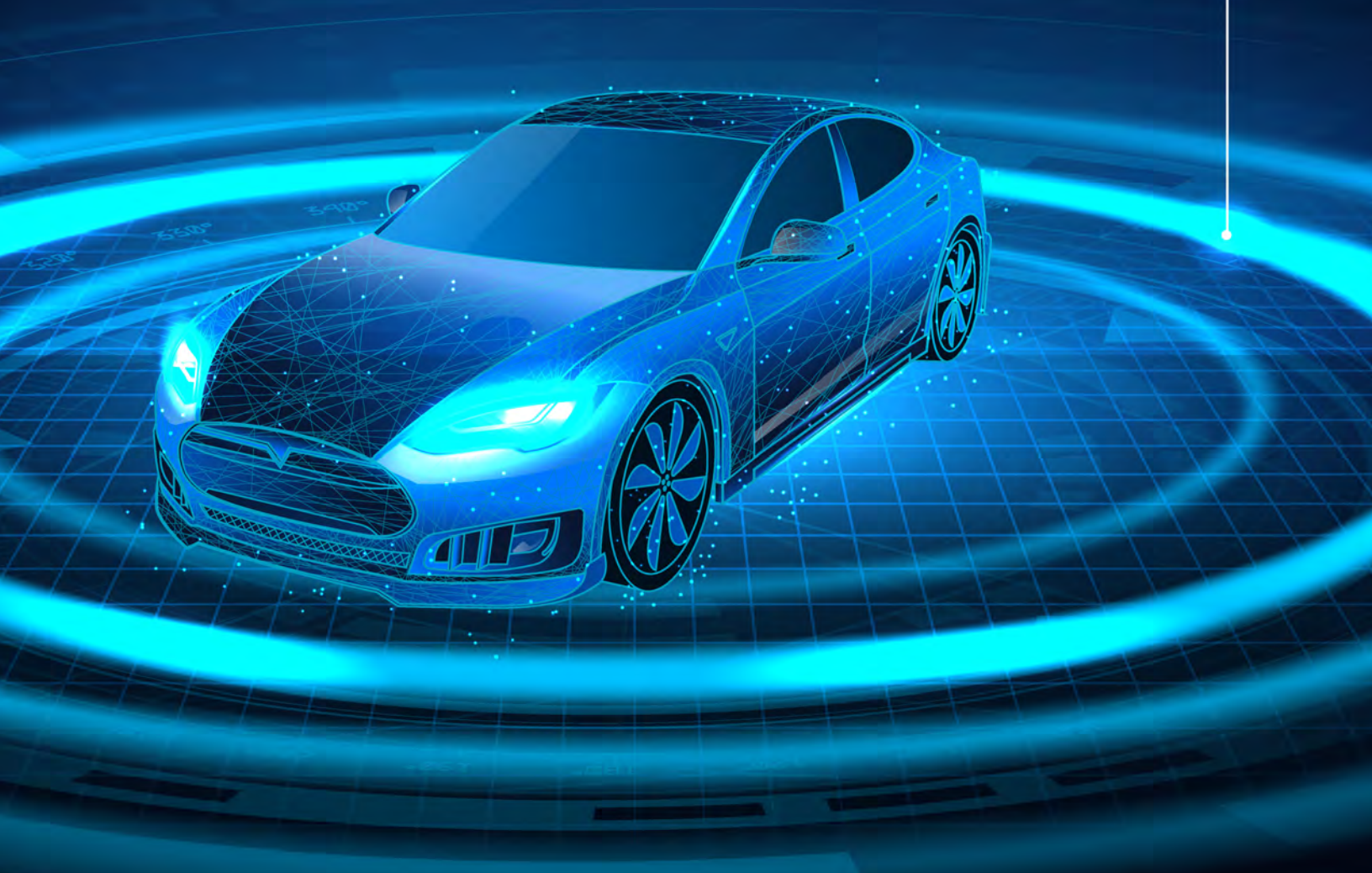


How Digital Networks Will Drive the Vehicle Subscription Model



By Joe Bellini, EVP Product Management & Marketing | One Network Enterprises





Automotive subscriptions will evolve to be a significant, if not primary, mode of future vehicle ownership. In a [Bain & Company survey](#) of 1,500 automotive consumers last year, on average more than 25% of consumers said they were likely or very likely to consider getting a vehicle subscription. Tesla is already [rolling out a subscription service](#), and they won't be the last.

BENEFITS FOR AUTOMOTIVE COMPANIES

Large automotive OEM's find the sector attractive given it would protect market share rather than have it leak to other channels such as rental companies. The sector would also drive additional demand and market access for both used and electric vehicles. And from an after sales and service perspective, a subscription would keep vehicles in network. Tangential benefits would include insurance revenue streams as well as accelerating the direct-to-consumer sales channel.

