New Version of China Automotive Industry Information Website based on WeChat Mini Program

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Abstract

With the rapid development of mobile internet, the need for mobile-based functionality has become more urgent. Mobile internet remains the primary method for users to access data and view reports. Currently, mature industry information products in the automotive sector are predominantly web-based. In order to cater to user and market demands, we will launch a new version of the China Automotive Industry Information website based on WeChat Mini Program. This new version aims to provide users with a mobile-based browsing experience, enabling them to conveniently access information and meet their information needs in various scenarios.

Keywords

WeChat Mini Program; Automotive; Information.

1. Introduction

Currently, the automotive industry is experiencing an explosion of information, with a wide variety of products available. Users require cutting-edge mobile solutions to aid in their information decision-making. In order to seize the market and cater to user habits, we aim to launch a mobile-based mini program information website for the automotive industry. This platform will aggregate various content, including policies, standards, industry reports, professional data, and company information, providing users with a more convenient way to access and utilize the information on their mobile devices. The existing China Automotive Industry Information website has a public account, but its content is not extensive, and its presentation format is limited. Compared to the public account, a mini program provides users with a better experience to explore the website's content and overall offerings. We intend to attract new users and empower existing ones through the mini program. We have considered the following points:

1) Utilize the existing fan base of the information website's public account and redirect them to the mini program to expand the customer base.

2) During promotional activities for new users, encourage them to scan the QR code and experience the mini program for a convenient product experience.

3) Allow existing users to access and view content on their mobile devices, catering to their needs for mobile office usage.

2. Product Framework

The China Automotive Industry Information mini-program can consist of five main pages: Home, Data, Company Database, Industry, and My. Each page will have multiple subpages. The Home page will primarily focus on content display and highlights. The Company Database will provide access to enterprise information, company reports, production and sales capacity, allowing users to retrieve relevant information from the perspective of enterprises. The Industry section will include selected analysis reports, policy databases, and standards libraries,

enabling users to access report materials and other related content. The My page will mainly offer auxiliary functions such as bookmarking and recommendations.
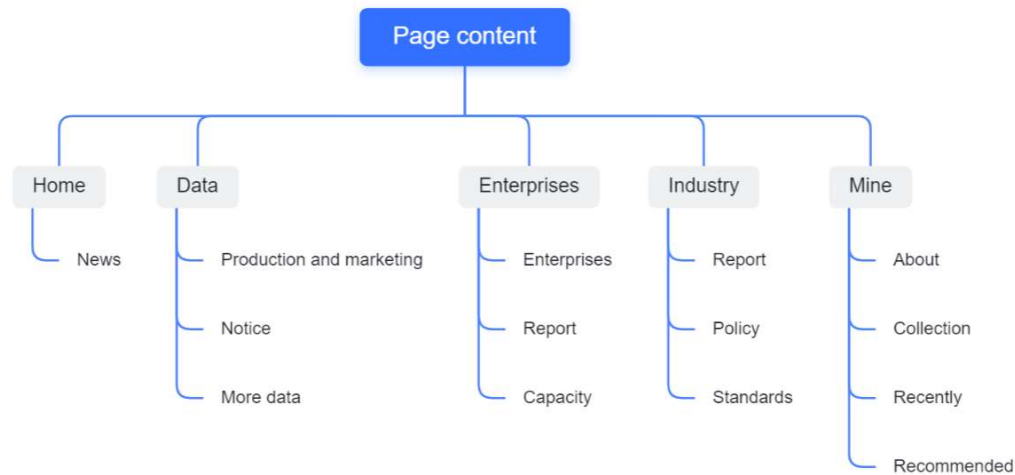

Figure 1. Page content

3. Product Feature Design

The China Automotive Industry Information mini-program is primarily divided into 5 modules. Below is a brief introduction to each module. Please note that the product has not been developed and launched yet.

