

1886年，第一辆汽油发动机汽车在德国诞生后，这种“不用马拉的车”便开始不断出现在欧洲街头，取代马车成为人类主要的交通工具。在出行上，从“人和马车的关系”转变为“人和汽车的关系”。经过100多年间的发展，汽车制造技术越来越成熟、完善，进入21世纪之后，车联网和物联网（Internet of Things, IoT）技术的快速发展和应用，正在将汽车构造成为人生活中一个重要的智能终端。未来车辆将作为一个“连接器”，连接人、车与出行场景中的一切，通过车辆的人机接口，为用户连接各类型的出行、消费场景以及服务。在这个过程中，人车关系将被进一步重塑得更加立体、更加生态化。

从产业价值链演进的角度来看，汽车行业价值正从过去的以车辆为中心的模式，转变为以消费者为中心的移动出行生态系统。移动出行生态圈正在被新的、跨界竞争者重塑，而出行服务提供商将处于价值分配的核心位置，因其把握住了客户和数据的入口。为避免在未来的价值分配体系中被边缘化，国内外主要汽车厂商纷纷提出向移动出行服务提供商转型的口号，布局移动出行领域，加强对用户和数据的把控，以期占据新生态中的核心地位。从市场及客户的角度来看，随着智能手机和移动终端的普及，移动互联已经全面融入用户生活。根据XX 2019消费者调研，79%国内受访者表示认可车联网相关功能带来的价值。伴随着对智能化生活体验的习惯养成，消费者对在开车或坐车出行时的智能互联体验也有了要求，中国城镇居民的通勤时间约为48分钟，消费者在车机端希望获得更为丰富和便捷的用户体验，渴望汽车能像手机一样更“读懂”自己，并给出定制化服务和连贯场景体验。

从国家政策层面来看，近年来，国家相关领导人多次强调“创新是引领发展的第一动力”，庞大的汽车消费市场，对科技创新可以给予良好的产业支撑。国家发改委提出的《智能汽车创新发展战略》，提出到2025年中国标准智能汽车的技术创新、产业生态、路网设施、法规标准、产品监管和信息安全体系全面形成。工信部、国家标准委共同制定的《国家车联网产业标准体系建设指南》针对智能网联汽车制定了100+项标准。

最后，从移动互联的基础设施和技术层面来看，在5G方面，中国很可能成为全球最先部署5G的几大市场之一。报告显示，中国自2015年以来花费在5G领域的投资已经比美国多出240亿美元，已建成支持5G通讯的基站数为35万座，是美国的10倍多。随着中国已进入5G测试第三阶段，计划2019年下半年实现商用。在人工智能方面，尤其在技术层面，中国企业发展迅速，聚焦于计算机视觉、语音识别和语言技术处理领域。除了BAT等在科技巨头之外，也出现了如XX、XX、XX等诸多独角兽公司。

我们可以清晰的看到，新的宏观变化和市场环境将促使汽车产业格局从“产品+技术为中心”向“以用户体验和运营为中心”模式升级，这种转变意为两层含义：

1) 产品定义的变化，汽车从机械产品变成软件定义的产品、数字化产品，具体来说整车厂需要从传统的车型和发动机向软件服务聚焦的转变，表现在如下两点：

- 一是向多功能平台转变，如算法和云计算对在自动驾驶领域，由摄像头、激光雷达等收集的大量数据进行处理，从而进行多种仿真分析，实现多种功能。
- 二是向云端软件实时更新转变，远程软件实时更新（Remote System Upgrad, RSU）使车辆实现了更紧密的互联和自动化，最突出的例子就是已经使用RSU的特斯拉，定期发布更新升级其自动辅助驾驶功能和电池。

2) 向运营商的变化, 整车厂产业链从传统的技术、制造、销售变成新技术、新制造和新零售, 需由单纯制造和销售产品, 转型为以用户为核心的运营商, 借助移动互联的新技术, 贯穿营销、销售和用户体验各阶段, 持续性地提供更好的产品以及服务, 更高效便捷地实现用户个人价值的商业模式。整车厂基于消费者在移动互联的消费路径, 在其购买阶段(信息流, 场景流)、支付阶段(资金流)、服务阶段(服务流)、线下体验阶段(商品流)实现线上线下打通全路径数据(数据流), 完成以用户为中心(用户流)提供实现精准产品营销和售卖, 从而把握以上商业“七流”向客户提供最便捷的服务。

Since the first gasoline-powered automobile was born in Germany in 1886, this kind of "vehicle not drawn by horse" has become commonplace in European streets, in lieu of carriage as a major means of public transport. From the view of travel, the "relationship between human and carriage" changes to "the relationship between human and automobile". With the development over a century, the automobile manufacturing technology has becoming increasingly mature and perfect. After entering the 21st century, due to the rapid development and application of technologies associated with Internet of Vehicles and Internet of Things (IoT), the automobile has been constructed as an important intelligent terminal for people's life. In the future, the automobile will become a connector to connect everything related to human, vehicle and traveling scene, and via the human-vehicle interface, various traveling, consumption scenes and services are available for users, during which the human-vehicle relationship will be further reshaped in a more stereoscopic and ecologic manner.