The requirement for a subscription model is much more than an extension of its closest comparison, which would be the current lease-based offerings. The successful network will provide a seamless experience across multiple brands, features, bundles, and services including convenience-based offerings such as subscription extensions, vehicle detailing or multi-network charging station access.

BENEFITS FOR CONSUMERS

The convenience of not having to deal with maintenance and repairs, along with not having to deal with the hassles of insurance and registration, are key to the brand experience. The brand itself will be judged by the ability to deliver based on desired configuration in days/weeks similar to consumers judging brands based on home delivery speed and quality.

THE SUBSCRIPTION MODEL'S IMPACT ON SUPPLY CHAINS

Today's automotive supply chains are struggling with less demanding model. They will almost certainly fail in a much more real-time, high-expectations, consumer-driven model.

A real time end-to-end network is the only way to deliver on these expectations with efficiency and effectiveness. Vehicle subscription business models must break down silo-based thinking in order to be successful.

Major automotive OEMs are already in the process of rethinking their supply chain networks on this basis given the systemic increases in demand, supply, and lead time variability on a global basis. This is also driven by the need to provide resilience and continuity when unexpected events occur both short term and long term.

The need to optimize the planning and execution of inbound supply, logistics, distribution, and downstream omnichannel fulfillment has driven the automotive sector toward supply chain networks, which enable full visibility and actionability across trading partners.

One Network is currently working with a number of automotive OEM's, major tier 1 suppliers, and a host of tier 2 suppliers, to deploy these core capabilities across mainstream vehicle planning, production, delivery, and aftermarket support.

Due to the ease of onboarding and integrating information into the network, network capabilities can be made available to the expanded set of partners required to deliver on an automotive subscription service. This enhances the service flow to include a seamless order experience from configuration to delivery, financing, insurance, maintenance, parts and services.

Vehicle subscriptions enable consumers to pay a flat monthly fee which gives them access to a vehicle that they can use as per their contract. Flexibility will be a key capability, basically allowing a customer to terminate, or upgrade/downgrade to a different vehicle category or subscription contract that better fits with their needs. Essentially this combines the advantages of leasing or buying along with some that are great features of Uber-type services where you can get from “A to B” without the financial burdens of owning your own car.

A trusted subscription service would span from front-end professional consultation to determine individual consumer need, to structuring the right subscription bundle to deliver on that need, to all asset related operations and logistics services to deliver on flawless operations, customer delight and a sense of well-being and safety. This all must be backed up by total transparency to all subscription cost components which gives the consumer the desired level of spend control related to the subscription and its related services.

REALIZING THE CONSUMER-DRIVEN VEHICLE-AS-A-SERVICE MODEL

The growing scale of the opportunity isn't surprising given consumers will always show a propensity for any service that makes their lives easier. As we have seen across the board with Industry 4.0, the ability to personalize offerings to the end-consumer based on their constantly changing needs and demands is core to success.

To date the market has been more of a one-off asset sale which now must evolve to a vehicle-as-a-service model. Each capability from a consumer perspective has operated in its own silo from the purchasing to financing to maintenance to detailing to vehicle life cycle rollover and renewal. From a business perspective the model must deliver on the highest levels of asset utilization while generating target revenues and operating margins for the subscription provider.

A digitized supply chain network which can represent all assets as well as all features and data associated with the vehicle will be critical.

This will enable every vehicle to be represented in the network, to be tracked on a real-time basis, linked to the subscriber, and billed automatically. The vehicle can be monitored and supported with IoT data, which can trigger the appropriate responses as conditions change. This can include emergency support, maintenance and repair (with associated logistics for pick-up and delivery based on subscriber preference). A similar service can be provided in the event of a recall, with alerts, support and the delivery of a substitute vehicle as needed.

Key to the required capability will be the ability to provide a completely seamless user experience for subscription life cycle usage, renewal, extension, upgrade or downgrade across any and all assets and feature based offerings including any related services.





The subscription provider must break down the barriers which reflect the current business silos designed to support the asset purchase model and will become the future orchestrator across the many partners required to deliver a market leading subscription service. This orchestration must extend beyond the typical services done on the vehicle itself, to the services for the vehicle such as detailing, pick up, delivery, charging network access, etc.

One Network deploys a patented permissions-based set of orchestration roles across all trading partners in a business network. The current silo-based asset purchase model can be transformed using a set of orchestration roles across the vehicle subscription network of customers, partners, assets and services. This powerful capability will enable an entirely new set of skills and processes which is required to compete in this market.

