



50 Years of Growth, Innovation and Leadership

Service Relationship Management (SRM)

Gaining the Ultimate Competitive Edge in Commercial Assets Service

A white paper by Frost & Sullivan

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INTRODUCTION

We are living in exciting and challenging times. Over the past few years, we have had first-hand experience in how the Internet of things (IoT) is reshaping our professional and personal lives.

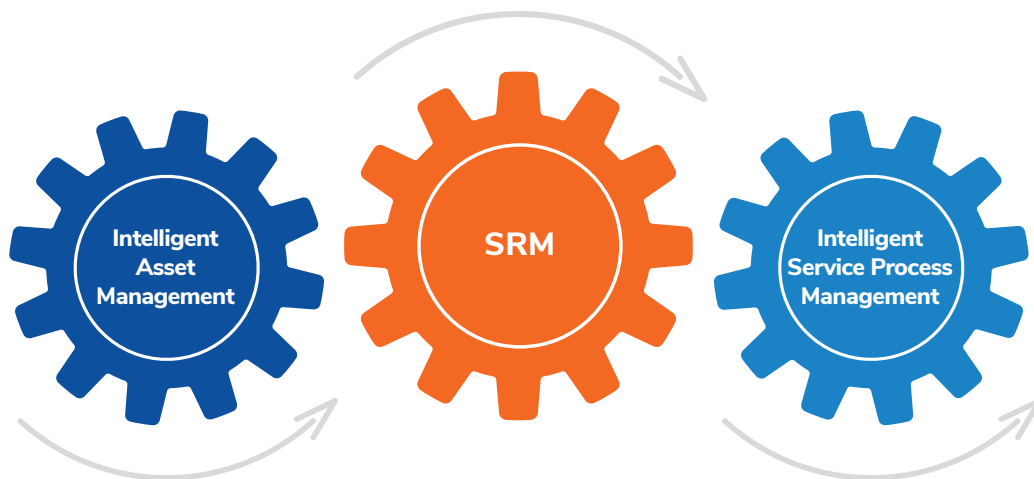
Industry 4.0 continues to revolutionize manufacturing and supply chain management through connectivity, big data, real-time data, and smart artificial intelligence (AI)-based decisions that support speedy, efficient service execution. Out in the world and at home, the same attributes of interconnectivity are transforming our activities, engulfing us in an ever-growing ecosystem of digital support and interaction.

As digital transformation accelerates, not a day passes without us hearing how Connected, Autonomous, Shared Mobility, and Electrification (CASE) and their convergence will further transform the “mobile assets” in our lives—assets ranging from cars to trucks, vans to buses, and even pizza-delivering drones to monster dozers!

In the face of these new market trends, the asset service paradigm will have to rapidly evolve to match emerging demands. To optimize asset performance and availability, the entire service supply chain and the underlying service management process will have to realize new levels of connectivity and communication. Assets are no longer just a physical element providing mobility from point A to point B; they sit now at the core of what companies find themselves competing on—service efficiency, transparency, responsiveness, and customer happiness.

There are ways your business can benefit from this rediscovered importance of service—and our perspective is that Decisiv has definitely emerged as a clear market leader in this area. Decisiv’s Service Relationship Management (SRM) ecosystem promotes better decisions and allows for enhanced management as it drives both intelligent service management processes—connecting the right people to the right information at the right time—and intelligent asset management. SRM allows for higher asset availability combined with higher levels of performance, including having better control over how assets are purchased, managed and serviced in the future state.

ROLE OF SRM IN ASSET MANAGEMENT AND ASSET SERVICE MANAGEMENT



Because SRM improves service efficiency by streamlining communication and collaboration, SRM usage results in higher asset availability, higher levels of performance, and generates actionable data that allows for better control over how assets are purchased, managed, and serviced over their lifetime.

CHAPTER 1: SERVICE RELATIONSHIP MANAGEMENT (SRM) AND ITS RELEVANCE TO COMMERCIAL ASSETS

Emergence of SRM in this decade and its increasing role in the future

Ensuring asset availability and performance—present and future—is key for a business to generate revenue, support profitability, and drive greater customer value. Monitoring such values is easy in certain operations where active, direct control can be exercised on the asset. However, it is more challenging in operations that do not provide the same level of transparency or where more complex communication is required. These areas offer the greatest potential to tap into unaddressed opportunities using SRM.



The advent of IoT has highlighted the emergence of SRM as one of the main drivers in dramatically improved operational efficiencies in such gray areas. SRM brings greater control and efficiency to service events by providing organized structures, streamlined communications, and outstanding visibility. In essence, it pushes all the levers of efficiency, yielding mutual benefits for all parties involved.

What exactly is SRM?

Born as a collaboration

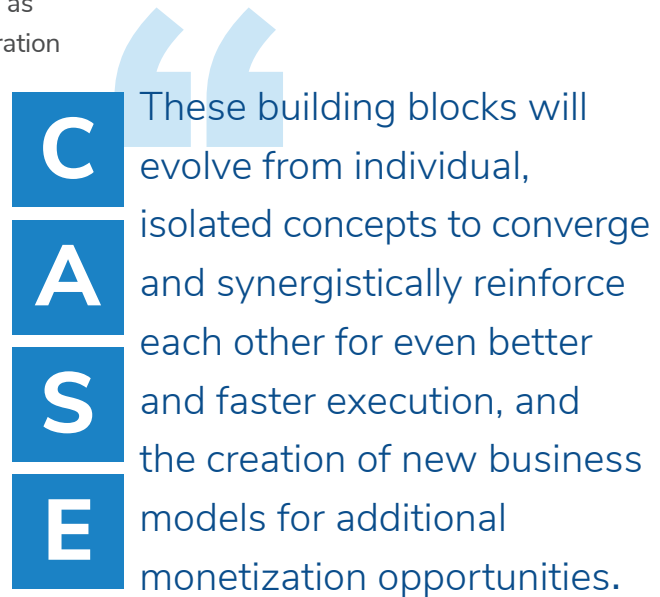
tool between manufacturers, commercial asset service providers, and fleets to manage repair and maintenance activities, SRM facilitates rapid case creation, communication and scheduling; allows service status to be tracked; and records all the details of the service performed. Today, it has transformed the entire service value chain, connecting and integrating a range of diverse participants into a single, rich, and interactive asset service ecosystem.

The effectiveness of an asset service ecosystem is drawn from the collective strength of its participants. As depicted, an asset service ecosystem enables direct and constant exchange of data, decision-making, approvals, and communication between every participant, including manufacturers, service/call centers, service providers, fleet owners, fleet operators, leasing/financing companies, and technology providers in a service event. As the sophistication of commercial assets increases, the need for collaboration and streamlined communication across a rapidly expanding ecosystem becomes critical.

