



Industry Report on China's FMCG Marketing Market

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CIC introduction, methodologies and assumptions

China Insights Consultancy was commissioned to conduct research, provide an analysis of, and produce a report on China's FMCG marketing market. The commissioned report has been prepared by China Insights Consultancy independent of the influence of Qunabox Group Limited and other interested parties.

China Insights Consultancy is an investment consulting company initially established in Hong Kong. Its services include industry consulting services, commercial due diligence, strategic consulting, and so forth. Its consultant team has tracked the latest market trends in TMT, healthcare, marketing and advertising, culture and entertainment, energy and industry, agriculture, chemicals, finance and services, consumer goods, and transportation. It possesses the most relevant and insightful market intelligence regarding these industries.

China Insights Consultancy undertook both primary and secondary research using various resources. Primary research involved consumer survey, interviewing key industry experts and leading industry participants. Secondary research involved analyzing data from multiple publicly available data sources, including the National Bureau of Statistics of China, Chinese Government releases, annual reports published by relevant industry participants, industry associations, China Insights Consultancy's own internal database, etc.

The market projections in the commissioned report are based on the following key assumptions: (i) that the overall global social, economic, and political environment is expected to maintain a stable trend over the next decade; (ii) that related key industry drivers are likely to continue driving growth in global and China's FMCG marketing and outdoor marketing industry during the forecast period; and, (iii) that there is no extreme force majeure or set of industry regulations in which the market situation may be affected either dramatically or fundamentally. All forecasts concerning market size are based on the general economic conditions as of the Latest Practicable Date, which would be adjusted if the COVID-19 outbreak persists or escalates and has an unpredicted negative impact on the general economy.

All statistics are reliable and based on information available as of the date of this report. Other sources of information include those from the government, industry associations, and market participants. These may have provided some information on which the analysis or its data is based.

All the information about Qunabox Group Limited is sourced from Qunabox Group Limited's own audited report or management interviews. China Insights Consultancy is not responsible for verifying the information obtained from .

Terms and abbreviations

AI: Artificial intelligence 人工智能

AIoT: Artificial Intelligence of Things 人工智能物联网

App: Application 应用程序

AR: Augmented Reality 增强现实

CAGR: Compound annual growth rate 复合年均增长率

CPM: Cost Per Mille 每千次广告曝光费用

CRM: Customer Relation Management 客户关系管理软件

DAU: Daily Active User 日活跃用户数量

DSP: Demand-Side Platform 需求方平台, 为广告主或代理商提供实时竞价的投放平台

E-commerce: Electronic commerce 电子商务

FMCGs: Fast-moving consumer goods 快速消费品

GDP: Gross Domestic Product 国内生产总值

Gen Z: Generation Z Z世代, 指在1995-2010年间出生的人

IoT: Internet of Things 物联网

IP: Intellectual property 知识产权

IT: Information Technology 信息技术

JD: JD.com 京东

KOL: Key Opinion Leader 关键意见领袖

MAU: Monthly Active User 月活跃用户数量

NBS: National Bureau of Statistics of China 中国国家统计局

NDRC: National Development and Reform Commission 中国国家发展和改革委员会

OTT: Over-the-top media services 过顶内容服务, 一种通过互联网直接向观众提供的流媒体服务

PDD: Pinduoduo 拼多多

R&D: Research and Development 研究和开发

ROI: Return on Investment 投资回报率

SKU: Stock Keeping Unit 最小存货单位, 通常指商品种类数量

Tmall: Tmall.com 天猫商城

TV: Television 电视机

U.S: the United States 美国
















































VR: Virtual Reality 虚拟现实



1. **Analysis of China's FMCG industry**
2. Analysis of China's FMCG Marketing Market
3. Competition Landscape of China's FMCG
Outdoor Marketing Market and China's FMCG
Merchandise Sales Market
4. Appendix

The fast moving consumer goods (“FMCGs”) refer to daily-use products, including food and beverages, beauty and skin care products, and daily necessities. FMCGs are characterized by higher consumption frequency, shorter shelf life, lower unit price, and lower brand loyalty from consumers.

Overview of key consumer goods

Category	Definition	Representative products	Purchase Frequency	Shelf Life	Unit Price	Customer Loyalty
Food and Beverages 	<ul style="list-style-type: none"> Substances that have been packaged or processed for direct consumption or drinking, including alcoholic beverages 	 Packaged food  Bottled Drink  Alcoholic				
Beauty and skin care products 	<ul style="list-style-type: none"> Products can be applied to the skin, hair, nails and lips of the human body to clean, protect, beautify, decorate or treat the body 	 Cosmetic  Skincare  Sunscreen				
Daily Necessities 	<ul style="list-style-type: none"> Chemicals for daily use, mainly for cleaning, stain removal,, sanitizing and sterilizing, widely used in households. 	 Laundry Detergent  Shampoo  Dishwash				
Home Utensils 	<ul style="list-style-type: none"> Kitchenware, tableware, tools, cleaning utensils and other grocery items for daily use. 	 Utensils  Tableware  Cleaning Supplies				
Footwear, Apparel& Accessories 	<ul style="list-style-type: none"> Made of textiles, metals, etc. for wear and have some decorative functions, also include watches, necklaces and other jewelry. 	 Shoes  Clothes  Jewelry				
Furniture Appliance 	<ul style="list-style-type: none"> Movable objects that support various human activities, and machine which assists in household functions such as cooking, and food preservation. 	 Home Furniture  Telecom Equipment  Electric Appliance				

The characteristics of FMCGs lead to low brand loyalty among consumers, **indicating a huge demand for efforts to retain and acquire consumers as well as a vast potential market space for new products and brands.**


Lower purchase frequency, longer shelf life and higher customer loyalty all together leads to limited demand for product marketing.

