WILL DIGITAL SPARK A NEW AUTOMOTIVE INDUSTRY?

The automotive industry has been at the forefront of technological innovation for years, but the incumbents are facing increasing competition. Powerful digital players with their deep pockets and proven business models are gaining traction. While new digital services and mobility schemes are evolving quickly, automobiles are becoming more and more commoditized, causing major disruption at companies that have been in business for a century or longer. Core processes need to become more agile and better geared toward serving customers' needs, which will be a challenge in the notoriously slow-changing auto sector.

Now is the time to act, because the decisions being made today will determined tomorrow's winners. Laggards in the automotive sector risk facing the same fate as failed companies in other digitally disrupted industries such as telecommunications, media, and consumer electronics.

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~65%

WORLDWIDE SPEND FOR
PERSONAL TRANSPORTATION
FROM VEHICLE SALES AND
RELATED SERVICES BY 2040

The rapid declines of Kodak and Nokia are proof of how dramatically digitalization can change entire industries. These are just two former market leaders that were turned into minor players as their products became obsolete after a digital revolution.

Today, traditional automotive manufacturers, many of which have been in business for more than 100 years, are experiencing unprecedented disruption in their business models. Innovation around the vehicle itself is slowing, making what was once the core product a commodity. Attention-grabbing breakthroughs are coming from digital solutions introduced by new players that are determined to shake up the conventional thinking of the entire automotive industry. These companies are offering solutions to customer hassles that go beyond what automakers could provide on their own, such as ways to navigate around congested roads or directions to a formerly elusive parking spot in a busy city. These new entrants are not just small startups capitalizing on a good idea. They are often giants with market capitalizations that are more than 10 times higher than the typical automaker's.

Companies such as Google, Apple, and Baidu can leverage their funds to penetrate global markets right from the start. They also can use their wealth and expertise to created vehicles with innovative, disruptive features that are capable of competing directly against established automotive brands.

THE STARTUPS AND NEW BUSINESS MODEL UNIVERSE

The coming years are expected to be the most disruptive in automotive history. Industry fundamentals will be challenged as

new ideas emerge for how vehicles will be powered, designed, built, and used. The diversity of the new digital players and their offerings means that traditional automotive businesses are at risk of being attacked anywhere along their value chains. New entrants have pushed into specific modules of a car. This usually has resulted in a shift from automaker-controlled, embedded systems to mobile devices.
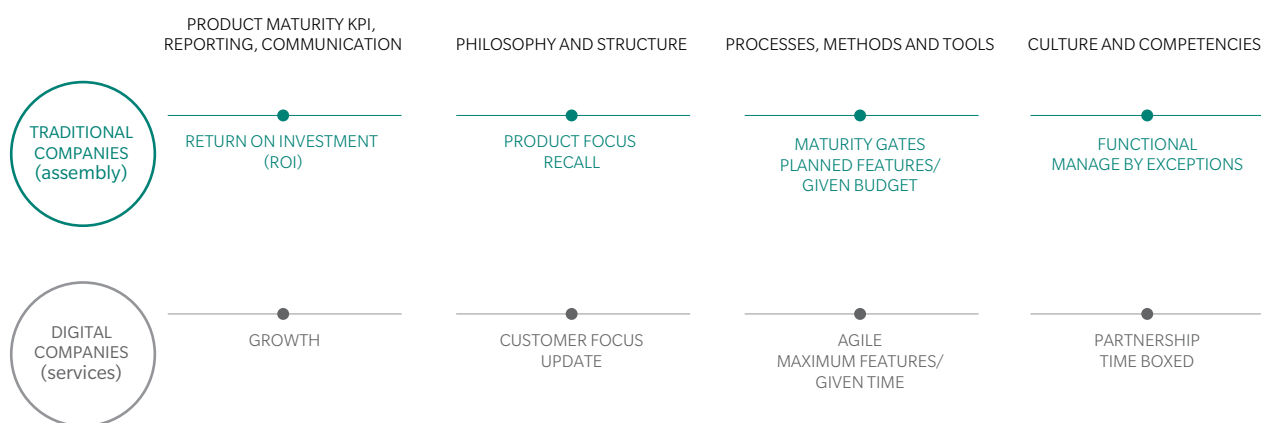
Connected and self-driving car projects unveiled by tech companies from Silicon Valley such as Apple and Google, as well as Chinese players such as Tencent and Baidu, are proof of a looming collision between consumer technology, cloud computing, and automotive players. Downstream parts of the automotive value chain also are under attack. TrueCar, mobile. de, RepairPal, Auxmoney, and dozens of others have successfully captured a share of the profits automotive manufacturers used to have to themselves via their affiliated dealers and financial services branches in areas such as car retailing, parts, services, and financial products.