The value of automobile industry is transforming from the previous mode centered by vehicle to a mobile travel ecological system centered by the consumers from the view of the evolution of industry value chain. The mobile travel ecological system is restructured by the new and cross-sector competitors, and the travel service providers, due to its seizure of customers and data gateway, will be situated at the core place for value distribution. In order to prevent the marginalisation of the future value distribution system, many main domestic and foreign manufacturers put forward the slogan of transforming to mobile travel service providers, enter the mobile travel sector, and enhance the seizure of users and data, so as to take the core place of the new ecology.

From the perspective of market and customers, due to the popularization of smartphone and mobile terminal, the mobile interconnection has been completely merging into the life of users. According to the 2019 consumer survey carried out by XX, 79% domestic interviewees recognized values created by related functions of the Internet of Vehicles. As long as consumers get used to the intelligent life experience, they boost demand for the intelligent interconnection when they drive or travel by public transportation. The average commuting time for Chinese urban citizens is about 48 minutes, and consumers hope that they can get more abundant and convenient user experience from the vehicle terminal, and the vehicle can "understand" them just like mobile phone and provide customized service and continuous scene experience.

From the view of national policy, the relevant state leaders emphasized that "Innovation is the primary driver of development" constantly in recent years, and the huge automobile market can provide excellent industry support for the technological innovation. The *Intelligent Automobile Innovation and Development Strategy* issued by the National Development and Reform Commission proposed that the technical innovation, industry ecology, road network facility, regulations & standards, product supervision and information security system for standardized

intelligent vehicles in China will be fully formed by 2025. The Ministry of Industry and Information Technology and the Standardization Administration jointly formulated the *National Construction Guidelines for Standard System in the Internet of Vehicles Industry*, proposing 100+ standards for the intelligent connected automobiles.

Finally, from the view of infrastructure and technological level of the mobile interconnection, China is set to be in the first wave of the world's major markets deploying the 5G technology. According to the report, the amounts of investment made by China in 5G field has exceeded those made by USA by USD 24 billion since 2015, with 350,000 base stations built for 5G communication, which is over 10 times of that of USA. China has entered into the third phase of 5G testing, and the commercial use is scheduled to commence in the second half of 2019. As for the artificial intelligence or especially the technological level, Chinese enterprises develop rapidly by focusing on the computer vision, speech recognition, and language processing fields. In addition to the technology giants like BATH, there are also many unicorns like XXX, XXX, XXX.

We can obviously realize that due to the new macroscopic changes and market environment, the pattern of automobile industry will be upgraded from being "product + technology oriented" to "user experience and operation oriented", and this kind of change has two meanings:

- 1) Change in product definition, which means the automobile is changed from a kind of mechanical products to a sort of software defined products and digitized products. In particular, the focus of OEMs needs to be transformed from the traditional vehicle type and engine to the software service, which is expressed by the following two points:
 - The first is the transformation to multi-functional platform, for example, the algorithm and cloud calculation are applied for the automated driving field, and cameras and laser radars are used to collect big data for processing in order to implement multiple simulation analyses and functions.
 - The second is the cloud software real-time upgrade and Remote System Upgrade (RSU) which realize the closer interconnection and automation of the vehicle. The most outstanding example in this aspect is Tesla with RSU, with its autopilot function as well as battery information being published, updated and upgraded regularly.
- 2) Changes in the focus of operators, which means the focuses along the industry chain of OEMs are transformed from the traditional technology, manufacturing, and sales to the new technology, new manufacturing, and new retailing, and the services provided by operators would be shifted from simple manufacturing and product sales to user-oriented operations; based on the new technology for mobile interconnection through the phases of marketing, sales and user's experience, the operators continuously provide better products and services, as well as a business model to realize the user's personal value in a more efficient and convenient way. Based on the consumption route in the mobile interconnection of consumers, the OEMs provide the online/offline whole-route data (data flow) at the purchase stage (information flow and scene flow), payment stage (capital flow), service stage (service flow), and offline experience stage (commodity flow), supply the accurate product marketing and sales cored by the users (user flow), so as to provide the most convenient service for customers based on the above mentioned "seven commercial flows".