Given the significant shifts in the business model, the new subscription model needs to operate many new dimensions. Current models either promote ownership with a purchase or lease period, or promote zero ownership such as rentals, car-sharing, or taxi models. While this by itself is a huge shift, the required services to enable a market leading subscription will be new territory given that neither the ownership model or non-ownership model bundled a robust service portfolio as part of the offering.

Delivering a vehicle subscription offering on a fully digitized supply chain network will enable a completely differentiated offering. The digital experience will span from the original order process across all operating and financial services. It will be intuitive, cognitive, and completely seamless as compared to today's silo-based experience.

THE NETWORK MUST BE REAL TIME AND HYPER RESPONSIVE

While business has been governed by contracts since companies were established, the contracts in vehicle subscription will require flexibility given the changing needs of consumers. Adaptive is the name of the game in today's market, and even more so in a vehicle subscription environment. The supply chain network must be designed understanding that the subscription must adapt in near real time and those requirements delivered against by the trading partner network. The customer relationship is the business asset, not the subscription contract.

The core of the subscription business model is operations and logistics along with asset sourcing and risk management. The front end requires a strong digitized forecasting, sales and configuration process and it all needs to ride against a solid financial infrastructure embedded throughout the network.

All services related to the subscription business process need to be on a real-time, single version of the truth that spans the full vehicle subscription life cycle. Without this capability the model will be stuck in a point-to-point, silo world, using old ERP hub and spoke or message bus type systems, providing less choice to consumers, running higher costs, and ultimately risk failing to deliver.

THE DIGITAL SUPPLY CHAIN NETWORK™ IS ARCHITECTED FOR REAL-TIME END-TO-END FLOWS

The ONE Digital Supply Chain Network™ is the right infrastructure for a winning business model. It runs in near real time, with item-level transparency, and with a hub-to-hub architecture that supports all partners and functions in a vehicle subscription network. With asset utilization and customer service front and center, dynamic operations are the key. This enables real time subscription pricing based on asset utilization objectives, dynamic workflow enablement to resolve for all operations and logistics issues on a real-time basis, and the network enables it across all orchestrator and operating roles in the network.

Large automotive OEMs are in danger of being outflanked by private equity backed startups who are leveraging intelligent digital platforms. Clearly, the advantage should be with the OEM's given their asset and service bandwidth. The problem is their silo-based systems approach which has been painful in delivering effectively and efficiently for the asset purchase market, and will be woefully inadequate in enabling the subscription business model.

One Network has the ability to fully represent all components of a subscription business, digitize the asset and service environment, and apply intelligent demand, supply, sourcing, and logistics. The platform is flexible and extensible, serving as a network of networks, and can easily incorporate extended subscriptions such as those for EV charging networks.

With the network, the OEMs would be able to track all vehicles by VIN, and thus be able to coordinate all associated services across the network including applying advanced analytics for IoT input and usage-based metrics. Problems anywhere in the network can be sensed immediately, and real-time prescriptive analytics applied to resolve all issues. The network would gain a vast operating knowledge of the subscription universe, and then leveraged throughout the S&OP process, including driving efficiencies through inbound supply and aftermarket parts and services.

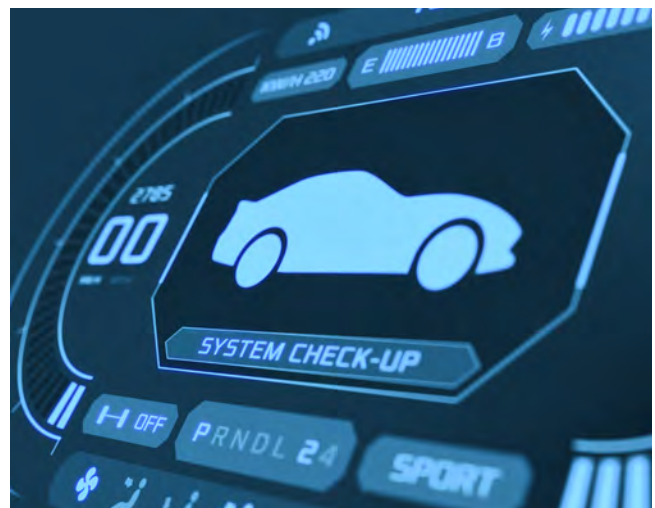
The subscription model requires high asset utilization to drive target levels of revenue and margin. On the cost side, keeping the assets in service both for the current subscriber as well as being available for the subsequent subscriber is critical. Internal combustion, hybrid and electric vehicles will all be made available for subscription. Each of these will

have different levels of maintenance and repair cycles, with electric being the best profile given there are approximately 20 moving parts in the powertrain as compared to over 200 in an internal combustion engine. The hybrids will generally pattern similar to the internal combustion engines. Overall electric vehicles will require less maintenance given fewer moving parts to maintain/repair and fewer fluids to change.

