgement
 - 856 Shipment Notice
 - 997 Functional Acknowledgment

Just as a spoken language can have many dialects, each standard can have numerous EDI specifications, or specific rules that determine required and optional document information (i.e. item number, quantity, and shipping address). In the automotive aftermarket, there is Super Spec. It uses the X12 standard foundation and overlays common data rules to create industry-wide specifications that must be adopted if trading partners opt for EDI communication.

EDI Communication Methods and Protocols

A communication connection is required to transmit, or send, EDI data between trading partners. To establish a connection, different methods with varying protocols are available:

- Point-to-Point Direct Connections:** Trading partners transmit data directly via secured protocols, such as Applicability Standard 2 (AS2), Azure Messaging Queue, File Transfer Protocol (FTP) with Virtual Private Network (VPN), Secure File Transfer Protocol (SFTP) and File Transfer Protocol Secure (FTPS), as well as HyperText Transfer Protocol (HTTP). These protocols determine how the

data is delivered. Direct connections offer full control over EDI operations but require investment in hardware/software and IT experts to manage the environment.

- **Outsourced Services:** Companies that do not want to invest in the infrastructure and personnel required to manage EDI in-house often choose a third-party EDI service provider to manage implementation, trading partner onboarding, and daily maintenance/support.
- **Indirect Connections:** A Value-Added Network (VAN) is like an electric post office—a third-party service that routes data transmission to and from trading partners.
- **Web-Based EDI:** Ideal for small companies with no technical staff and limited funds that must quickly become EDI compliant, web-based EDI uses a portal that enables trading partners to transform documents into human-readable web pages, but it requires manual intervention.
- **PDF-to-EDI:** Paper-based documents are converted to EDI with 100% accuracy, eliminating manual processing involved in traditional EDI and automating all non-enabled partners.

EDI Benefits

Companies often view EDI as an obligation they are forced into by larger trading partners, but EDI can benefit businesses at every level: small, medium, and enterprise. See below:

- **Cost Reduction:** By eliminating manual data entry, companies can save a significant amount of time and money, while reducing the risk of penalties and chargebacks due to data entry errors.
- **Increased Accuracy, Efficiency, and Productivity:** By automating workflows, human errors are eliminated, and processing time is reduced for better allocation of valuable resources.
- **Improved Visibility Throughout the Supply Chain:** EDI gives access to critical transaction information and data reporting, thereby improving business partner relations.
- **Security:** EDI ensures the secure exchange of critical information through protocols, encryption, verification, confirmation, and other measures.
- **Full Integration with Internal Applications:** Integration with internal applications, such as ERP or WHS, prompts a quick return on investment (ROI), among other benefits.

3 | Author

Joe McManus | Senior Sales Executive | TIE Kinetix



4 | Resources

[EDI 101: Back to the Basics](#) | [X12 Directory of Transaction Sets](#) | [Super Spec](#)

[Corcentric](#) | [GCommerce](#) | [Tie Kinetix](#)

Global Vehicle Data



1 | Definition

The Global Vehicle Table is a comprehensive standardised database describing the attributes of the cars and light commercial vehicles which are on the road throughout the world. It covers all cars and light commercial vehicles and countries and regions for which the data is available.

2 | Description

Today there are approximately 1.4 billion cars and light commercial vehicles in use around the world. The data pertaining to these vehicles is brought together from a variety of sources including vehicle manufacturer production figures, websites and electronic catalogues, vehicles in operation data (VIO), new vehicle registrations and used car websites.

The Global Vehicle Table is the foundation for global parts manufacturers and parts wholesalers to organise their product marketing and data management activities and to optimise the tools they use in their daily business.

This Global Vehicle Table identifies these vehicles at a level of granularity which allows, on the one hand, the key attributes to be identified in order to link the spare parts easily to the vehicle and, on the other hand, to map the vehicles to the vehicle tables used today in, for example, the ACES and TecDoc standards.

There is increased demand for more granularity in the vehicle attributes in order to be able to link the right parts to the right vehicle easily which is becoming an increasingly complex task.

3 | Author

David Winter | Executive Vice President | TecAlliance



4 | Resources

IHS Markit | TecAlliance

PIM



1 | Definition

Product Information Management is a practice by which all information required to market and sell products to all sales channels is governed, managed and systemized. PIM is the acronym by which the technology systems developed to manage all these elements is commonly known.