3.1. Homepage

The homepage of the China Automotive Industry Information mini-program consists of several sections, including Introduction, Menu Icons, Data Monitoring Charts, Enterprise Intelligence, Hot News, and Recommended Reports.

The Introduction section primarily provides an overview of the product on the PC end, using PC images or icons to represent the PC version. It includes the following content:

1) One-sentence introduction: China Automotive Industry Information is a one-stop automotive industry information service platform built under the guidance of the former Ministry of Machinery Industry and specifically developed by China Automotive Technology and Research Center. It comprehensively organizes automotive industry information and data resources, fully presents industry development trends and future prospects, and provides customers with in-depth collections of information, data, intelligence, and perspectives.

2) Policies: Provides national and local policy information covering various aspects of the entire industry chain, offering references for customers to grasp the latest policy trends and conduct in-depth analysis.

3) Standards: Provides information on national standards, industry standards, and group standards, supporting customers in tracking the latest standard trends and conducting original text searches.

4) Announcements: Provides official announcements of enterprises and products, offering customers systematic and convenient information query services.

5) Data: Provides statistical data covering areas such as passenger cars, commercial vehicles, new energy vehicles, global automotive market, and development environment, offering customers data querying and statistical report generation services.

6) Used Cars: Provides authoritative and rich sources of used car data, conducting data analysis from various dimensions such as specific fields, vehicle models, regional distribution, transaction prices, and usage years. It offers comprehensive, flexible, and convenient custom query analysis and professional insightful reports.

7) Market Insights: Provides market insight reports covering seven major sections, including overall market, passenger cars, commercial vehicles, new energy vehicles, imports and exports, industry chain, and consumer trends. It analyzes the current market situation and forecasts market trends.

8) Forecasting: Provides sales volume forecasts for segmented markets, companies, and vehicle models, offering customers references for short-term rolling forecasts and medium-to-long-term predictions.

9) Special Analysis: Tracks hot topics in the automotive industry, covering four major areas: development environment, passenger cars, commercial vehicles, and supply chains, as well as five major categories: new energy, intelligent connected vehicles, etc. It features timeliness, professionalism, accuracy, and in-depth analysis.

10) Cutting-Edge Technologies: Covers advanced technologies related to new energy, intelligent connected vehicles, energy conservation and emission reduction, safety, etc. It includes the latest technological advancements and technical analysis from domestic and international research institutions and enterprises, providing customers with forward-looking, comprehensive research trends, and original analysis reports.

11) Enterprise Intelligence: Provides dynamic information and interpretive reports on the business activities of major domestic passenger car and commercial vehicle enterprises. It also includes the latest production capacity distribution at the provincial and enterprise levels, offering customers insights into the competitive trends of enterprises and providing a basis for formulating corporate strategies.

12) Library: The Automotive Industry Literature Retrieval Center, which houses highly specialized and extensive literature resources covering automotive industry books, journals, standards, etc. It supports one-stop retrieval, full-text search, interlibrary document delivery, and mobile library services.

13) Customized Systems: Based on the China Automotive Industry Information website, assists enterprises in creating exclusive competitive intelligence systems that meet their needs and characteristics.

The "Industry Hotspots" (News and Information) will have a separate page that includes a list of industry hotspots. Users will be able to filter them by tags such as passenger cars, commercial vehicles, new energy, intelligent connected vehicles, and components. They can also search by name. The content will include a title, optional summary, field, and time. The information content page will include a title, publication time, source, summary, and main text.

The data monitoring graph will be presented in the form of indicator cards, displaying time, indicators, year-on-year comparison, and month-on-month comparison. The indicators will include overall sales, passenger car sales volume, and commercial vehicle sales volume.

For the enterprise intelligence section, there will be a sliding display of names and logos of 20 companies, allowing users to differentiate between passenger car and commercial vehicle companies and make selections.