Currently the maintenance/repair/parts cycle runs in separate silos from the other services required to run a subscription business, as described above. However, as part of a hub-to-hub network, this cycle can interoperate in real time with all other business cycles, thus effectively driving asset utilization to its highest potential level.

Given the richness of the available data which will be tracked by VIN, predictive analytics can be leveraged to both reduce vehicle downtime as well as prevent downtime. Patterns will emerge across variables related to vehicles, drivers, conditions, weather, usage, and many external factors, which will drive predictive accuracy higher over time, and thus continue to improve vehicle availability and usage.

As a hub on the ONE vehicle subscription network, the maintenance, repair, and parts suppliers will have access to real-time information and reliable predictions, so that they can provide the high service levels required to generate high availability, while also controlling costs. The network will predict need based on keeping the assets in service, so that parts availability is increased while downtime is minimized. Preventive, recall, maintenance, break/fix, and replacement vehicle services, all require coordination across multiple hubs in the vehicle subscription ecosystem.



The network would require seamless planning and execution, predictive analytics, and VIN-level tracking, across a wide variable set, as well as a real-time sense-and-respond capability for optimal asset leverage.

Given the fewer moving parts in electric vehicles, the network would have the potential to create near perfect asset utilization and leverage such EVs. Further, with the ability to extend the network services to include both owned and partner charging station networks, the subscription service would be completely holistic for EV's.

Using the VIN as the unique identifier for the vehicle, the network can track its movement, monitor variables related to operations through IoT, predict issues, and then address those issues. Further, the last 8 digits of the VIN can be exploded to generate parts requirements necessary to maintain high utilization and keep the vehicle in service. Information related to the VIN such as event dates, ownership, maintenance history, and recall notifications can be tracked and reported with operating parameters displayed to the subscriber.

The predictive and real-time capabilities of the network will reduce much of the traditional parts inventory and vehicle down-time costs seen in similar fleet type operations. Additional attribute data can be attached to the VIN such as availability, contract dates, delivery tracking, routine maintenance, cleaning, and detailing.

ENABLING CONSUMER CHOICE & EFFICIENCY REQUIRES FULL DIGITIZATION

Like any business, the model needs to provide a service that generates an acceptable margin. Digitized supply chain networks have been used successfully by major corporations for many years to increase offering flexibility while simultaneously lowering costs. For vehicle subscriptions, flexibility would include frequent exchanges and more configuration options. Typically, this level of flexibility would drive up costs due to the limitations of a traditional supply chain, given the need to carry and configure additional vehicles in a way that might only appeal to a smaller subset of customers. **One Network** has proven that flexibility can be provided along with the ability to enable network-wide services, all while lowering costs as compared to tradition models. Offering vehicles as a subscription will require a differentiated technology approach to be successful. Given the required flexibility, the asset management, the associated services, and the need to break down existing process and technology silos, there really is no choice but to move to a real-time, digitized supply chain network.

In summary, the subscription opportunity is tremendous with industry forecasts estimated at over \$50B in annualized financing opportunities over the next few years. Success will be dictated by providing the ultimate consumer brand experience, combined with the highest service levels. These in turn will require maximum business flexibility, efficiency, and adaptability that only a fully digitized supply chain network can deliver.



ABOUT THE AUTHOR

Joe Bellini is certified in AI/ML from MIT Sloan, is an alumnus of Harvard Business School, and holds degrees in Applied Mathematics and Statistics and Mechanical Engineering. He is a past award winner in the Mathematics Olympiad competition, authored the patent for Extended Enterprise Planning across a Supply Chain, and has been listed by Supply and Demand Chain Executive Magazine as a Pro to Know for the past two years.



ABOUT ONE NETWORK

One Network is the leader in intelligent control towers for autonomous supply chain management. From inbound supply to outbound order fulfilment and logistics, this multi-tier, multiparty digital platform helps optimize and automate planning and execution across the entire supply network and every trading partner. Powered by NEO, **One Network**'s machine learning and intelligent agent technology, real time predictive and prescriptive analytics enable industry-leading performance for the highest service levels and product quality at the lowest possible cost. It's the industry's only solution with a fully integrated data model from the consumer to suppliers and all logistics partners, providing a network-wide, real-time single version of the truth. Leading global organizations have joined **One Network**, transforming industries like Retail, Food Service, Consumer Goods, Automotive, Healthcare, Public Sector, Telecom, Defense, and Logistics. Headquartered in Dallas, **One Network** has offices across the Americas, Europe, and APAC. For more information, please visit www.onenetwork.com.



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