Note: Other consumer goods include home utensils, footwear, apparel and accessories, furniture appliance, and others.

Source: China Insights Consultancy

FMCGs

 Low/Short

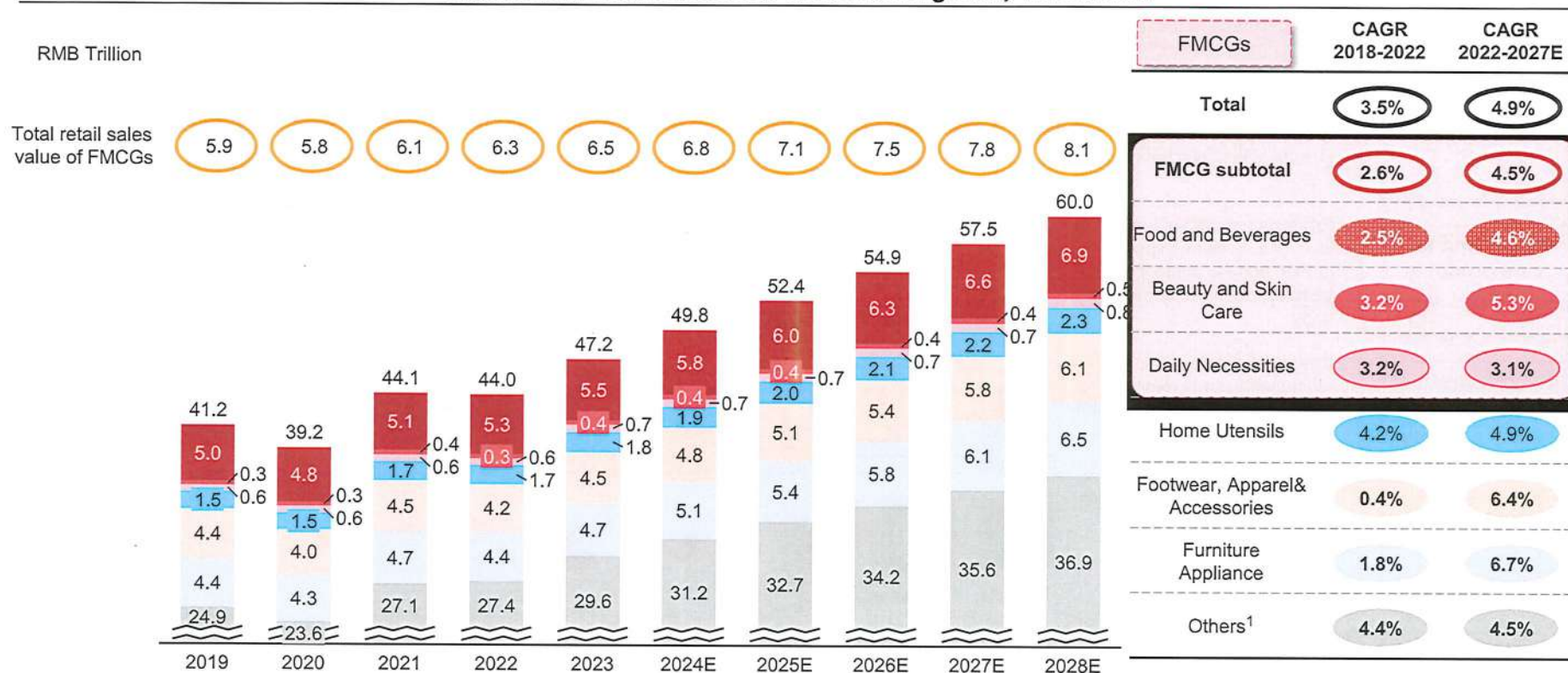
 High/Long



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China is one of the world's largest consumer market, of which the FMCG industry accounts for a significant share, and the FMCG industry is expected to continue to expand as the standard of living of Chinese residents improves and consumption upgrades continue.

China's total retail sales value of consumer goods, 2019-2028E



Key Analysis













- As one of the world's largest consumer market and benefitting from the healthy macroeconomic environment and rising per capita disposable income in past decades, China has experienced a stable growth in the retail sales value of consumer goods over the past five years with increasing product diversification offered to consumers, notwithstanding impact from COVID-19 pandemic since 2020. The total retail sales value of consumer goods in China increased from RMB41.2 trillion in 2019 to RMB47.2 trillion in 2023 at a CAGR of 3.5% from 2019 to 2023, and is expected to reach RMB60.0 trillion in 2028 with an expected CAGR of 4.9% from 2023 to 2028.
- As an important category in China's consumer market, fast-moving consumer goods ("FMCGs") generally comprise daily-use products, including food and beverages, beauty and skincare products and daily necessities. FMCGs are characterized by shorter shelf life, higher consumption frequency and highly iterative preferences from consumers, exhibiting distinctive characteristics compared with other consumer goods, such as home utensils, footwear, apparels and accessories, furniture appliances and others.

Note: 1. Others include dining, tobacco, office supplies, petroleum, automobiles, decoration, medicine, and communication equipment.

Source: NBS, China Insights Consultancy

On the other hand, the FMCG brands can be divided into two categories according to brand scale, namely established brands and emerging brands.