Commercial assets in a future CASE and AI world

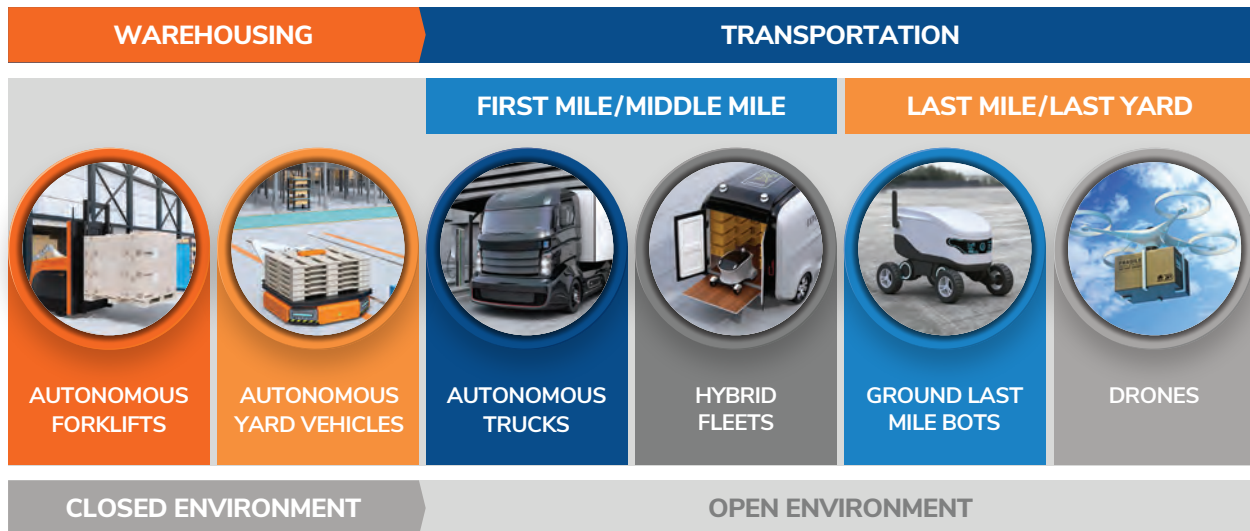
The benefits of connectivity, information exchange, and real-time data treatment will be further leveraged in the coming CASE and AI-supported world. These building blocks will evolve from individual, isolated concepts to converge and synergistically reinforce each other for even better and faster execution, and the creation of new business models for additional monetization opportunities.

- Connected:** Telematics, and their extension as an open-source platform, are offering integration capabilities that meet the demand for connectedness and access to real-time insights across operations, processes, and multiple participants. The telematics market is expected to grow at a CAGR of 18% between 2018 and 2025, with vehicle-to-everything (V2X) further enhancing communication between the vehicle, infrastructure and overall environment.
- Autonomous:** Major commercial vehicle (CV) OEMs view North America as their main development and testing market for autonomous driving (AD) technologies with the promise to deliver safer and more economically attractive solutions. For example, hub-to-hub applications have the potential to address the ongoing challenge of driver shortages in the heavy-duty (HD) vehicle arena, while bots and drones are poised to revolutionize last-mile delivery.
- Shared mobility:** Spurred by digital transformation in the CV industry, digital freight brokerage—which is currently more than doubling in size every year—is likely to become the largest market segment in the US. A cohort of automated, on-demand brokerage service providers led by Uber Freight, Convoy, Transfix, and Loadsmart will make strong inroads into the market by tackling inefficiencies and the lack of responsiveness of traditional load brokerage companies. Concurrently, shared models of operation will herald the transition from an ownership-based approach to assets to a usership-based one as exemplified by Transportation-as-a-Service (TaaS).
- Electrification:** The CV industry is making significant strides toward full-electric trucks, with low daily operating-range trucks expected to be fully electrified first. Light-duty (LD) vehicles, vehicles for vocational use applications, such as refuse and yard or drayage trucks, and trucks like the Tesla Semi and Nikola for longer-range applications will follow suit. In the off-highway (OHV) segment, the shift will be more toward hybrids than full electric.
- AI** will be the great enabler in this transformation, simultaneously being the backbone for the development of autonomous systems, the engine to monetize data from connected vehicles, the driver behind the optimization of digital solutions, and the source of new services/business models.



These building blocks will evolve from individual, isolated concepts to converge and synergistically reinforce each other for even better and faster execution, and the creation of new business models for additional monetization opportunities.

HOW CASE-IFICATION WILL CHANGE THE COMMERCIAL ASSETS LANDSCAPE



These evolutions will create challenges and impose changes in asset service and maintenance, and generate new requirements that can most effectively be met within the collaborative framework of an SRM Ecosystem.

- Connectivity will continue to strengthen linkages across the SRM Ecosystem, further enhancing service quality, creating new revenue opportunities, and fostering data monetization. This shift will be paralleled by an increase in the number and range of participants—data, analytics, and technology providers among them—who can engage in the service process. Asset history captured by SRM will fulfill the stringent servicing and maintenance record and auditability requirements of autonomous technologies.
- Shared mobility will intensify the use of assets and blur traditional models of ownership. At the same time, autonomous trucks will create a challenging environment where the trucks themselves will request servicing, even as new providers enter the ecosystem to service all of the components and software that autonomy demands. As tech-heavy and asset-light new business models are targeted within shared mobility, the central dilemma will hinge on risk-sharing; who owns what risks? To move past traditional ownership models, risks need to be measured, managed and controlled such that they can be priced accordingly. Against this backdrop, the role of SRM will become increasingly prominent. SRM will benefit shared mobility models by providing systematic gathering and centralization of information.
- The transition from traditional internal combustion engines to 100% battery electric-powered assets is likely to create an expansion of service locations where existing and new vehicle technologies will be serviced, repaired, maintained, swapped, tested, and overhauled. Everything from electric batteries to electric motors to all new components will be fully supported by the process- and data-driven nature of SRM, which allow it to readily support large amounts of diversity and multiplicity in asset types, service needs, and parts.
- AI will find a perfect home in cloud-native solutions combining complex quantitative and qualitative data.

Benefits for participants in the LD, MD-HD, OHW industry and markets

With such dynamic developments in commercial assets service, the number and involvement of participants in the SRM Ecosystem are continuously expanding. Beyond the initial core of OEMs, their service providers, and fleet owners, the SRM Ecosystem has evolved to include independent service providers, lessors, fleet management companies, OEMs, fleet management systems (FMS) providers, Tier-1/aftermarket providers, dealer management systems (DMS), data providers, and a plethora of other digital service providers. Nevertheless, a common element remains the way SRM links these participants across the entirety of the service supply chain, allowing each of them to contribute to and benefit from unsurpassed improvements in asset performance and utilization. In essence, the most significant value that an SRM Ecosystem brings is a tremendously expanded connected network that drives the productivity of all players, boosts the efficiency of the model, and enables a shared repository of valuable insights.

Performance, availability, and efficient utilization will be rooted in SRM's unique capabilities that support:

- Intelligent service process management, regardless of the nature and diversity of assets.
- Intelligent asset management over a complete lifecycle, ranging from acquisition, utilization, return and disposal; this is achieved through pertinent and highly granular analytics based on robust data generation.