3.2. Data

Production and Sales Data: This section focuses on displaying data reports and enabling query and analysis operations. The data report includes the ability to switch between data overview and data query. Users can select the type (sales or production) and the time (monthly). The section displays indicator cards for the latest monthly passenger car sales volume (year-on-

year and month-on-month comparison) and the latest monthly commercial vehicle sales volume (year-on-year and month-on-month comparison). It also presents a trend chart, either for the recent monthly passenger car sales volume or the recent monthly commercial vehicle sales volume (with passenger cars as the default option), using a bar graph. The section also includes a ranking of the top passenger car models for the latest monthly sales, which can be switched between annual and monthly rankings. Users can choose to view all car types or specific categories such as sedans, SUVs, and MPVs. The ranking displays the month-on-month comparison and the specific value for the current month. Similarly, there is a ranking of the top companies for the latest monthly passenger car sales volume or commercial vehicle sales volume (with passenger cars as the default option), which can be switched between annual and monthly rankings. The ranking also includes the month-on-month comparison and the specific value for the current month. The data query feature allows users to select the time field (year or month, with the default as month), the display dimension (car type, company name, or subcategory, with car type selected by default), and the calculation indicators (sales volume, production volume, and statistical volume, with all options selected by default). After making the selections, users can perform the query, and the results will be displayed in a tabular format.

Announcement Search: This section includes two types of searches: Announcement Information Search and Public Announcement Search. Both types have a search page. In the Announcement Information Search, there are four subsections: Vehicle, Chassis, Motorcycle, and Three-Wheeled Vehicle. For each subsection, basic information can be queried. For example, in the Vehicle search, users can query information such as batch, company name, product name, product model, product number, product trademark, vehicle type, fuel type, chassis company, chassis model, and quality and dimension parameters (total mass, rated mass, curb weight, vehicle length, vehicle width, vehicle height, cargo box length, cargo box width, cargo box height). The Chassis search allows users to query information such as batch, chassis company, chassis name, chassis model, chassis ID, chassis category, and chassis trademark. The Motorcycle search allows users to query information such as batch, company name, product name, and product model. The Three-Wheeled Vehicle search includes basic query information such as batch, company name, product name, product model, and product number. The Public Announcement Search follows a similar format as the Announcement Information Search. After performing a search, the results are displayed in a list for users to view.

More Data: This section includes subcategories such as Vehicle Ownership, New Vehicle Registrations, Export Data, and Economic Indicators. Each subcategory presents corresponding data to facilitate users in classifying and querying data results.

3.3. Industry

The industry is divided into three main categories: Research Reports, Policy Database, and Standards Database, providing textual support for the automotive industry.

Research Reports: This category includes three sections: Special Analysis, Cutting-edge Technologies, and Market Insights. It presents research report contents, supporting users in classifying the reports and searching for keywords within them. Users can also save reports for future reference. The reports are categorized as Original, Third-party, or All, making it convenient for users to find original content for reading.

Policy Database: The Policy Database includes the display of policy texts and policy interpretations. Users can view policy texts online, which are divided into All Policies, National Policies, and Local Policies. The policy interpretations provide analysis reports. Users can filter policies based on specific areas and also search using keywords.

Standards Database: The Standards Database contains various types of standard documents, including those that are not yet implemented, currently in effect, obsolete, or replaced. It

supports online preview of PDF files, enabling users to quickly access and view the standard contents.

3.4. Enterprise

He enterprise section mainly consists of three parts: Enterprise Information, Company Reports, and Production Capacity and Sales.

Enterprise Information: This part allows users to search and query enterprise information. It displays company profiles, latest developments, operational status, production facilities, and vehicle platforms for both whole vehicle and component-related companies. The latest developments include the company's latest news and information, while the operational status includes details such as reporting period, revenue, net profit, gross profit, and R&D expenses. The production facilities section provides information on provinces, cities, status, vehicle models, facility types, and maximum production capacity. The vehicle platforms section includes existing platform names, fuel types, existing and planned vehicle models, and more. Some sections may be hidden if there is no data available for certain companies, depending on the PC version content.

