OEMs' Digital Transformation Strategy Research Report, 2020-2021

Feb.2021

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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.

◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.

◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.

◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.

◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.
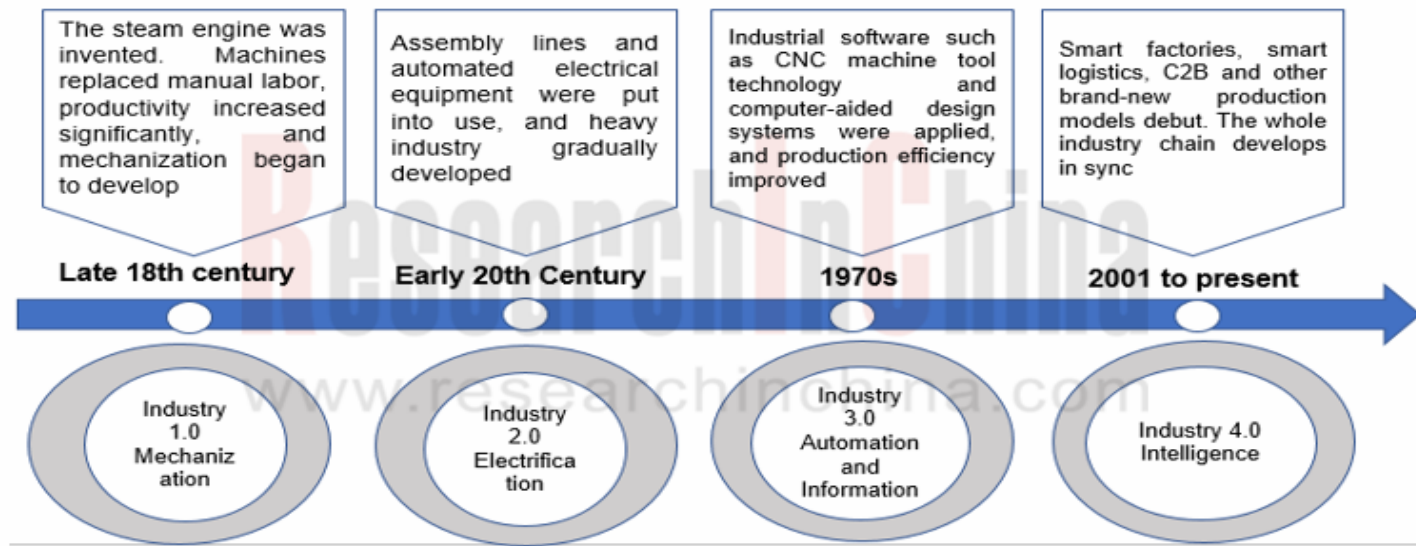
INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

Research on digital transformation of automakers: Tesla is still the best reference

Digital transformation means that enterprises make full use of digital technologies (such as big data, cloud computing, artificial intelligence, etc.) in R&D, production, marketing and services to promote the transformation of business models, organizational structures, etc., so that concepts like intelligent manufacturing are derived.

Digital transformation in the automotive industry includes R&D and production digitalization, marketing service digitalization, product digitalization, and management digitalization.

The steam engine was invented. Machines replaced manual labor, productivity increased significantly, and mechanization began to develop — **Late 18th century** — Industry 1.0 Mechanization

Assembly lines and automated electrical equipment were put into use, and heavy industry gradually developed — **Early 20th Century** — Industry 2.0 Electrification

Industrial software such as CNC machine tool technology and computer-aided design systems were applied, and production efficiency improved — **1970s** — Industry 3.0 Automation and Information

Smart factories, smart logistics, C2B and other brand-new production models debut. The whole industry chain develops in sync — **2001 to present** — Industry 4.0 Intelligence

In essence, digitization actually maps and orderly manages the real world (such as cars, roads, car owners, etc.) in the virtual world. The real world is transformed into various information systems through data collection from automobile production, R&D, marketing, services and management. Via the integration of information and data, big data and artificial intelligence technology which optimizes the processing of the virtual world, the process and management of the real world are optimized as well.

During the "Industry 3.0" era (automation and information age, approximately from 1980 to 2010), production information systems, R&D information systems, sales information systems, user and service information systems, etc. were formed, but these information systems were basically isolated then. Due to the low frequency of information collection, a lot of information still lagged.

With the substantial improvement in chip computing power and storage capacity, the automotive industry has entered the era of Industry 4.0 (intelligence) which will connect information systems in all business links. At the same time, the frequency and precision of information collection will be greatly improved, and some fields may even see digital twin (that is, the virtual world by digital mapping is highly consistent with the real world).