Analysis of FMCG brands by brand scale, 2022

	Established Brands	Emerging Brands
Definition 	<ul style="list-style-type: none"> Established brands were typically founded before 2015, and have a significant level of awareness within a specific category or market segment. 	<ul style="list-style-type: none"> Emerging brands refer to brands that were established in or after 2015, or some regional brands that only have a regional or local market coverage, including those with an annual revenue of less than RMB100 million
Business Scale 	<ul style="list-style-type: none"> The single brand's annual sales value is above RMB100 million. 	<ul style="list-style-type: none"> N/A
Development Strategy 	<ul style="list-style-type: none"> Marketing strategy: Abundant marketing budget Product strategy: Having core products with high consumer awareness. Continuously launch new products and seek to build matrix of products and pipelines to sustainably drive the brand's growth dynamics, and keep consumers freshness by new products 	<ul style="list-style-type: none"> Marketing strategy: Some brands may pursue ambitious marketing goals and have high marketing budget, but most of the emerging brands have limited marketing budget due to the small scale Product strategy: Strive to improve existing core products' operation and marketing campaigns, and also make continuous efforts to launch new products
Representative food and beverages brands 	<p>~700</p> 	<p>~50,000</p> 
Representative beauty and skin care brands 	<p>~300</p> 	<p>~25,000</p> 
Representative daily necessities brands 	<p>~400</p> 	<p>~15,000</p> 






XX Number of brands in the industry, 2022

Source: China Insights Consultancy

Launching new products is a common strategy for FMCG brands of various sizes to sustain growth. This strategy involves introducing new brands, inventing new categories, and adjusting the taste, formula, and appearance of existing products.

Overview of FMCG new product form

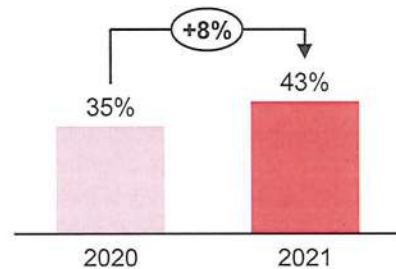
- To address the diversified consumer preferences that keep evolving, continuous innovation and launching new products has been a common strategy for various FMCG brands to sustain growth, where new products refer to products with new brands, categories, taste, formula, or appearance that have been launched in the market for less than one year. And generally, once products have been launched on the market for over one year, they will be deemed as mature products.
- For the consumer goods market as a whole, taking Tmall as an example, about 4 million new products were released on the platform in 2016. This number has exceeded 200 million in 2021, with an rapid increase of new product SKUs.

	Description	Key Purpose	Selected Case
New Brand	New brands that are incubated by established brands or companies, and completely new brands founded by start-up companies.	<ul style="list-style-type: none"> Create new image and explore new markets ... 	<p>Founded in 2016, Yuanqi Forest with its novel brand positioning and product portfolio of sparkling water, tea drinks and functional drinks has achieved rapid development.</p> 
New Category	Newly launched product categories that are not originally covered by the company	<ul style="list-style-type: none"> New product positioning New consumer group New geographic area ... 	<p>Wang Xiao Lu launched duck tongue products in addition to the original chicken feet products.</p> 
New Taste	Flavors that have not been introduced to the market before. Some flavors are only available within certain time frame or geographical regions	<ul style="list-style-type: none"> Enhance the frequency of purchase and penetration of the product in a specific group of people Draw positive market attention by providing limit and special products to pique customer interest. 	<p>Lay's launches Cherry Blossom Limited Flavor Chips in the season of cherry blossoms.</p> 
New Formula	Upgrading or transformation of the company's original products, including adjusting product formulations or ingredients.	<ul style="list-style-type: none"> Enhancement of product features or optimization of existing products to improve its market competitiveness and extend product life ... 	<p>Estee Lauder launches its 7th generation Advanced Night Repair Serum and adds new anti-aging ingredients into its recipe to address wrinkles in addition to repairing skin condition.</p> 
New Packaging /Shape	Adjustment of the appearance of existing products, design, other product appearance features, etc. Sometimes limited in time and region.	<ul style="list-style-type: none"> Market product and promote sales effectively Enhance product image and appeal ... 	<p>Oreo and Disney co-branded a series of Disney packaging products to facilitate brand promotion.</p> 

New products are placed as an important driver of China's consumption and FMCG industry. While bringing higher sales to the industry, it enables brands to expand their customer base, helps emerging brands rise quickly, and drives established brands to upgrade.

1 New products drive industry-wide business to increase, bringing higher sales growth rate

New products' contribution to sales value on Tmall, 2021*



New products enjoys higher growth rate

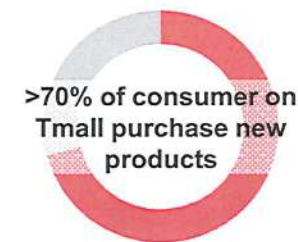
+72%

Higher sales growth rate on Tmall compared with established products in 2021*

- New product sales account for more than half of the total sales on Tmall. New products has become a key driver in consumption, and in turn the growth in sales of new products typically exceeds the overall growth rate of their respective product categories.

2 New products can help brands expand their consumer base

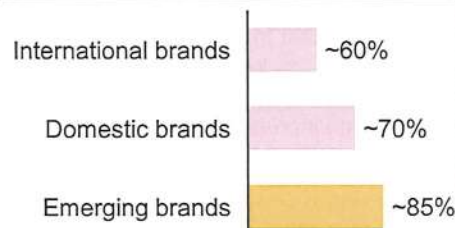
Percentage of new product consumer of total consumer on Tmall*, 2021



- As a large number of consumers continue to pay attention to new products and are willing to try them out, brands are placing increasing emphasis on introducing new products to attract new consumers and fans.

3 Various emerging domestic brands achieve rapid growth with new products

The proportion of new product of different brands in terms of SKU*, 2021



- More than **40%** of the transaction volume of Tmall 618 in 2022 is contributed by new products.

- Emerging brands pay greater effort in launching new products, with over 80% of their store offerings consisting of new products. Successful new product launches can help emerging brands achieve massive exposure in a short period of time and attract more consumers.

Value of new product

4 Established brands launch new products to build additional growth engine



White Rabbit launched perfume, which ignited discussions among netizens and gained massive exposure.



Skippy introduced new flavors of nuts in an attempt to create snacks that would connect emotionally with consumers.

- Established brands can expand into new categories and consumers with the launch of new products, while generating buzz and increasing brand exposure and awareness.