2 | Description

PIM systems for the automotive and commercial vehicle aftermarkets are highly specialized software applications that enable companies to manage and maintain four key areas of functionality in which specific processes are tightly intertwined.

Product Management enables the creation and maintenance of all customer-facing information related to the product, including interchanges, supersessions, product attributes, images and other digital marketing content. **Catalog Management** pertains to the creation and maintenance of vehicle application records. **Pricing Management** enables the determination, optimization and segmentation of pricing related to the market and/or specific supply contracts. **Partner Management** enables the creation of customer-specific files representing the products a customer buys, along with content that applies to that customer, such as customer-specific pricing, customer-specific part numbering, and other customer-specific data elements and file formats.

PIM systems for the aftermarket rely on a number of external reference tables for decision support and providing visibility to enriched information across the enterprise. The VMRS Code Table, Product Attribute database (PAdb), Vehicle Library (VCdb), the Car Parc (vehicles in operation) and the Product Classification database (PCdb) are examples.

PIM System outputs include traditional publishing of parts and application catalogs, and, in addition, outputs for aftermarket standards, such as Auto Care Association's ACES and PIES standards, Edgenet and outputs for other e-Catalogs, OptiCat and 1-World Sync data pools for traditional distribution and big-box retailers, and TecDoc in other international markets.

3 | Author



Jeff Marshall | Director of Business Development | Pricedex Software

4 | Resources

Pricedex Software | Stibo Systems | Teradata | Vertical SKUs

POS Data

1 | Definition

Down-channel Point-of-Sale (POS) transaction data -- inclusive of Inventory -- which provides any manufacturer visibility to SKU-level part performance at the point of consumption.

Combining POS data with aggregate market intelligence and analytics helps guide channel programs, improve service levels to customers, and grow brand sales.

2 | Description

Aftermarket parts suppliers have a longstanding tradition of providing collaborative services to their channel partners. During the 1980s and '90s, manufacturer representatives walked in the back door to help stock the shelves of tens of thousands of jobbers in an effort to support their mission to offer the right part, in the right place, at right time. Their "vision" of real-world market dynamics were limited, however, to their own shipment data, and any local sales and inventory "reports" that were handed to them during each sales call.

Today's suppliers must have ready access – even on a daily basis – to 80% of their down-channel POS data in order to ensure strong brand and product performance at the point of consumption.

Leading suppliers are provisioning cloud-based repositories to centralize and provide seamless visibility to their down-channel POS data. Sales reps can then access daily alerts to brand and part performance for their assigned customers via their mobile devices.

The critical next step in this evolution is to combine aggregate market data and advanced analytics that drive fact-based decision making and stronger, more effective marketing and sales strategies. Aggregate POS data from varied market intelligence sources can then be combined to paint a picture of the **full** market potential for any brand. Advanced analytics can centrally automate services across the entire channel for customer loyalty programs, assortment/inventory optimization, and even category management projects.

3 | Author

Rod Bayless | Sr Director, Industry Data Analytics | Epicor Software



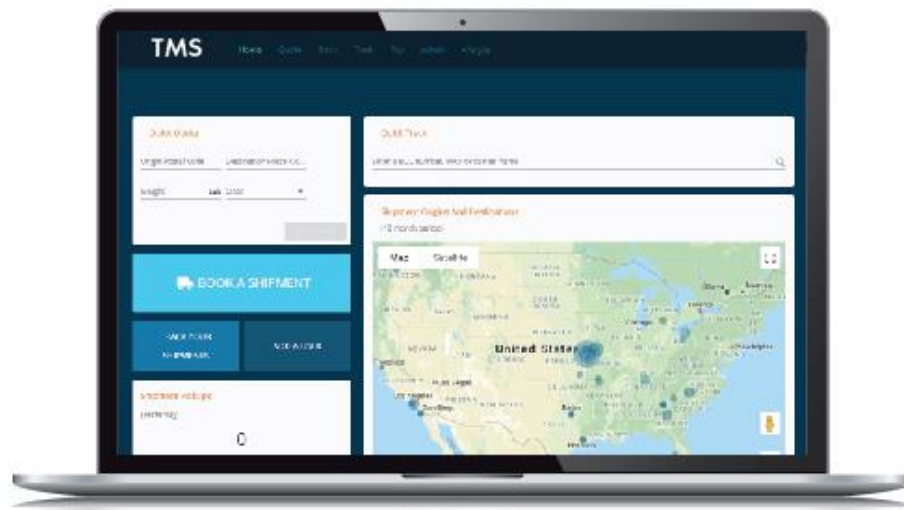
4 | Resources

Epicor | Insights 2 Action | NPD

TRANSPORTATION MANAGEMENT SYSTEM (TMS)