Tesla achieves the highest degree of intelligence among all automakers, and has basically connected the information systems and data of all business links. Tesla not only conducts self-research on electrification, connectivity and intelligence of cars, but also tries its best to develop software systems in the entire life cycle of cars.

Software-driven is the source of Tesla's subversion of the entire automotive industry. Its self-developed software system named Warp supports its direct sales business in the United States and adapts to growth in China and other markets around the world. Warp is a combination of e-commerce and back-end management software and completely customized to support Tesla's counter-approach to selling and servicing cars. The automaker uses its Warp-powered e-commerce website and its own showrooms, not dealerships, to sell cars. Warp also handles all the back office functions for Tesla such as order processing, supply chain management, manufacturing workflow management, financial accounting and lead management.

China's emerging automaker NIO adopts a sales model similar to Tesla's. No matter online or offline, NIO prefers self-operation and self-establishment. It basically relies on online channels to sell products, while displays the brand and offers user experience services offline. NIO's experiential digital marketing is widely praised. In terms of experience marketing, NIO starts from eight aspects: content experience, social experience, lifestyle experience, car purchase experience, driving experience, service experience, energy supplement experience, and battery swap experience.

Content Experience	Social Experience	Lifestyle Experience	Car Purchase Experience
Driving Experience	Service Experience	Energy Supplement Experience	Battery Swap Experience
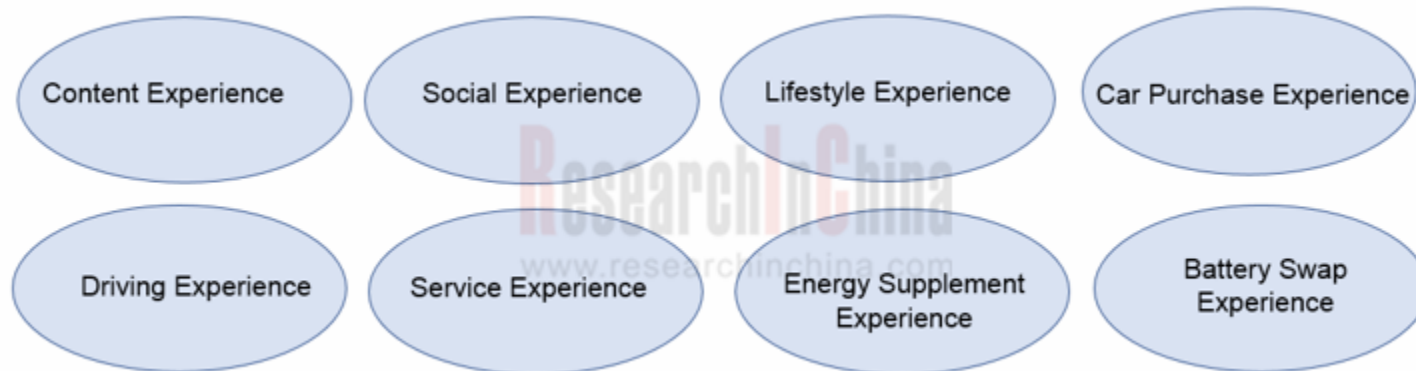
Take the social experience as an example: users can set up groups in the NIO App. In other words, once a user becomes a car owner, a dedicated car owner service group of 13 people will be formed. In the service group, there are sales partners, service specialists, power-on specialists, as well as various technical specialists and city general managers. When users have any problems in the process of using cars, they can inquire in the group, and someone will respond to and solve problems immediately.

The traditional automakers BMW and Mercedes-Benz have developed APPs which pay attention to functions and require registration. They only provide services for existing car owners, so they are unattractive to potential car owners. The limited traffic cannot support sales volume conversion.

As the emerging automakers represented by Tesla have been digitally operated from the beginning, they are sought after by consumers and recognized by the market. The emergence of new forces has posed tremendous pressure on traditional automakers who thus have formulated digital strategies one after another to boost digital transformation.

At present, automakers mainly deploy digital transformation in five aspects: **First**, they establish software companies or R&D divisions as well as build software teams through self-construction or cooperation.