Some of the benefits that SRM provides to multiple participants include:

- **Asset owners, fleets, operators:** Drives asset performance and uptime, reduces overall lifecycle service costs, enables greater visibility into and control over service process, improves access to data at the point of service, supports superior analytics, and ensures higher portability of service; allows for higher asset utilization, including assets that start to perform better and experience fewer breakdowns and a longer useful life.
- **Service providers, dealers:** Improved efficiency of workshop and service bays, availability of all pertinent information and records, better accuracy of diagnostics, faster turn times, efficient and effective customer interaction, higher parts sales and revenues, easy handling of warranty, and improved customer experience, satisfaction, and retention.
- **Lessors, fleet management companies:** Enhanced traceability, better coordination of service events, more reliability, higher levels of safety, and financial benefit that includes lower total cost of ownership (TCO).
- **OEMs, fleet management systems providers, Tier-1/aftermarket providers:** Increases customer satisfaction and allows for customer retention by providing a competitive edge to customers; offers valuable insights into repair operations, customer experience, and customer knowledge; for OEMs, enhances dealer engagement and offers a differentiated and improved customer experience, leading to loyal customers and potentially increased sales. Improved asset service across more connected service points enables better cost control, reduces risk, and improves financial performance. More forward-looking benefits include maximizing the use of telematics/diagnostics data, future-proofing by gaining the flexibility required to connect with new/innovative players, and acquiring the transparency/control necessary to offer Testing-as-a-Service (TaaS).



Improved asset service across more connected service points enables better cost control, reduces risk, and improves financial performance.

These benefits span all categories of Commercial Assets:

- **Light Duty:** The emergence of a fleet and leasing business in the traditional professional and public sectors, the new business and efficiency requirements that result from the growth of e-commerce and last-mile delivery, and the introduction of global, platform-based models simultaneously offer expanded opportunities for car companies to target the CV world while strengthening customers' expectations about improved ways to secure asset performance. Both from historic and current perspectives, LCVs have not seen a role for themselves in the lifecycle/service relationship, typically handing over such responsibilities to the dealer and, in the process, the next sale to the same customer as well. They are now increasingly recognizing the importance and financial benefits of embracing an asset life cycle relationship with the customer.

- **Medium and Heavy Duty:** MD-HD trucks are the backbone of the logistics sector, which is grappling with extreme competitiveness and continued consolidation. As cost-based competition intensifies and as the levels of sophistication in freight management increase, SRM will be critical to strengthening cost and operational efficiencies in fleet



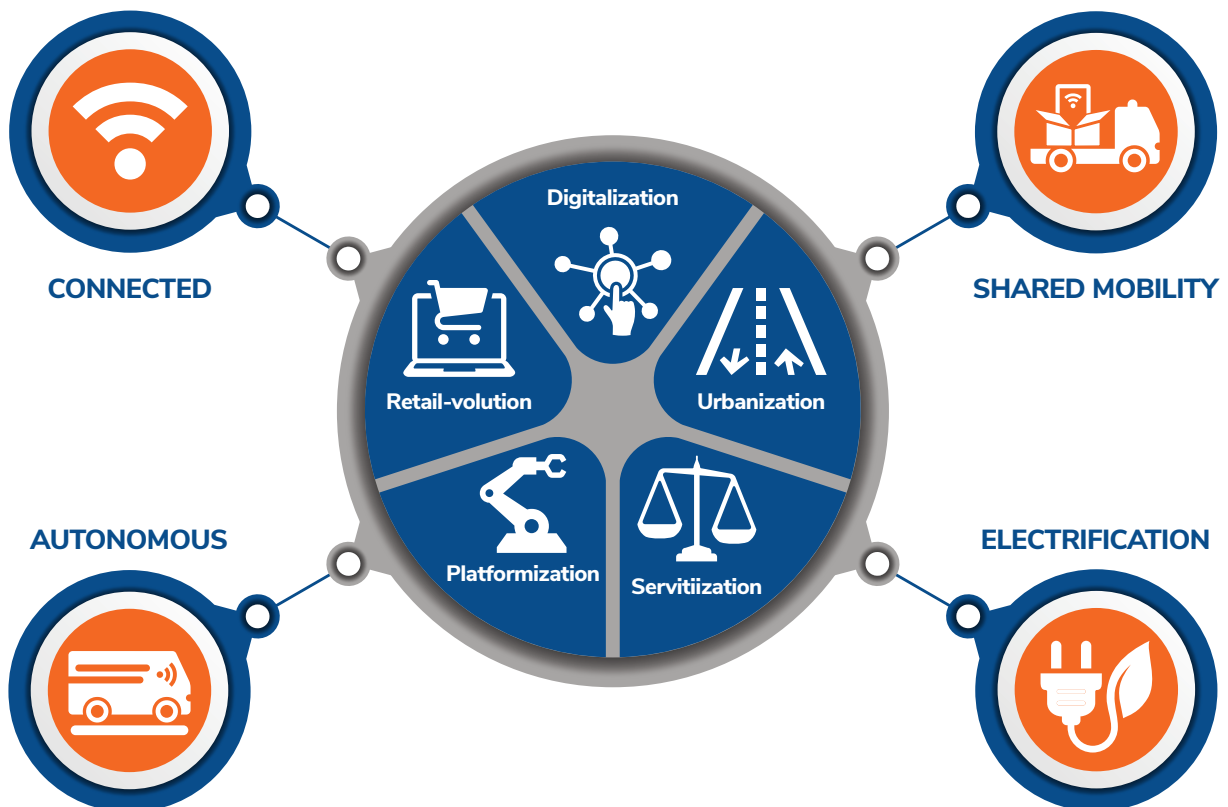
- through visibility into the service process and insights into the asset life cycle performance; providing a definite competitive advantage, and already substantiated by SRM's adoption by Volvo, Mack, Kenworth, Peterbilt, Isuzu, and Hino s through visibility into the service process and insights into the asset life cycle performance; providing a definite competitive advantage, and already substantiated by SRM's adoption by Volvo, Mack, Kenworth, Peterbilt, Isuzu, and Hino.
- **Off-highway equipment:** Rentals are an important part of North America's large OHW equipment market due to contractors looking to reduce fleet size and, thereby, operational costs. This, along with the emphasis on proactive maintenance and challenges related to ensuring proper documentation throughout service-critical operations in remote locations, highlight the central role of telematics and expanded SRM capabilities in effective asset management and utilization.

CHAPTER 2: IMPACT OF MEGA TRENDS ON THE BUSINESS AND OPERATING MODELS OF COMMERCIAL ASSETS

How SRM allows ease of new/shared business model adoption resulting from the impact of Mega Trends

Trends related to CASE are not unfolding in isolation but in congruence with five Mega Trends. Frost & Sullivan believes that these five transformational trends, in addition to CASE, will not only impact commercial assets but also a broad range of diverse participants. Among those who stand to be affected include OEMs, component and independent service centers, mobile service providers, and asset managers who have full or partial control of the asset. Component manufacturers for trucks, trailers, and reefers who tend to know the most about the asset—from parameters related to optimal usage and performance to specifications related to repair and maintenance—are also in line to be impacted by these trends.