1 | Definition

A transportation management system (TMS) is a logistics platform that uses technology to streamline the shipping process. From quoting a shipment through delivery, a TMS platform optimizes the physical movement of goods (inbound and outbound) and offers technology components for on-demand shipment creation, BOL creation, carrier scheduling, tracking, reporting, contract management, document storage, freight bill audit and payment, business intelligence, and compliance.



2 | Description

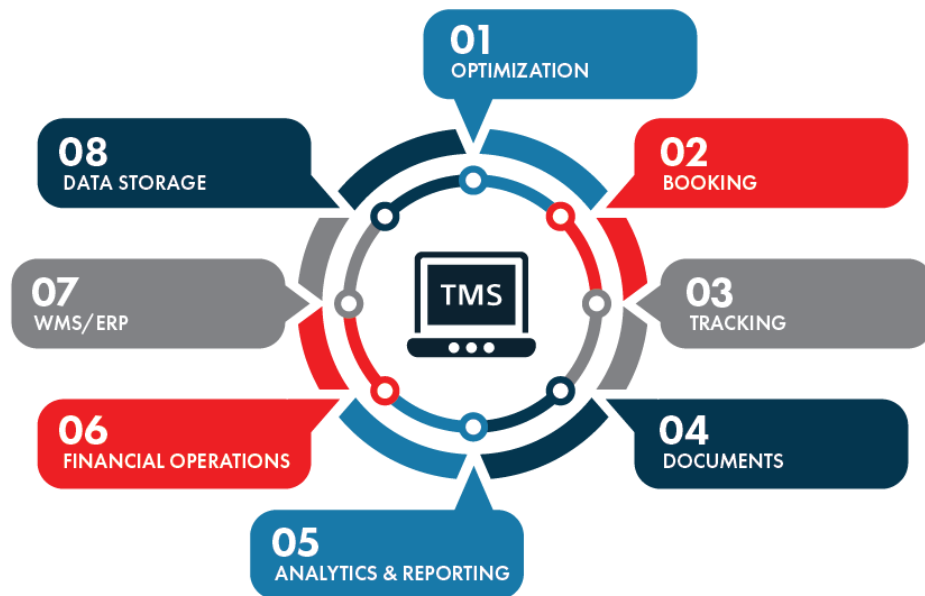
Transportation management systems consist of load optimization, carrier selection, route planning and optimization, delivery confirmation, freight audit, bill payment, and other administrative components that cover four main areas of transportation management:

- **Planning:** It gives shippers visibility to their data across all company locations, vendors, and shipping modes and allows for route planning, carrier optimization, and document management.
- **Shipment Execution:** It enables the execution of the transportation plan, including carrier-rate approval, carrier sending, electronic data interchange (EDS), etc.
- **Follow Up:** It allows for follow up at each milestone of the transportation process, tracking, document editing, customs clearance, invoicing, alerts, etc.
- **Measurement:** It includes business intelligence capabilities to measure KPIs, uncover trends, and identify opportunities across the supply chain.

While transportation management systems vary in functionality and complexity, any modern TMS platform should be cloud-based, with responsive design, and built to ensure stability, security, scalability, and resilience.

And because each business is unique, another important component of any high-quality TMS platform is cross-platform integration.

As demonstrated below, there are multiple points along the life cycle of a shipment, where data is needed, and that data often comes from different sources (carriers, warehouse management systems, financial services, vendor websites, documents, etc.) A TMS should be able to be customized to pull data from and integrate with other technology platforms in each of the following areas, in order to execute each shipment:



3 | Author

Bob Brown and Ben Tarman | New Business Development | eShipping®

4 | Resources

LogisticsManagement.com | Techopedia | eShipping® Proprietary TMS data