Cases of Automakers Building Software Teams

Automakers	Time	Cases
Toyota	January 2021	Toyota Research Institute - Advanced Development, Inc. (TRI-AD) announced that it will reorganize to create software company named Woven Planet, which has three subsidiaries: Woven Core Woven Alpha, and Woven Capital
Volkswagen	June 2019	In 2019, Volkswagen announced the establishment of its new "Car.Software" unit which is responsible for the development of the vehicle operating system "vw.os" and the Volkswagen Automotive Cloud.
BMW	January 2019	BMW Brilliance established Lingyue Digital Information Technology Co., Ltd. specializing in automotive software development
SAIC	July 2020	SAIC Z-One Software Branch was erected, focusing on intelligent driving system engineering, software architecture, and basic software platforms
	June 2018	SAIC Motor Artificial Intelligent Laboratory was established
	2017	Shanghai Fin-shine Technology Co., Ltd. was founded for operation of cloud platform
FAW	April 2020	FAW spent RMB50 million on founding an artificial intelligence subsidiary --- FAW (Nanjing) Technology Development Co., Ltd.
BAIC	November 2018	BAIC established BAIC Data Co., Ltd. and planned to build a "cloud platform" and a big data platform
Changan	December 2019	Chongqing Changan Automotive Software Technology Co., Ltd. was established

Source: ResearchInChina

Second, automakers set up digital centers internally to coordinate the digital transformation of the entire groups and promote the implementation of overall digital strategy.

In April 2019, Honda established the Digital Solution Center within Honda R&D, which will focus on creating new value through utilization of digital technologies.

In July 2018, Nissan established a global digital business center in India to strengthen Nissan's global digital R&D capabilities

In July 2020, BAIC established a digital transformation team to prompt digital transformation

In August 2016, Mercedes-Benz founded a new digital business unit engaged in Daimler's global digitalization and information technology development

In April 2020, Great Wall Motors erected a digital center to promote the development of the group's digital business

In 2017, SAIC founded Digital Division to promote the group's digital transformation

In 2020, BMW established Digital Car Division to integrate digital products, digital technology and digital services

Source: ResearchInChina

Third, automakers can reduce costs and improve competitiveness by allying with other automakers.

Fourth, automakers prompt digital transformation through cooperation with technology companies (such as Baidu, Alibaba, Tencent, Huawei, etc.).

Fifth, automakers create an online & offline user-centric digital marketing model.

GM's 4S stores have evolved into a "7S modular dealer service system" consisting of New Car Sale, After-Sales Services, Spare Parts, Information Survey, Pre-owned Car Services, Sharing and Financial Support.

Xpeng's "2S+2S" marketing model disassembles "4S" into two parts: online (marketing and parts available on Tmall) and offline (after-sales services and information feedback). Through the dual-channel linkage of "the Tmall flagship store + offline stores", Xpeng connects both online and offline fields, which not only greatly reduces costs, but also brings consumers with new experience.

This report analyzes 21 OEMs' strategies and specific measures for transformation. Conventional automakers like Toyota and Changan Automobile have made successes in digital transformation as well, in addition to emerging carmakers.

Toyota Digital Transformation focuses on five aspects: first, adjusting organizational structure, with high priority on restructuring of TRI-AD, Toyota's advanced software company and segmenting its business into "R&D of Automated Driving Technologies", "Incubation of Innovative Projects" and "Investment in Emerging Areas"; second, launching the Mobility Services Platform (MSPF) for an upgrade to the next-generation mobility services; third, building a cloud service platform for better business and operation models; fourth, creating Toyota New Global Architecture (TNGA) to reform R&D and production links; fifth, developing digital products, with deployments in autonomous driving, HD map, chip, HMI, etc.

woven planet

Have the strategic decision-making function for the entire group, expand collaboration with partners, create new business opportunities, and provide corporate shared services to the operating companies

woven core

Develop automated driving technologies

woven alpha

Explore new areas for business expansion and incubate new innovative projects

woven capital

Make investments in smart mobility, automated driving, artificial intelligence, machine learning, connectivity and smart city, etc.

Changan Automobile takes software as its corporate strategy, setting up a software center to enhance its digital transformation. For R&D and production, the automaker builds a R&D cloud platform for advancing construction of smart cities; for marketing, it creates an integrated marketing cloud platform and self-establishes an ecommerce platform; for product digitization, it makes deployments in areas from cloud platform and intelligence to telematics by way of independent construction and cooperation.

Despite great efforts on digital transformation, quite a few automakers still face some challenges, such as:

◆ Underpowered transformation, disputed transformation model, and some departments' reluctance to transform;
◆ Poor ability to attract customers online in digital marketing, and lower-than-expected return on offline high investment;
◆ Under-investment in digital transformation, which blames for conventional businesses;
◆ Lack of software teams and user operation experience.

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