MEGA TRENDS IMPACTING COMMERCIAL ASSETS



- **Digitalization:** The generation and communication of data and information is the vector supporting collaboration and analytics. Digitization used in freight brokerage affects the intensity of the use of commercial assets and even their mode of ownership. By increasing the visibility of each step of maintenance events as well as the overall service life cycle/history, SRM ensures better control and insight into asset service and extends asset availability.
- **Urbanization:** The emergence of urban logistics and same-day delivery in an environment of strengthening emission and safety regulations requires both assurance of compliance of assets, and the management of fleets with a mix of solutions. By providing rigorous, auditable maintenance records and being powertrain-agnostic—even allowing, later on, the seamless integration of bots and drones as assets—SRM is a direct enabler of the transition to urbanization.
- **Servitization:** Risk management/measurement/control and the pricing of that risk is key to servitization. In the rise of truck as a service, servitization will result in the transfer and centralization of accountability to maximize availability and also minimize total cost of usership. The complete control of asset status during maintenance and the ability to proactively act upon it between events through data analytics as provided by SRM will be a key element in supporting profitability of operations and satisfying customers.
- **Platformization:** Many OEMs in the commercial assets space have now fully embraced the concept of platforms and modules in their product development. SRM's ability to provide a shared collaborative platform to manage and control the systematic gathering of asset and service data and information will allow all parties to better exploit this commonality. As platformization paves the way for multiple partner integrations, there will be huge data and transaction exchanges happening in real time, eventually creating a pool of structured data. While an OEM-led platform's primary focus will be to glean vehicle or component-specific data to develop business intelligence, an SRM-led platform can act as a central hub providing holistic insights across partners.



As platformization paves the way for multiple partner integrations, there will be huge data and transaction exchanges happening in real time, eventually creating a pool of structured data.

- **Retail-volution:** OEMs and aftermarket players will move away from traditional distribution. Service-based offerings will become more important than the asset itself in retailing. The aggregation of services through online platforms will spur the development of services offered out of mobile units. Whether services will be performed in mega truck centers located along logistics corridors and hubs or in distributed locations, there is a need to secure and preserve a common access point to all relevant maintenance data as well as ensuring collaboration with all other relevant parties in the ecosystem to offer services such as diagnostics and prognostics, and to improve vehicle efficiency and availability.

As seen in these multiple cases, many of the success factors needed to facilitate the deployment of new shared business models and foster their adoption recurrently come back to the ability to manage and optimize a prime user service and repair experience.

It is dependent on communications, connectivity, control, and consistency. And it is realized through rich, extremely actionable information, linked to real-time status information and risk assessment, and full visibility through supportive analytics that minimize the impact of an asset service event while presenting the opportunity for further collaboration. These are the very functions that an SRM Ecosystem provides throughout the life cycle of an asset and across the multiple participants within that ecosystem.

In this CASE-ified future, SRM, in fact, positions itself ahead of the value chain as it enables the information to be controlled, offers the attributes, and governs the decision points essential to drive service events, instead of being subjected to them or reacting to them:

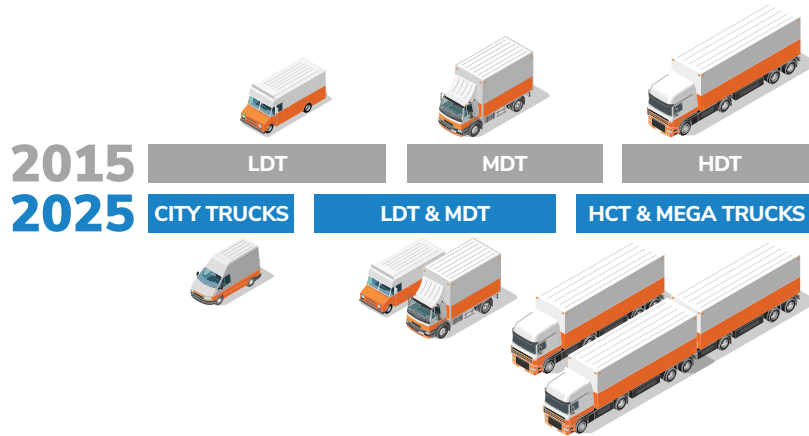
- As an example, in a pool of shared, autonomous vehicles, SRM will empower the management systems to optimally switch assets, manage locations, and coordinate service events, ranging from micro-services such as vehicle cleaning or washing to major, service-critical interventions.
- SRM serves the function of intelligent control point that enables delivery of on-demand services whether through request from a customer, OEM or other provider, or asset-automated decision.

In this future state, the natural fit of SRM is to become the nexus for the evolution of on-demand service for any participant and for any asset anywhere in the asset service ecosystem.

In that context, given the scope and adoption of Decisiv's SRM Ecosystem, one can argue that it is analogous to being the "Uber for Service" of commercial assets.

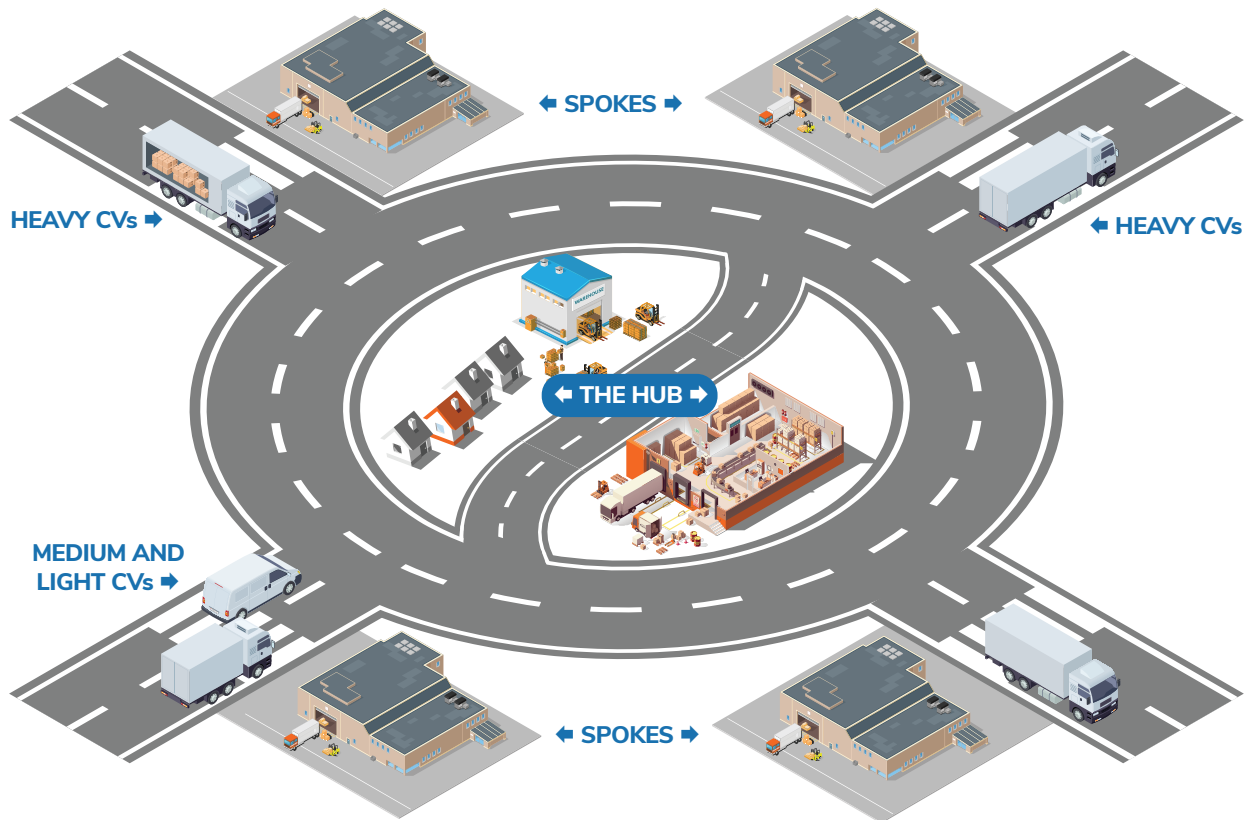


Simplified management of multi-modal commercial assets enabling improved operational efficiencies



The future of logistics involves many transformational elements that reinforce and extend the supply chain services continuum, with real-time data flow supporting the integration of multiple, complementary, and collaborative solutions designed to provide a specific edge and deliver higher efficiency in their area.