Mobility services such as car-sharing and ride-hailing are not the exclusive domain of car manufacturers, leaving vast room for companies such as Zipcar and Uber to grow. In addition, the accelerated deployment of connected cars has put in-vehicle services startups such as Spotify and GottaPark in position to rapidly lure customers with their offers for music entertainment and parking, respectively.

Future automotive value pools will migrate toward digital offerings. Oliver Wyman predicts that by 2040 vehicle sales and vehicle-related services will only account for about 65 percent of the worldwide spend on personal transportation, down from 80

TRADITIONAL ASSEMBLY VS. DIGITAL COMPANIES

Automotive OEMs are facing fundamentally different metrics when dealing with digital services

	PRODUCT MATURITY KPI, REPORTING, COMMUNICATION	PHILOSOPHY AND STRUCTURE	PROCESSES, METHODS AND TOOLS	CULTURE AND COMPETENCIES
TRADITIONAL COMPANIES (assembly)	RETURN ON INVESTMENT (ROI)	PRODUCT FOCUS RECALL	MATURITY GATES PLANNED FEATURES/ GIVEN BUDGET	FUNCTIONAL MANAGE BY EXCEPTIONS
DIGITAL COMPANIES (services)	GROWTH	CUSTOMER FOCUS UPDATE	AGILE MAXIMUM FEATURES/ GIVEN TIME	PARTNERSHIP TIME BOXED

Source: Oliver Wyman analysis

to 90 percent in 2014. While this change might appear to be far off and nobody can predict exactly what levels of income will be generated from the different value pools, Oliver Wyman believes that carmakers and suppliers need to acknowledge that the automotive industry's software revolution has begun. They need to prepare for some dramatic changes.

A DIGITAL AUTOMOTIVE VALUE CHAIN

New digital technologies are already changing the automotive landscape, which will evolve into a more open, multi-layered ecosystem. One of the major battlefields will emerge around the customer interface. New service and content providers are in position to rapidly launch new business models around mobility, infotainment, productivity, and functionality offerings that go well beyond the scope of traditional car manufacturers. Data aggregation and analytics are key to forecasting future demand. They also will play a big role in filling distribution channels in real time via online configurations by customers, actual sales trends, up-to-the-minute quality data, and discussions in online forums. Sales and marketing will leverage online channels more than ever before.

The traditional automaker-centered value chain will break up as new networks and partnership models evolve. Digital software platforms will be crucial because they will contain key data on the end customer that can be monetized by making offers that match the person's purchasing habits, driving styles, and travel needs. As value pools migrate toward the service-oriented customer interface, the vehicle "hardware" is becoming more and more a commodity. Hence, standardization and cost reduction through economies of scale and high utilization are crucial to win the hardware game.

Integrated data flows will enable flexible production as well as efficient mass customization, bringing down costs and improving plant utilization. Also R&D costs will fall, as expensive prototyping is simplified by 3-D printing solutions and the increased use of simulation. Real-time simulation and feedback loops between the shop floor and engineering will ensure a seamless production flow, which will speed up product launches. Also, automakers will be able to improve purchasing operations by leveraging real-time inventory monitoring.