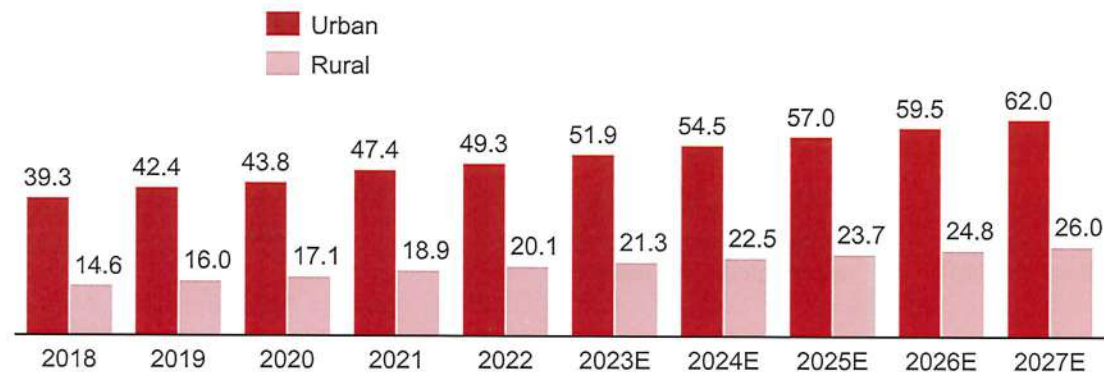
Note*: according to 2022 New Product Marketing White Paper published by Alimama.

Source: Alimama, Focalcrest, Brand official website, China Insights Consultancy

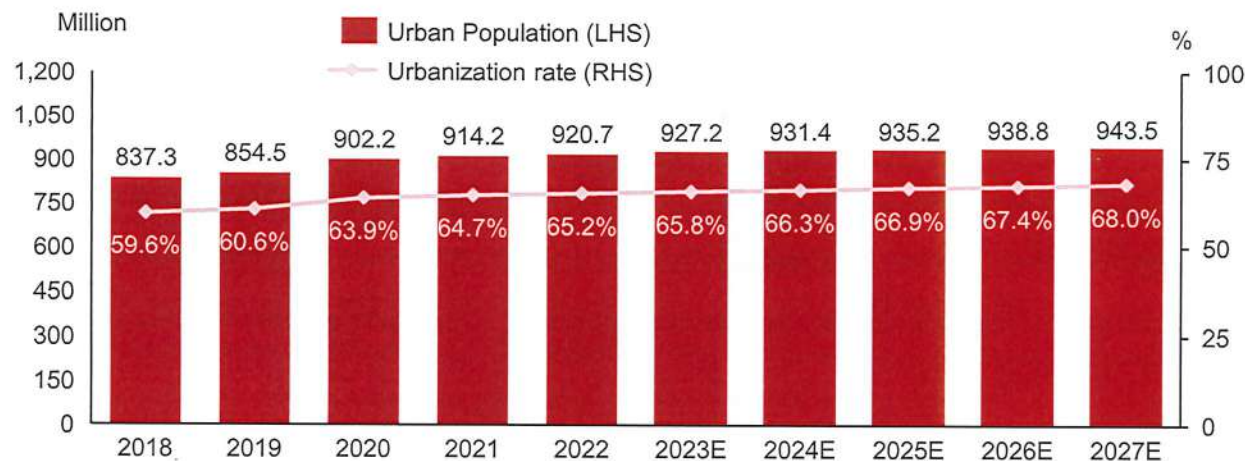
The rising living standards and changing consumer attitudes of China's residents are fueling the overall expansion of China's FMCG industry, while driving the release of demand for more diversified products.

Per capita disposable income in China, urban and rural, 2018-2027E

RMB thousand



Urban population and urbanization rate, China, 2018-2027E



Key Analysis





- The continuous increase in per capita disposable income, both in urban and rural areas, is indicative of an overall improvement in living standards for China's residents. This is especially true of the middle class and the younger generation, which constitute the major groups of consumers with these consumers generally attaching a greater degree of importance to improvements in their quality of life after their basic needs for food and clothing have been adequately addressed. They tend to and are willing to pay for products that add to their own sense of personal satisfaction and higher living standards.
- The proportion of expenditure on non-essential products is also expected to further expand. The ongoing trend towards consumption upgrading in China has driven consumers to look for more unique consumer products and has increased their interest in trying out emerging brands and new categories, especially on FMCGs. They have personalized and customized needs and pursue products based on personal tastes and interest. The purchasing preference of consumers is expected to gradually shift from standardized and basic products to tailor-made and relatively more personalized products, which also motive brands to develop and launch increasing number of new products.
- This trend is expected to persist with the ongoing increase in urban population and urbanization rate. Consequently, the domestic consumer market's purchasing power is expected to strengthen, leading to increased consumer confidence and evolving attitudes towards consumption.

China is now in an era where consumption is changing to emphasis on quality and personality, and demand is becoming more diversified and fickle, so brands need to introduce more novel and unique products to satisfy the needs of the new generation of consumers.

Overview of consumer philosophy in different eras in China

High

Low

Era	1980-2000 Subsistence consumption	2000-2010 Personal consumption	2011-2017 Brand consumption	2018 – present Quality consumption
GDP per capita	USD 300-900	USD 1,000-4,000	USD 5,000-10,000	USD 10,000+
GDP growth	~8%	~12%	~7-8%	~6%
Major events	Reform and open-up, the start of the market economy	Taobao and other e-commerce platforms appear and are gaining popularity China joined WTO in 2001	Smartphones are becoming popular and the speed of information transmission is rising exponentially	Live-streaming e-commerce, short video, express delivery and various new channels have become an inseparable part of people's lives.
Major Developments	Color TVs, washing machines and refrigerators are becoming common in households, and department stores are meeting basic consumer needs.	Families are beginning to accumulate wealth, and brand awareness is gradually rising.	Material affluence has led to high-end consumption and branding, and the use of material consumption to enhance personal appearance and social status.	The Gen-Z generation, born in an era of relative material affluence, has become the leading consumer group.
Price Sensitivity				
Consumption characteristics	Satisfy basic living needs	Functional consumption is predominant	Focus on brand	Great attention to personalization, fashion, and quality, and increasingly diversified
Marketing approach	Paper media Outdoor marketing	TV advertising	Online advertising	New models such as social media, short video platforms, live streaming, and VR/AR have emerged to interact directly with consumers and provide a more immersive experience.