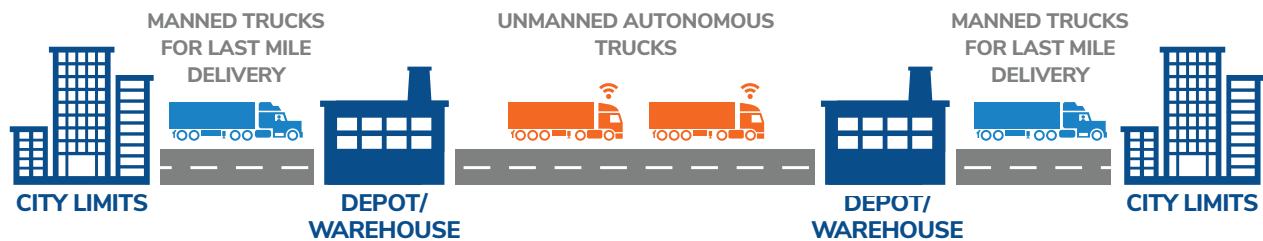
ILLUSTRATION OF MULTI-MODAL COMBINATION



Favored by these are intelligent, connected systems and optimized flows with location-based services, optimized transport corridors, dedicated hubs, and distribution networks converging into last-mile delivery, with a plurality of combinations and development of truly multi-modal commercial assets.

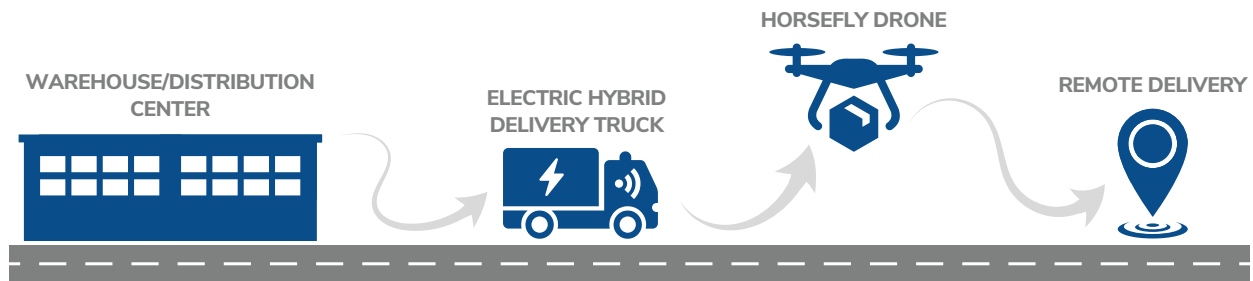
Autonomous driving in long-haul hub-to-hub transportation:

- With the advent of Level 4 autonomous driving, long-haul hub-to-hub autonomous trucking will provide an optimal operating environment for early application due to its lower complexity and controlled conditions than urban logistics. Unmanned trucks will travel back and forth from warehouses to depots while monitored by fleet employees in case of any issues. They will be in geo-fenced areas along highways, allowing for the lower-cost, quasi-absence of drivers, higher safety, and intensive (24/365) use.
- These autonomous trucks will either be taken over by a truck driver to finish the delivery within city limits or cargo will be dropped off at the depot/warehouse for urban delivery.



Future Last-mile Delivery Models

- Advances in battery technology will lead to the introduction of cost-effective fleets comprised of short-haul delivery electric trucks in the urban and semi-urban space with larger loads. Such vehicles are expected to progress at a CAGR of 28% between 2018 and 2025.
- Concurrently, models of ground or air droid delivery will facilitate same-day delivery as a norm. Delivery patterns will evolve to same-hour delivery; delivery bots will integrate navigation and sense-and-avoid technology to steer clear of pedestrians and jump over elevated ground. Due to airspace governance and safety concerns, drones could be camera-equipped with human monitoring.
- Combined delivery models—involving a drone delivery system in combination with an electric light commercial vehicle used as a launchpad, such as the Horsefly Drone tested by Workhorse in collaboration with UPS—are reported to offer sizable savings potential.
- In 2017, the US government initiated the Unmanned Aircraft System Integration Pilot Program, allowing state governments to partner with private drone companies and accelerate safe drone integration. Globally, the number of delivery drones in the eCommerce sector is expected to grow at a CAGR of 88% between 2018 and 2025.



In this future landscape, commercial assets will need to not only co-exist but constantly interact, including manned and unmanned, air or ground-based, large or small, fueled or electric, traditional or with emerging or yet-to-be-invented technologies (carbon fiber, sensors, cameras, AI, etc.). As this landscape unfolds, micro-hubs will be created to serve emerging micro-markets. This will create a demand for additional assets to deploy in case of an asset breakdown. Hence, the value of securing maximal availability/uptime and of maintaining and integrating a seamless stream of service information, including prediction and scheduling of regular preventative maintenance, in a technology-agnostic way will again distinguish Decisiv's SRM Ecosystem as a platform of choice to ensure availability and optimized performance for any type of multi-modal commercial assets.

SRM as a tool for companies to make informed decisions on future investments in commercial assets

The duality of functionalities supported by an SRM platform allows stakeholders to use the SRM analytics and reporting capabilities or integrate asset and service data into their own BI practices. In either case, stakeholders can take advantage of information for better informed and more insightful decisions on commercial assets:

- Real-time information allows pertinent decisions on the go through access to the relevant metrics and up-to-date information for making such decisions or even to automate through role-based rules setting, such as specific cases for repair authorization.
- Higher data quality, accurately accumulated throughout the life of an asset, allows ecosystem participants to analyze performance, establish trends, detect deviations, and identify quickly and accurately issues with enough depth of information to answer specific questions about asset utilization, warranty, and parts consumption.
- Cross-checking of information between assets provides additional insights on substandard performance and impacts to the cost of ownership, down to the level of clearly identifying potential outliers.

Such information can be the basis for reports, whether customized to address a particular point or automatically generated and selectively targeted at specific users/selective distribution. Whether providing insights on the assets currently under management or on the service operations themselves, the accurate knowledge of pertinent KPIs and qualitative factors serves as the basis for better-informed decisions on future investments.