The digitalization of the industry will fundamentally change the way traditional automotive value chains operate. It will also significantly change organizations, as well as the qualifications of the people they employ. New roles will emerge, and a significant number of traditional positions will disappear.
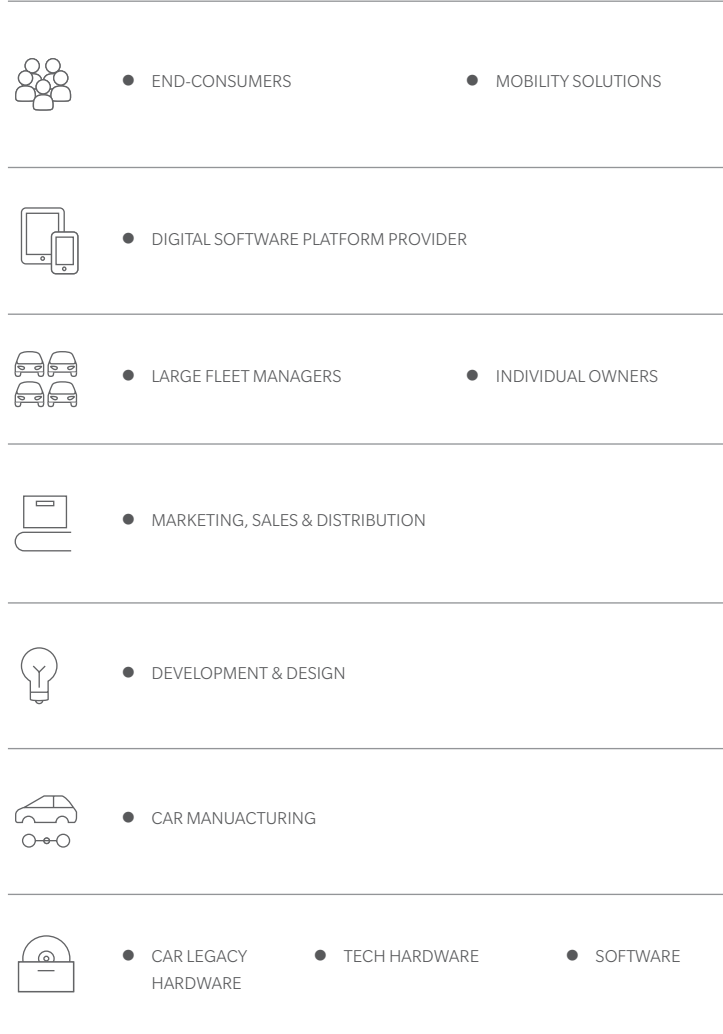
A NEW STRUCTURE OF THE AUTOMOTIVE INDUSTRY

As the line between car manufacturers and service providers gradually disappears, a new and competitive battlefield will emerge. New digital players will try to gain access to customers by moving into a territory that used to be owned by the vehicle manufacturer. New and established players will have to decide whether to fight for the customer or try another tact. While numerous possible approaches exist, there are five business models that have been identified to address these new playing fields.
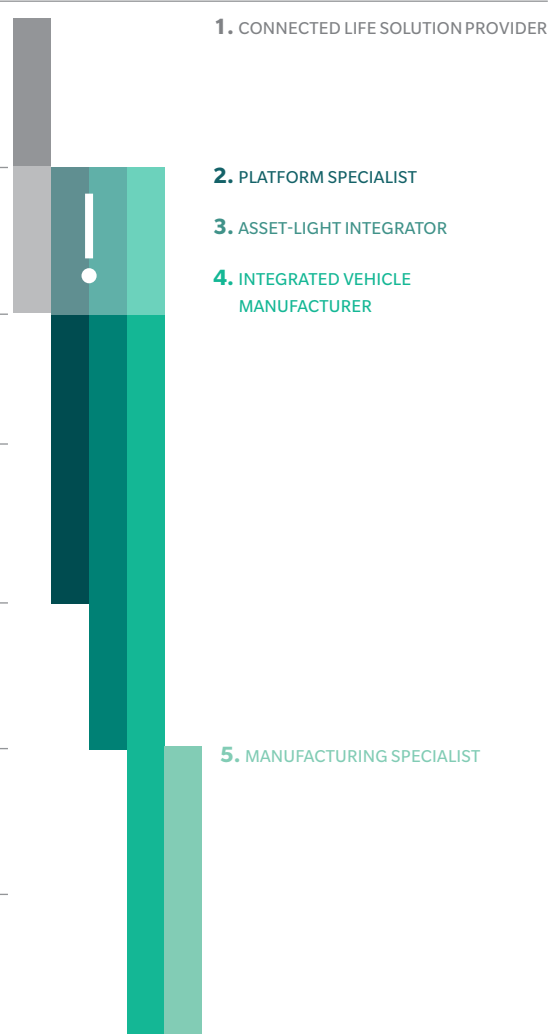
DISRUPTIVE REALIGNMENT
OF THE INDUSTRY STRUCTURE

NEW BUSINESS MODELS EVOLVING
IN THE AUTOMOTIVE INDUSTRY

- END-CONSUMERS
- MOBILITY SOLUTIONS

- DIGITAL SOFTWARE PLATFORM PROVIDER

- LARGE FLEET MANAGERS
- INDIVIDUAL OWNERS

- MARKETING, SALES & DISTRIBUTION

- DEVELOPMENT & DESIGN

- CAR MANUACTURING

- CAR LEGACY HARDWARE
- TECH HARDWARE
- SOFTWARE

1. CONNECTED LIFE SOLUTION PROVIDER

2. PLATFORM SPECIALIST

3. ASSET-LIGHT INTEGRATOR

4. INTEGRATED VEHICLE MANUFACTURER

5. MANUFACTURING SPECIALIST

Source: Oliver Wyman analysis

1. Connected life-solution provider. Companies that pick this model would position themselves closest to the end user. They would not manufacture or sell cars, choosing instead to offer apps and services that go beyond mobility. They design and operate cloud-based software platforms and develop advanced algorithms. These players need to partner with mobility providers and automakers to generate value based on customer behavioral data.