Key features of consumers



Personality



Diversity



Interactions

...



Ever-changing

Impact on brands

- ✓ Continuously introduce new products and concepts
- ✓ Greater emphasis on interaction with consumers and consumer experience
- ✓ Continued marketing to occupy the minds of consumers

The consumer and FMCG industry continues to enjoy macro policy support that stimulates domestic market demand, of which forming a major domestic economic cycle has become one of the key national strategies.

Support policies related to consumer industry and FMCG industry in China, 2022

	Policy	Year	Authority	Main Context
A	Strategic Planning Outline on Domestic Demand Expansion	2022	General Office of the State Council	<ul style="list-style-type: none"> Enhance the fundamental role played by consumption in expanding domestic demand. Address the problems of the imperfect mechanism of the consumption system.
B	Opinions on Further Unleashing the Potential of Consumer Spending and Promoting the Sustained Recovery of Consumption	2022	General Office of the State Council	<ul style="list-style-type: none"> Stabilize service market entities through tax relief and other means. Coordinate the use of existing fiscal funding channels to support consumption-related infrastructure. Accelerate the development of international consumption center cities.
C	Implementation Plan for Accelerating the Cultivation of New Types of Consumption	2021	NDRC and other 27 departments	<ul style="list-style-type: none"> Cultivate and expand new retail formats such as e-commerce platforms, smart stores, and live-streaming economy. Increase financial and fiscal support with social capital guidance.
D	Notice Boosting the Consumption of Major Durables and Key Consumer goods and Unleashing Consumption Potential in Rural Areas	2021	Ministry of Commerce and other 11 departments	<ul style="list-style-type: none"> Boost catering consumption by improving relevant support policies. Promote the development of green catering; improve the rural goods circulation system with financial support. Promote rural consumption driven by township areas.
E	Work Plan for Domestic Demand Expansion	2020	NDRC	<ul style="list-style-type: none"> Reduce the service fees involved in opening stores. Promote the integration of online and offline development. Open up new modes of service consumption.
F	Opinions on Accelerating the Development of New Types of Consumption Driven by New Business Forms and Patterns	2020	General Office of the State Council	<ul style="list-style-type: none"> Further cultivate and expand various new consumption formats and models, promote the two-way acceleration of online and offline consumption. Promote the standardization of new consumption standards.
G	Opinions on Supporting Sound Development of New Business Forms and New Modes, and Activating the Consumer Market to Drive and Increase Employment	2020	NDRC and other 10 departments	<ul style="list-style-type: none"> Encourage enterprise intelligent upgrading and business model innovation, develop new ways of life consumption, and cultivate high-end online brands. Encourage various financial platforms and institutions to implement certain service fee reductions for small and medium-sized enterprises.
H	Implementation Opinions on Promoting Consumption Expansion and Quality Improvement and Accelerating the Creation of a Strong Domestic Market	2020	NDRC and other 22 departments	<ul style="list-style-type: none"> Promote the expansion and improvement of consumption from six aspects: market supply, consumption upgrading, consumption network, consumption ecology, consumption capacity, and consumption environment. Strengthen the top-level design of the tax-free system to remove obstacles to the development of the consumption industry.

1 Consumption is the driving force of the domestic economy

- Consumption is the key element and important engine to the domestic economic cycle. Comprehensive measures should be taken to release the potential consumption demands.

A B C D E F G H

2 Fiscal Policy Support

- The financial system is encouraged to lower interest rates, reduce fees, optimize credit management, and provide support to the industry.
- The tax system will be improved to promote the development of the consumption industry.

B C D E F G

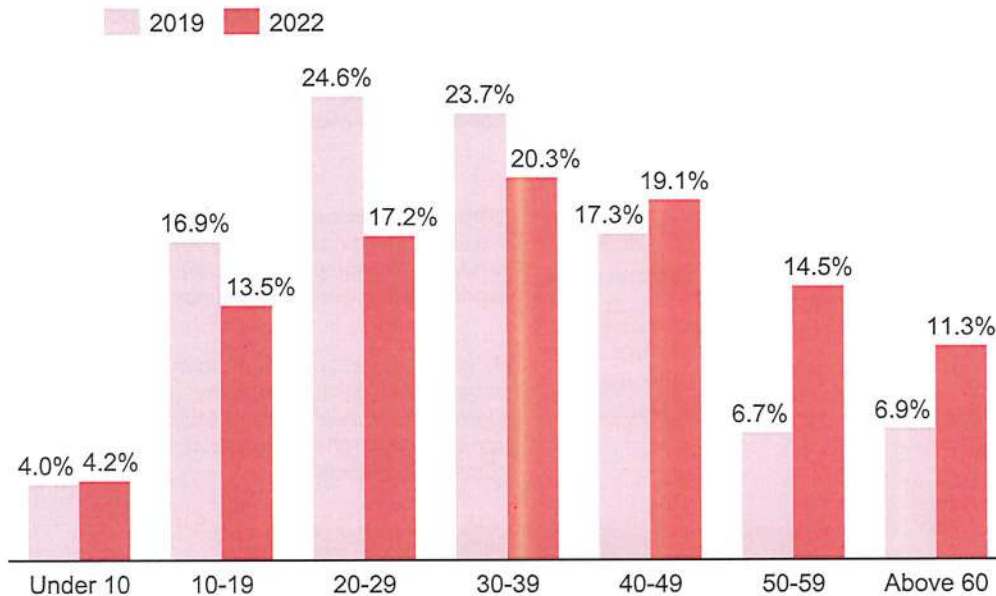
3 Promote the development of new business model

- Accelerate the construction of new-generation information infrastructure, fully unleash the potential of the online economy, and further expand domestic demand.
- Promote the popularization and application of new consumption models and scenarios.