CHAPTER 3: EXTENSION OF SRM INTEGRATION TO NEW SOURCES PROVIDES UNRIVALED OPPORTUNITIES

SRM to trigger modernization and monetization of commercial assets

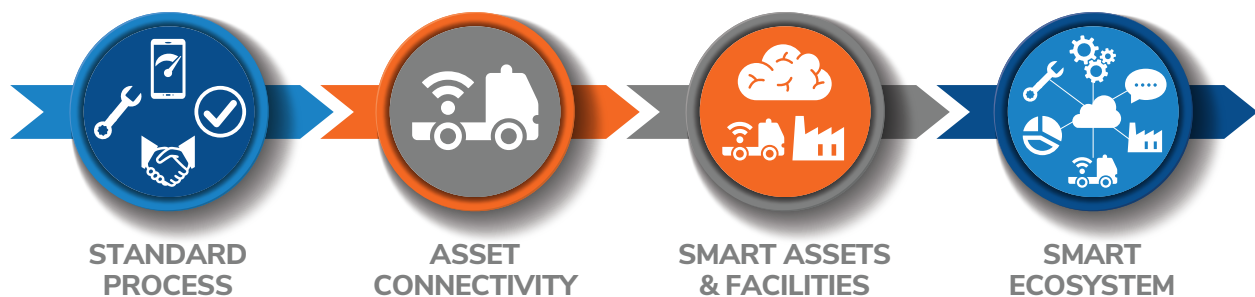
The unique service focus of SRM allows information related to the commercial assets service and critical performance history to accompany it throughout its life cycle, thereby strengthening the likelihood of service continuity across successive owners. It presents the opportunity to supplement parts and service sales with new revenue streams created by the impact of telematics, digital brokerage, digital retail, AI technology, and big data services.

As a result, new business models that integrate new monetization models into their future vision are becoming a priority for OEMs and other ecosystem participants. Decisiv's SRM platform allows the large pool of information generated by commercial assets ecosystem partners to be monetized. For instance, unstructured data from a multi-million assets repository is transformed into structured data, providing deep insights into both processes and components use over the asset's lifecycle. This could cover the spectrum from fuel, brakes and tires to lubricants and axles, among others. Simultaneously, asset service and replacement data can be used to identify unique patterns for strategic decision-making.

Strategically, this also allows OEMs, dealers and asset managers access to asset performance data to which they would otherwise not have access.

By integrating data generated at multiple points across the value chain, SRM creates value for stakeholders by empowering them to make informed decisions. Decisiv is already integrating these nodes/points within the ecosystem, helping clients to not only improve uptime from asset modernization but also boost asset monetization.

HOW SRM SUPPORTS NEW OPPORTUNITIES



SRM to empower companies to accelerate growth leveraging structured data analytics

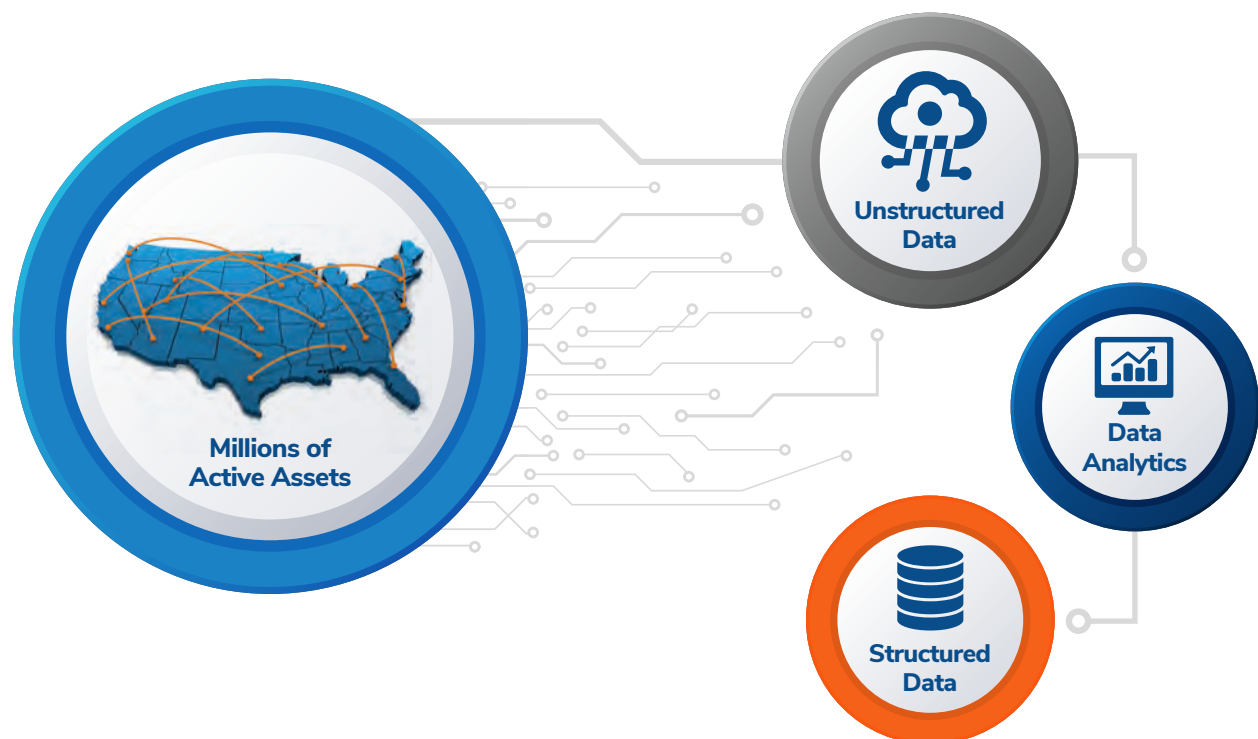
In a pre-CASE world, Decisiv's SRM platform has the ability to reduce downtime to less than half of the industry average, including triage time, diagnostics time, and fix-first-time-right-time. This allows dealers and OEMs to generate additional parts sales and associated service revenues. Decisiv's SRM platform demolishes the silos built by companies that are not designed to share data and proactively brings them together on a platform where they can "talk" to each other.

CASE convergence within the commercial assets arena is already impacting how assets will be serviced. Over time, market participants will accelerate growth by leveraging unstructured data mines to create structured data farms and data lakes. Structuring data from a multi-million assets base by partnering with ecosystem participants will develop a marketplace and custom dashboard that supports the best matches and fulfills requirements for fleets and partners while creating new business opportunities.

Decisiv's SRM data platform is flexible enough to provide additional value to its existing clients; a specialized tool helps market and sell partner products, even while providing a unique purchasing experience to fleet operators.

The SRM platform also creates a profit-sharing and revenue stream opportunity wherein component manufacturers take data generated by the SRM platform as a base and add other data obtained from telematics sources to help check assets under certain test conditions to evaluate those with zero risks, rapidly cut the size of recalls/number of assets recalled, and enable substantial savings in terms of cost, time and effort. In essence, this would help companies go beyond just modernizing or even monetizing legacy systems that have remained unchanged for a long time to actually empowering them.