2. Platform specialist. Companies following this model would not manufacture cars but offer a platform to sell cars or mobility services to customers. Current examples include Uber, or even Amazon. The main focus of these companies is to control logistics and the customer relationship by understanding customer behaviors and establishing trust.

3. Asset-light integrator. Apple is an example as companies here would focus on designing and developing key components and apps for driverless and connected cars in-house. The main goal of companies that choose this model is to maintain a strong brand and create a distinctive experience for the end customer. They design and operate cloud-based software platforms and design and sell cars to end users, thereby controlling the customer interface. They would outsource assembly and heavily depend on component manufacturers.

4. Integrated vehicle manufacturer. This model applies to the traditional car manufacturer, which would keep control of a broad part of the value chain including design, production, and sales. They would leverage their existing competencies and carry huge upfront cost and offer products and services to fleet managers and end customers. A good example of this model is Fiat Chrysler's agreement with Google to put the IT company's autonomous driving system into 100 Chrysler Pacifica minivans. The two companies will jointly develop the vehicles. Fiat Chrysler says this is the first phase of a relationship that could be expanded. In addition, earlier this year General Motors announced a long-term strategic alliance with Lyft to create an integrated network of on-demand autonomous vehicles in the U.S.

5. Manufacturing specialist. This model would be deployed by companies that would sell components to automakers as well as new entrants in the market, which means they would have no end-customer access. They focus either on high-volume, low-cost production of legacy hardware or specialize as a niche player that offers key technology hardware modules. In an extreme scenario, Asian volume manufacturers could evolve in this way by utilizing their footprint and low-cost competencies.

Today, dynamic and extremely agile new players are entering the automotive market with big ambitions, unmatched digital capabilities and enough cash to make things happen. No automotive players, however, possess the digital expertise to match these newcomers, and many have not decided how they would like to position their companies. Getting there will require decisive actions in the coming years. It also will demand patience because payback will take at least a decade. That is difficult for auto companies to grasp, especially since the industry thrives on immediate profit improvement and high asset utilization.

HOW TO DIGITALIZE THE COMPANY

While the degree and direction might vary depending on the targeted business model, automakers will need to act in five areas if they want to become competitive players in the future industry structure.

- Digital customer experience: Customer interaction will become seamless over multiple (online) channels ensuring a Zero Moment of Truth. A key differentiator here will be the integration into other ecosystems.
- Digital product: Automakers need to build a product that fits in the digital world. The car will be autonomously driven, highly connected, embedded in a larger ecosystem, and highly flexible to serve an exploding number of use cases of a global population.
- Establish new adjacent business models: Create solutions that actually address customer problems, while simultaneously tapping the full range of profit opportunities in the new value system, including mobility services, communication, infotainment, and more.

- Bundling: The business of producing and selling cars needs to be bundled with services to create a platform/ solution that solves customer problems and that fits within the new ecosystem.
- Digital organization: Core processes along the entire value chain need to be digitalized, including idea-to-produce, sales-to-delivery, as well as overarching operations and services. Consequently, this requires a fundamental cultural change in talent capabilities, decision-making processes, and the leadership system.

Digital players think big, but start small. They rapidly launch prototypes to quickly learn and adapt their solutions because they want to achieve hyper scale as quickly as possible. So far, auto companies do the opposite, which means they will need to make sweeping, fundamental changes.

To maintain their leadership position, traditional automotive companies need to transform their business models and enterprises along four dimensions:

- Define a clear target and get everyone to follow along.
- Ensure rapid execution by identifying and aligning the most impactful "digital initiatives" and quickly setting up digital nuclei to move toward the targets.
- Build relevant digital capabilities to ensure a sustainable transformation; attract people with digital expertise to further instill that culture into the company.
- Create a digital leadership system that encourages a customer-centric approach, promotes a test-and-learn environment, and demands rapid decision-making.

Automakers also need to establish a concrete transformation plan by defining rapid cycles of improvement with an aggressive timeline, challenging goals, and wide-ranging responsibilities to ensure agile execution. Initiating a digitally enabled, data-driven customer approach is critical for the future. But this will require changes from top management to bring relevant digital capabilities in-house and to instill a new mindset across the entire organization. ●