C F G

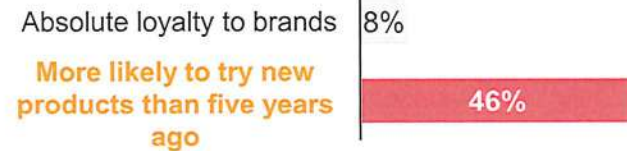
Gen-Z and urban white-collar workers have gradually become the major consumers group in China, and they attach greater importance to self-expression and are more willing to try new products.

Changes in the age structure of China Internet users, 2019-2022



- ✓ **Urban white-collar workers born in the 1980s and 1990s:** They are still in the stage of career development, with a fast-paced work rhythm and high income levels. However, they face pressure from high consumption and living costs, and are known as "invisible poor". These young and energetic individuals are highly focused on self-value improvement (skincare and beauty products etc.), pursue high convenience in consumption, are willing to try new things, and are enthusiastic about recommending or exploring products on social media platforms such as Xiaohongshu and Weibo.
- ✓ **Generation Z born in the mid-1990s:** They are mostly living in first-tier cities, are independent and digitally native, and are enthusiastic about using the internet for socializing, entertainment, and building interest circles. Growing up in affluent material conditions, they have a strong consumption energy and a preference for online shopping. They are good at absorbing new knowledge and are passionate about novel and interesting things. Compared with other age groups, Generation Z place particular emphasis on appearance, and are loyal followers of high appearance value products.

Changing consumer group is reshaping the market

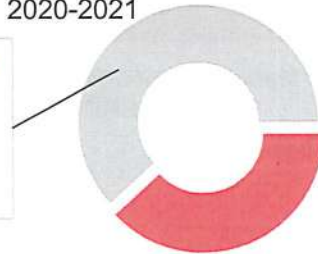


- ✓ As online consumers become younger, their loyalty to brands continues to decline.
- ✓ Only 8% of consumers consider themselves absolutely loyal to a brand.

Top players rapidly changing positions

Overlap ratio of TOP100 brands in Tmall 2020-2021

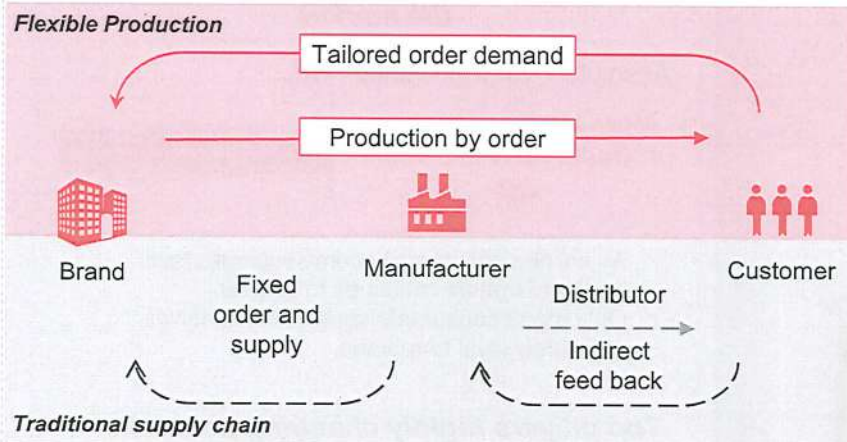
63% of brands failed to consistently enter the top brand list



- Brands that can consistently enter the Top saleser list
- ✓ Due to intense competition among businesses, top players rapidly changing their leading positions within a two-year span.
- ✓ More than 60% of businesses lose their top positions in the competition.

The increasingly mature infrastructure of the FMCG industry in China, including flexible production, intelligent logistics and diversified channels, is expected to continue to support the launch of new products and healthy growth of FMCG brands.

Flexible production and supply chain

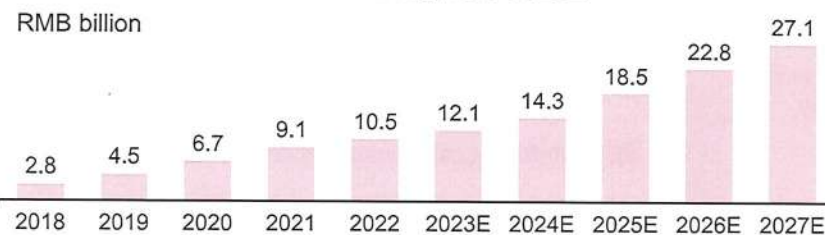


Flexible production addresses tradition models' pain points

- | | | |
|---|----------------------|---|
| Mismatch of supply and demand | Adjustable supply | ✓ Flexible production enable brands to produce by order and adjust the production capacity swiftly based on consumer demand. |
| High cost of adjusting production lines | Customization | ✓ With the flexible supply chain, FMCG brands can flexibly adjust the form and design of products produced to address personalized and customized product demands from consumers. |
| No feedback on consumer | Information feedback | ✓ By gathering direct feedback from customers, suppliers can tailor and upgrade product features to better meet their needs, establishing an efficient communication channel and a comprehensive customer database. |

Intelligent and efficient logistics

Market size of intelligent logistics equipment applied in FMCG industry, 2018-2027E



- Measured by the revenue of suppliers, the market size of intelligent logistics equipment applied to the FMCG industry continues to rise. The adoption of intelligent logistics equipment could effectively improve the timeliness and reliability of logistics and warehousing. Such investment is expected to help the FMCG industry to improve efficiency of their supply chain and fuel the healthy growth of the industry.