HOW SRM OFFERS ITSELF AS A PLATFORM TO EMPOWER COMPANIES TO ACTION



SRM as a catalyst to allow ecosystem partners to embrace advanced diagnostics and prognostics

By applying diagnostic and prognostic techniques to asset data, companies can reveal how assets and their systems are currently performing (diagnostics) and how they are likely to perform in the future (prognostics), thereby determining whether they will perform when needed. Asset maintenance factors, such as prognostics and remote diagnostic capabilities, are increasingly gaining prominence among fleets. Prognostics are useful for predictive maintenance, product improvement, and warranty claim optimization. While powertrain-related data has been the most sought-after for prognostics in this decade, each building block of CASE—battery health monitoring, motor performance, and autonomous sensor suite health, among others—is expected to offer additional value to fleet and asset managers in the future.

However, establishing significant benefits for all value chain participants remains a challenge as not all of them can convert unstructured data into monetizable information. With electrification of trucks picking up pace, predictive maintenance and the scheduling of battery recharge and replacement will drive the adoption of prognostics in the mid-term. The advent of autonomous trucks and platooning will spur the implementation of AI- and machine learning (ML)-based prognostics in the long term.

Technological advances and longer commercial assets life cycles are underlining the importance of quality maintenance. However, the shortage of trained technicians, proprietary OEM parts, and the increasingly high costs of repair work pose challenges. Prognostics is a way of tackling these challenges. It aims to predict component failure, thus helping to reduce unscheduled breakdowns and boost overall equipment uptime. As a result, flexibility improves as dealers are better able to serve their customer base through customizable solutions, on-site visits and optimized maintenance schedules.

Legacy systems have proved a hurdle since few were built with the idea that any equipment prognosis could be carried out on them. Now, however, systems are being designed that will allow remote diagnostics and even prognostics applications. Over the next 5-10 years, explosive growth in the amount of data being collected and analyzed will transform the global commercial assets industry by creating a foundation for actionable information. Decisiv's SRM system is well-positioned to provide that foundation.

SRM IS THE CORE TO PROGNOSTICS-AS-A-SERVICE ADOPTION



CHAPTER 4: FUTURE OF SRM AND GROWTH OPPORTUNITIES FOR COMPANIES TARGETING SRM PARTNERSHIP

Decisiv's capabilities as an SRM market leader, commercial assets integrator/aggregator

The deployment of the SRM platform has enabled a level of activity not possible otherwise, dynamically integrating richness of interactions into streamlined, efficient communication networks, and creating savings for fleets and service providers. With an SRM platform, companies can handle unprecedented service scenarios and support real-time management of a large number of new service cases that frequently crop up across an ecosystem partner's network.

The future will see the cloud playing an increasingly important role even as data organization and analysis and ML techniques become more widespread. The objective here will be to achieve zero unscheduled breakdowns of the asset, minimize asset maintenance costs, fix faults even before they happen, and proactively alert dealers and asset service locations to boost customer satisfaction.

In this picture, the rise of prognostics is set to evolve from addressing key mechanical and electronic components such as powertrain and controllers, to futuristic software-based systems such as autonomy, platooning and advanced driver assistance systems (ADAS) involving smart sensors, actuators, and path-planning stack. Moreover, it will include the scheduling of battery recharge, maintenance, and replacement for the electric truck segment. The commercial assets space is increasingly becoming dependent on the cloud. As "over-the-air" (OTA) updates continue to grow in popularity, the ability to make software, firmware, and hardware updates on the go could be seamlessly integrated into the asset service process.

In the trucking business, the ability to quickly fix an error in the electronic control modules through software and firmware SOTA/FOTA updates could save huge sums of money as it is directly linked to the vehicle uptime. Instead of mobilizing an entire fleet to the nearest dealer or a brand-authorized service center for upgrading to the newest software, the trucks could be conveniently updated in the fleet depots or a parking lot while they are not on duty. A typical OTA update can quickly fix some false positives and improve maps through reprogramming to help the truck perform more efficiently. This will bring a host of benefits to the entire ecosystem. While the primary focus will be to maximize vehicle uptime and minimize the impact to the driver, dealers can better prioritize their plan of action based on criticalities of customer events, which will help smooth the transition from a reactive service approach to a proactive service approach.



The future will see the cloud playing an increasingly important role even as data organization and analysis and ML techniques become more widespread.



An SRM platform will also help clients strengthen competencies in information management and communications, enabling increased uptime and productivity. For example, in the case of shared business models—lease and rental fleets, among them—Decisiv’s SRM platform helps to more efficiently manage asset inspections and maintenance, including customized inspections, at the end of the sharing period. The ability to automatically file information pertaining to repairs, including pricing/warranty details, gleaned during inspections yields quantifiable benefits in terms of significant time and cost savings, more accurate information sharing, higher productivity, and improved uptime.

In such an environment of thriving diversity of assets and solutions, prevalence of data-driven decision processes, and proliferation in the number and involvement of parties contributing to the efficiency of both service processes and management of the assets, the capabilities of the SRM platform make it uniquely positioned to secure seamless integration and aggregation of activities, events, and participants to the ecosystem, plus support further evolution and enhancement of asset reliability, availability, and performance.

Quantifiable benefits from SRM adoption

While such capabilities are extremely attractive, it remains that one of SRM's fundamental, indisputable values is the hard, fact-based, and thus quantifiable nature of the benefits that it delivers.

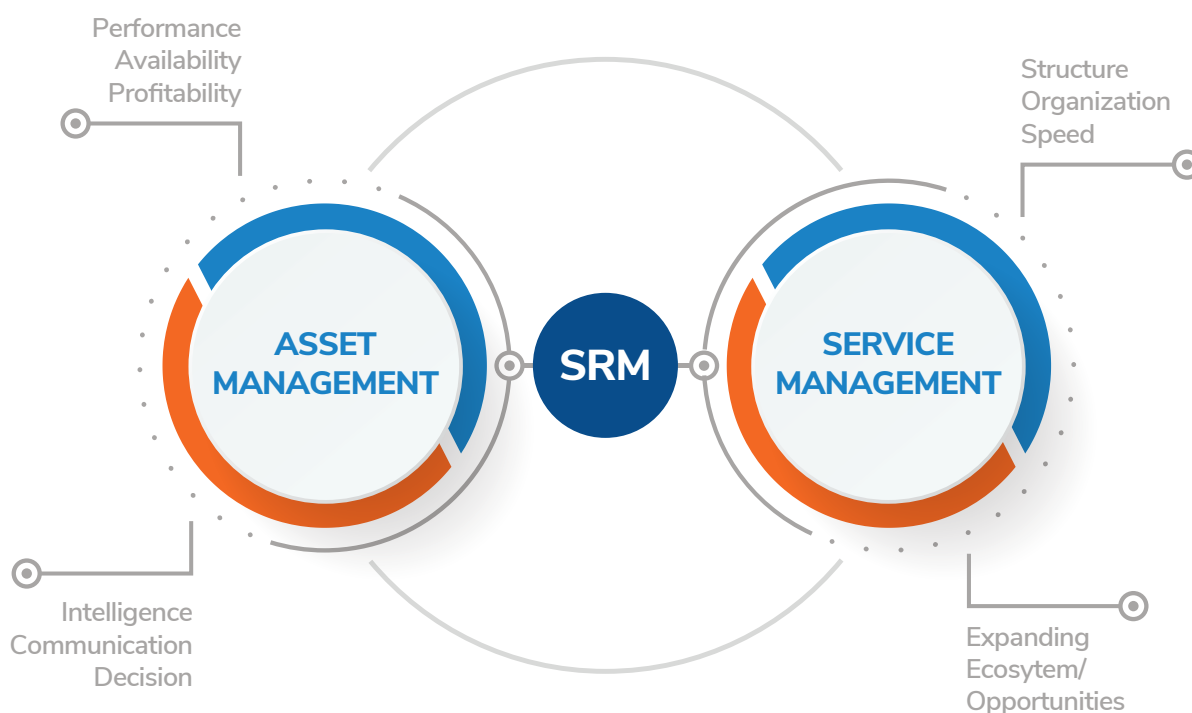
It is now well-known that managing service events efficiently through SRM technology leads to an almost unlimited list of savings of complementary origins, whether linked to asset uptime, technician productivity, comprehensive documentation, one-time repairs, proper warranty management, expansion of billable shop hours, or parts sales—with benefits shared by fleets and service providers.

