Automotive Cockpit Multi and Dual Display Trend Report, 2020

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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

Dual and multi display solutions and development tendencies are analyzed in this report.
Amid the smart cockpit trend, the display incarnates intelligence as the main interface of human-computer interaction. Following the large screen, multi display and dual display grow the new trend of the cockpit display. The “one-core multi-display” solution has become the apple in the eyes of OEMs and cockpit system integrators.

(I) Multi-display: Luxury brands adopt multi-display at first, and emerging brands follow suit.
The multi-display solution is superior in that the functions of the traditional console screen are split, so that navigation, multimedia and other information are placed on one screen or two, while vehicle information such as seats, air conditioning and ADAS are enabled on another screen. The system application menu and user’s operations are streamlined.
In 2016, Infiniti was the first to roll out a console solution with an 8.0-inch upper screen and a 7.0-inch lower screen. The Range Rover Velar unveiled in 2017 is equipped with two 10-inch console screens, featuring a sense of technology. Since then, foreign luxury brands like ACURA and Audi have followed suit.

Emerging brands such as Lixiang ONE, Nezha U, and HYCAN 007 debuted in 2019-2020 launched dual-screen consoles and even triple-screen consoles in a successive way.

In Q1 2020, the sales volume of models packed with a dual-screen console exceeded 30,000 units in China, a year-on-year spike of 165.0%; the installation rate was 1.2%, up 0.9 percentage point over the same period last year. As for terminal applications, the cost pressure confines dual-screen consoles to high-end models priced at RMB400,000-RMB500,000.

Console Multi-display Vehicle Models and Solutions (Partial)

Brand	Model	Suggested Retail Price (RMB)	Supplier	Multi-display Solution (inch)	System and Chip
Chery Jaguar Land Rover	Evoque	390,800-505,800	--	Console dual-display: upper 10.2 + lower 10.2	Chip: upper Qualcomm 820A; System: upper -Linux
IDEAL Automotive	Lixiang ONE	328,000	Desay SV	Console tri-display: middle 16.2+ right 12.3+ lower 10.1	Dual-core quad-display dual-system. Chip: middle & right - Qualcomm 820A; lower – TI J6. System: middle & right -Android; lower - Linux
GAC NIO	HYCAN 007	259,800-400,000	Megatronix	Console dual-display: upper 12.3+lower 10.1	Chip: upper & lower – MediaTek Autus 120 System: Android

(II) Dual Display: Local Chinese Brands and Joint Venture Brands Contend for Model Launches with Dual Display during 2019-2020

The traditional console screen and the dashboard are physically separated by a large distance, so that the driver has to pay more attention to touching the console display and reading information. At the same time, console screen and LCD cluster screen interact in some content, for instance, the navigation route displayed on the console screen, music, calls and other information can be interactively showed on the LCD dashboard. In the dual-display solution, the dashboard screen and the console screen share a glass cover, being connected almost seamlessly, visually creating a sense of screen integration, making it easier for the driver to fulfil touch operations and read information.

The dual display solution first appeared in 2016. The interior of Mercedes Benz E-class mounts two 12.3-inch full HD screens housed within a single unit. In November 2018, the solution officially spread to Mercedes Benz A-class. In 2017-2018, Chinese brands such as BAIC BJEV Lite and FAW Besturn T77 began to dabble in the solution. In 2019-2020, dozens of models with dual displays, including FAW Hongqi HS5, Changan CS75 PLUS, GAC Aion LX and Chery EXEED LX, were launched successively.

In 2020Q1, China sold nearly 70,000 passenger cars equipped with the dual display solution, a year-on-year increase of 6.1%; the installation rate reached 2.4%, up 1.1 percentage points from the same period last year. The solution is mostly available in high-end models, and it has penetrated into low- and medium-end models since 2019.

Brand	Model	Suggested Retail Price (RMB)	Display (inch)	Supplier	System and Chip
Beijing Mercedes Benz	Mercedes Benz A-Class	211,800-299,800	10.25+10.25	Visteon	One core, dual screen, dual system. Chip: Nvidia Tegra Parker. System: Cluster – QNX + Console - Linux
GAC NE	Aion LX	229,600-349,600	12.3+12.3	Visteon	One core, dual screen, dual system. Chip: Qualcomm Snapdragon SA8155. System: Cluster – QNX + Console - Linux
Chery EXEED	EXEED LX	125,900-150,900	12.3+12.3	Neusoft	One core, dual screen, dual system. Chip: Intel Apollo Lake. System: Cluster – Linux + Console - Android
XPENG	Xpeng P7	229,900-349,900	10.25+14.96	-	Dual core, dual screen, dual system. Chip: Cluster – Freescale i.MX6+Qualcomm 820A. System: Cluster - +Console - Android

(III) The "one-core multi-screen" solution: the hotspot of multi- and dual- display solutions

For chip control and system drive, the one-core multi-display is a favored solution which is seen in Benz A-Class, BUICK GL8 Avenir series, Lixiang ONE, among others, and the pioneers are in such a pre-emptive move, such as Harman, Visteon, Aptiv, Desay SV, Neusoft, etc.

In January 2020, Samsung brought its Digital Cockpit 2020 at CES. The new cockpit was developed by Samsung and its subsidiary HARMAN International, and it's packed with technologies including an Exynos Auto V9 SoC, Android 10, a Dashboard Display which is seamlessly incorporated into the vehicle's interior design, a Front Display, a Console Display, a Center Information Display, two physical knobs (both of which have their own displays), two 7-inch displays on each side of the dashboard as digital mirrors powered by external cameras.

Digital Cockpit 2020 by Samsung and HARMAN -- multi-display, dual-display (integrated screen), one-core multi-display system

Considering screen arrangement and chip use, Digital Cockpit 2020 jointly launched by Samsung Electronics and Harman International applies both console multi-screen and dual display solutions. The Center Information Display and the Console Display enable varied information application in the car, and the Front Display can show contents in a split-screen mode.

Digital Cockpit 2020 is packed with 4 large displays and 2 small displays:
•The 28.3-inch Front Display provides visual navigation information and is positioned to ensure that the driver keeps their eyes on the road. It is equipped with QLED Local Dimming technology and split-screen mode to allow passengers to make use of the display without distracting the driver.
•The Dashboard Display, which is seamlessly incorporated into the vehicle's interior design, is positioned under the Front Display and delivers visual notices and alerts.
•The 12.4-inch Center Information Display can automatically rise and fall, and can provide information like driver's schedule once the driver is authenticated via facial recognition or a connected smartphone's fingerprint reader.
•The Console Display can be set up to control various features and the functions of other displays, as well as the vehicle itself.
•Two physical knobs, both of which have their own displays, enable users to choose music.

In a nutshell, it seems unavoidable for automakers and parts suppliers how to get perfect human-machine interaction and information display as well as full exertion of console intelligence in accompaniment with a broad range of features and applications in the car. Multi-display 'separate governance' and dual display 'all in one' are the two alternatives for the automakers. What is the most challenging now are the expensive R&D costs of the 'one-core multi-display' solution and a high demanding on technical strength. For the OEMs, enormous investment is necessary for chip authorization, software and operating system (OS) development, etc.; for the system integrators, software complexity remains a hard nut to crack.

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