Diversified channels

China's FMCG retail sales value breakdown by channel, 2021



- FMCG brands can leverage the availability of diverse marketing channels to offer consumers expedient and accessible shopping options, allowing them to purchase products anytime and anywhere. This not only increases product exposure but also overcomes the limitations of geography and time in sales.

In China's FMCG industry, domestic product brands have surged in recent years. Consumer enthusiasm for domestic brands has increased significantly.

Fast-growing domestic FMCG brands in China, 2022

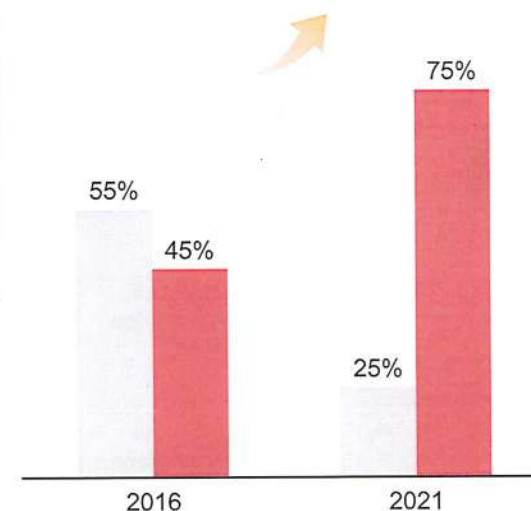


The percentage of interest in domestic and foreign brands, 2021

Foreign brands Domestic brands

Interest in domestic brands increased significantly over the past few years

Consumers' interest in domestic brands is 3 times that of foreign brands in 2021



- In recent years, the number of domestic product brands have emerged in the FMCG industry, including food, beverage, beauty and skin care, instant coffee & tea drinks, and daily necessity products. Driven by high-quality products and technological advancements, consumers have shown a significant leap in their interest for domestic products.
- The rapid development of FMCG brands enables accurate insight into current consumer demands and has increased the competitiveness of domestic products in the China's FMCG industry.

Social media has revolutionized marketing by providing far-reaching tools that allow popular FMCG products to be shared and posted instantly, easily reaching vast customers within a tap way.

MAU of leading social media in China, million, 2022.12



Vibrant community gives users access to a wider range of new products and lifestyles

~300 million
average daily search volume



20 million+

Monthly active content creator



30 billion+

Average daily exposure



400 million+

Daily user interactions



3 million+

Daily posts



Viral short-video platform set trends for new lifestyle

~1 million
vendors on Douyin Shop

400 billion+
monthly hot video views*

1 million+
monthly hot video*

300 million+
monthly new fans attracted by hot video*

700k+
monthly hot video creator*



Live stream provides a channel for new product promotion

~35 billion
live stream revenue in RMB

~356 million
average DAU

~280 billion
total views for top 10 hot videos

2.4 trillion+
Live-streaming interaction

~400
livestream categories

~130 min
average daily time spent per DAU

2 million+
creators with 10k+ followers

- The rise of user-generated content social platforms has brought about a new transformation in the distribution and marketing of information. With the increasing popularity of social platforms such as Weibo, Doyin, Kuaishou, and Xiaohongshu, it has also become one of the main sources of information for the public.
- Popular user-generated content social platforms have brought viral trends drawing massive attention from users because of their wide-reaching publicity and profound user base. This ability to create customer influence provides brands a far-reaching channel to launch new product.

Note: all number is as the end of 2022 except otherwise noted.

Source: China Insights Consultancy, Annual reports

Trend of China's FMCG industry

Trend of China's FMCG industry

1 Accelerated transformation of established FMCG brands

- Facing the everchanging consumers and increasingly intensified competitive landscape, established FMCG brands, while maintaining the company's heritage accumulated over the years, are improving and innovating the original products and constantly cutting into emerging segments. In recent years a growing number of established brands are increasingly willing to take the initiative to meet new market opportunities based on the changing needs of consumers in order to further maintain market competitiveness and sustainable growth. Established brands have strong resources and have built up a loyal customer base, but they still face strong resistance when launching new products or entering emerging markets, and need continuous marketing and promotion.

2 The rising of emerging brands

- Increasingly, emerging brands focusing on niche markets are active in the market. These brands usually take the specific needs of specific consumer groups as the starting point, with a view to occupying as much as possible the consumer demand of a certain segment scenario, such as sports and fitness, office, travel, household, etc. With the advantages of smaller size and flexible strategy, they quickly seize a group of young consumers with fresh and personality consumption needs, creating a "micro-burst" and coalescing into a force to be reckoned with. Their appearance will also force established brands to increase research and development efforts, accelerate the launch of new products.