Company Reports: This part includes company-specific analysis reports and financial reports. Users can search by name and view the reports online. The analysis reports typically include titles, sources, summaries, and full texts.

Production Capacity and Sales: This part includes production capacity data and production and sales data. The production capacity distribution allows users to filter by vehicle type (multiple selection), provinces (multiple selection), and production companies (single selection, defaulting to BYD). The data table below displays the company, type, province, facility, and production capacity. The production and sales data can be filtered by time (from x to x, where x represents the month) and company name (single selection, defaulting to BYD).

3.5. Mine

The section of Mine described includes several key functionalities on the login page: Login, About Information Website, My Favorites, Recently Viewed, and Recommended Readings.

My Favorites: This section allows users to access specific content pages of their favorite reports, such as thematic analysis reports, cutting-edge technology reports, market insights reports, company analysis reports, and policy interpretation reports. Each report should have labels indicating its source and whether it is original content. Recently Viewed: This section displays the recently viewed content across various categories, enabling users to quickly access the materials they have recently interacted with. Recommended Readings: This section showcases reports that have been carefully selected by our backend system for recommendation based on user preferences and interests.

The login page supports two login methods: phone number and account password. By default, the phone number login option is provided to allow users to log in quickly with a one-time verification code, aligning with user convenience and usage scenarios.

4. Different Authorization Levels

Due to the sale of different sections on the PC version of the China Automotive Industry Information website, users of different sections may belong to different groups. Therefore, we need to design different permissions for different users.

4.1. Permission Categories

Table 1. permission categories

Not logged in	Logged in - Some not purchased	purchased
can see the front page for free Allow to see the content that introduces us Any other click, can't see the specific content, Popup to the login and registration page	Pop-up or mask text prompt Only for members of this column Can consult to buy the column permission Contact information	Normal view and use

4.2. Login Did not Purchase the Rights and Interests of Each Column

For users who have logged in but have not made a purchase, we can provide certain content benefits to attract them to make a formal purchase. The specific design is as follows:

Table 2. introduction table

Home page	The introduction and information are free to see, other points into the mask half hidden, the report is allowed to view the first 2 pages, behind the mask tips only for the column member service. Note the restrictions on sliding the home page list
Data	Production and marketing data overview, can be viewed free Switch other categories, enter the query and other behavior pop-up reminders
Industry	The report mask is half hidden (2 pages are allowed for the report), and the policy/standard can be clicked directly on the pop-up window to switch query and other pop-up prompts Note the qualification of report list sliding
Enterprise	Hot events free to see, enterprises can not point into, can search enterprises
Mine	Favorites, browsing, recommendation are available, recommendation report points into the semi-hidden

5. Conclusion

China Automotive Industry Information Website has accumulated a large number of PC users at present. With the introduction of our mini-program, we aim to enrich our user scenarios and optimize the user experience. This will allow users to explore automotive knowledge more conveniently, aligning with the current positioning of our information website as a one-stop service for automotive industry expertise.

References

[1] Niu, L., Wu, L. Design and Implementation of Mobile Learning Platform Based on WeChat Mini-Program. Software Engineering, 2018, 21(9): 15-17+7.

[2] Xu, Y., Hu, Z., Song, Y., et al. Research and Practice of WeChat Mini-Program for Subject Knowledge Services. Library and Information Service, 2020, 14: 54-62.

[3] Zhou, M., Li, X., Chen, K., et al. Design and Implementation of Online Learning Platform Based on WeChat Mini-Program. Library and Information Service, 2020, 14: 54-62.

[4] China Internet Network Information Center. The 41st Statistical Report on the Development of China's Internet. China Broadcasting, 2018(3): 96.

[5] Sun, L. Research on the Application Scenarios of WeChat Mini-Programs. [Dissertation]. Changsha: Hunan Normal University, 2021.