In fact, aside from important, yet softer, elements such as enhanced customer satisfaction, retention, and consistency of service delivery across a whole network, the objectively quantifiable benefits of the 13.5 million service events that Decisiv's SRM platform has supported to date have already generated savings in excess of \$2.5 billion.

As visibility into asset performance and availability moves from valuable to indispensable to operate a business, the level of control and the resourcefulness brought by the structured expansion of the SRM Ecosystem will continue to support the benefits of effective decision-making, particularly as companies continue to collaborate upstream, midstream and even downstream across the value chain, including across asset manufacturing, selling, and servicing.

Already, mainstream players, including OEMs, dealers, fleet managers and, increasingly, sub-stream players like upfitters, qualified asset/vehicle modifiers, and retrofitters, are invested in understanding asset uptime and efficiency—a timely and strategic move on their part to reap the tangible rewards of SRM and join the billion-dollar inner circle.

SRM'S VIRTUOUS / INNER CIRCLE



How Decisiv can be an ideal partner to legacy companies and new entrants

SRM offers capabilities that extend beyond the sphere of traditional players like OEMs, dealerships and fleet managers to embrace new entrants in the space.

The broad market adoption of SRM by the majority of the North American heavy commercial OEMs has established clear market leadership. Given the scope and depth of the SRM Ecosystem, Decisiv is well-positioned to extend the ecosystem to embrace the range of major component suppliers, LCV and OHW OEs, aftermarket OEMs, service providers, asset owners, as well as the wave of new entrants that emerging CASE technologies are already generating.

Leveraging Decisiv's SRM technology and its value in a broad, expanding asset service ecosystem can help OEMs boost dealership performance and help dealerships access relevant information—including service history, data related to recalls/warranty, and standard repair times (SRT)—at the right time during a service event, supporting consistent service quality standards. It can also improve the overall customer experience; the SRM technology and ecosystem will allow dealers to digitally connect with and update their customers during the service/repair process. Such transparency and rationalized service/repair processes will support customers in effective decision-making and in maximizing their returns on investment. They will also benefit from the integration of the technology that the extended asset service functionality offers through the expanding list of ecosystem partners.

Second, the integration of Decisiv's SRM will help dealer and independent service providers widen their customer base, enabling fleets and service providers that use Decisiv's SRM to access the entire range of products and solutions.

Customers will gain improved visibility at each stage of service activity since all asset service and diagnostic information related to a service event case is incorporated into the SRM platform. This will support overall efficiencies and greater control across the breadth of operations.

Fleet management is yet another area where Decisiv's SRM platform can generate competitive advantages. The integration of Decisiv's SRM platform with enterprise fleet management and maintenance management systems allows fleet managers to better manage their assets, particularly when using external service centers. In addition to allowing fleet managers to better plan for and schedule preventative maintenance, SRM also allows fleet managers to share critical asset-related information—including service history, warranty status, and diagnostics data, among other things—with external service providers in the event of an unscheduled breakdown. As a result, both internal and external service centers are able to rapidly and efficiently perform asset repair and maintenance. SRM integration also drives enhanced collaboration and communication across the service supply chain. In this case, fleet managers benefit from higher warranty recovery, reduced support costs, improved regulatory compliance, increased uptime, consistent service delivery and stronger customer relationships as a result of proactive communication.

And, finally, the continued flow of new participants entering the SRM service ecosystem—from established Tier-1 suppliers, aftermarket companies, and innovative service startups—will keep providing a fertile, thriving ground of enriching opportunities of an ever-expanding system.

“SOLAR” SRM-CENTRIC ECOSYSTEM



Importantly, Decisiv's SRM Ecosystem will allow manufacturers, including OEMs and major component suppliers, to be agile in terms of effectively scaling in tandem with evolving technology and throughout their dealer networks. In other words, a partnership with Decisiv yields quantifiable benefits in terms of improved performance, higher productivity and streamlined processes—all while providing the scalability and future-proofing that continually challenges heavy iron manufacturers.

Today, the value in this well-designed ecosystem built on a collaborative platform offers the assurance of both more intelligent, streamlined asset service processes and a far more effective foundation for intelligent asset management and utilization.

Going forward, SRM sets a foundation that will enable companies to embrace and respond to the evolving new service process and requirements that will be driven by rapidly emerging CASE technologies.

Decisiv's SRM Ecosystem has already clearly established itself as the standard for the way that every commercial asset is managed and serviced.

CONCLUSION

Through its developments and continued evolution to offer new functionalities over the years, SRM has delivered dramatic improvements in the service management process that have benefited a growing number of participants and partners in the commercial assets service ecosystem, including reducing downtime, boosting asset availability, enhancing utilization, reducing TCO, and improving user experience, satisfaction, and loyalty.

Inherently designed for flexibility and scalability and thoroughly validated by its adoption by major players, SRM is uniquely positioned to drive the further integration and onboarding of participants and newcomers in an ever-growing, opportunity-rich asset service management ecosystem ideally predisposed to support the rapid and inevitable transformation of the way that commercial assets are used, owned, and serviced.

The abilities of SRM to manage the complete end-to-end service and repair process across the entire asset service life cycle provides all participants with unrivaled enhancement in their ability to manage asset performance and utilization of the assets and further accelerates their participation through efficient, rich, and intelligent interaction and integration.

The SRM Ecosystem is effectively changing the way that commercial assets are serviced, managed and even owned. As Decisiv's SRM Ecosystem expands, so, too, does the ability to connect to new and emerging sources of asset intelligence for the first time and, going forward, manufacturers, service providers, and asset owners can have full insight into asset performance, asset utilization, and customer experiences from beginning to end. This will only become more pivotal to the success of modern fleets and service providers as the larger market trends toward connectivity and embraces shared models, reinforcing the need and value of a comprehensive asset service ecosystem. In this regard, Decisiv's SRM Ecosystem is clearly leading the market.



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