3 Divergence of consumer demands

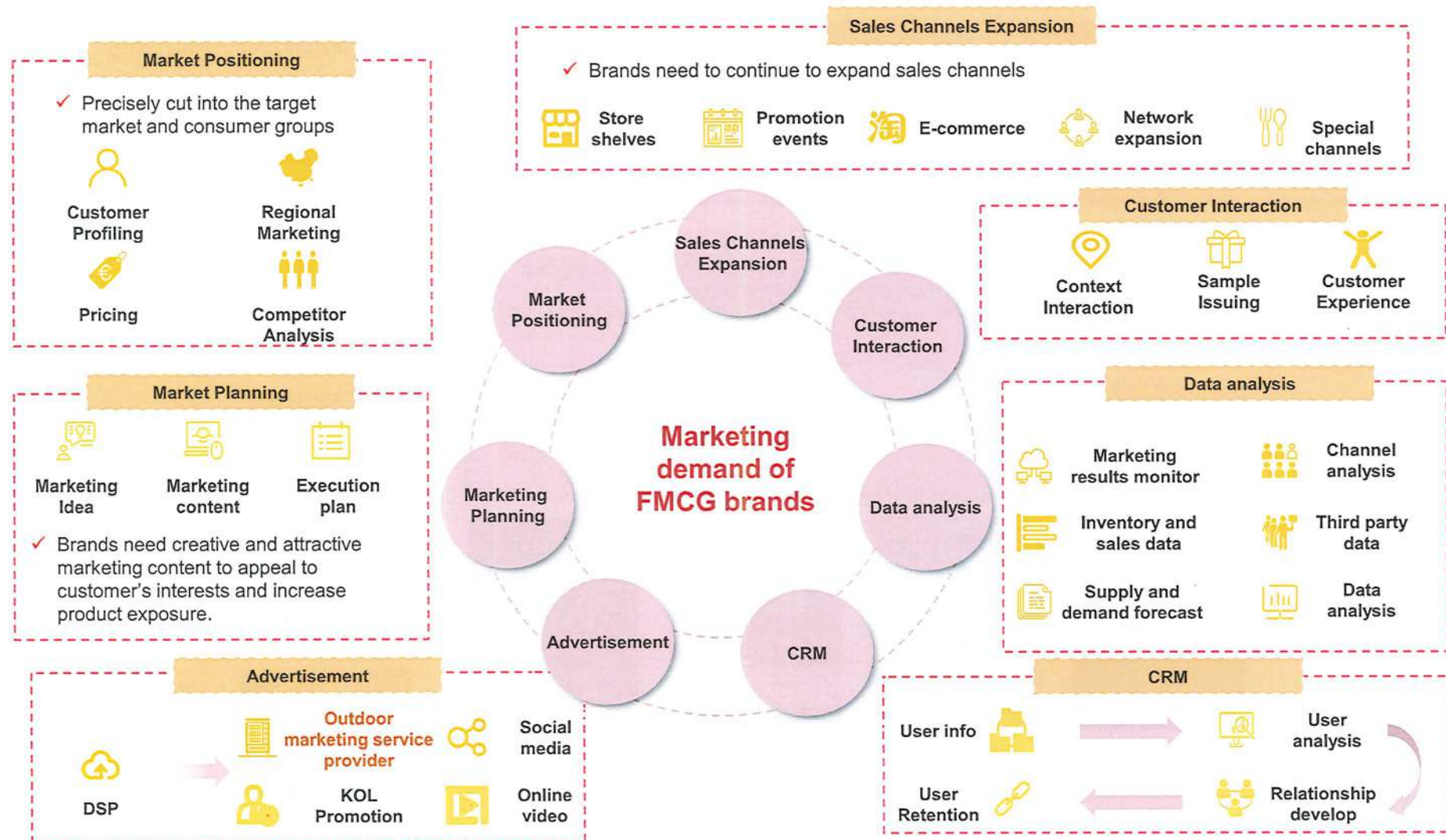
- Since the popularity of smartphones, people have entered an era of mobile internet, and people's consumption preferences are changing as rapidly as trends and internet buzz. At the same time, China's economy developed rapidly in this era, with a significant increase in consumption power as per capita income levels and living standards rose rapidly. Along with the improvement of living standard, people are also emphasizing increasingly more on consumption quality and consumption experience. In such era, consumers' interests become differentiated, attaching great importance to personality and self-expression, and their needs for products become more specific, segmented and precise.



1. Analysis of China's FMCG industry
- 2. Analysis of China's FMCG Marketing Market**
3. Competition Landscape of China's FMCG
Outdoor Marketing Market and China's FMCG
Merchandise Sales Market
4. Appendix







Against the backdrop of the intensifying competition in the FMCG industry, a great variety of marketing demands have emerged from brands to better occupy consumers' minds and enhance their market competitiveness.

Overview of marketing demand of FMCG brands



FMCG marketing can be divided into new product and mature product marketing, where new product marketing focuses more on enhancing public awareness, market recognition, and sales solicitation, while mature product marketing emphasizes broadness of marketing exposure and refreshing brand image.

Comparison of new product marketing and mature product marketing

Marketing strategy	New product marketing	Mature product marketing
Consumer awareness	<ul style="list-style-type: none"> Consumers have little or no idea about the brand, product features, or advantages. They are not clear how the experience of using the product is. 	<ul style="list-style-type: none"> Consumers have some understanding of the brand, product, and product functions, and many may have heard of or used the relevant products before.
Marketing priorities	<ul style="list-style-type: none"> Educate consumers about the functions of the product itself Introduce the functions, benefits and advantages of the product to the consumer Stimulate consumers' desire to try, experience and make purchases Enable consumers to remember the product and recommend it to their family and friends 	<ul style="list-style-type: none"> Deepen consumers' impressions of the brand Enhance the brand image and increase its value
Common marketing methods	<ul style="list-style-type: none"> Outdoor marketing Performance based feed Ads Handing out samples ... Short Video Ads Live streaming KOL marketing ... 	<ul style="list-style-type: none"> Outdoor marketing TV commercials Event Sponsorship APP opening screen advertising ...
Selected cases	<div>  <p>E-commerce Advertising</p> </div> <div>  <p>Samples</p> </div> <div>  <p>Social Media Advertising</p> </div> <div>  <p>Live-streaming e-commerce</p> </div>	<div>  <ul style="list-style-type: none"> Mengniu sponsors the World Cup </div> <div>  <ul style="list-style-type: none"> SATINE ("金典") sponsors online variety show </div>

Launching new products is a common strategy for FMCG brands of various scales to sustain growth. This strategy includes introducing new brands, launching new categories of products, as well as adjusting the taste, formula, and appearance of existing products.

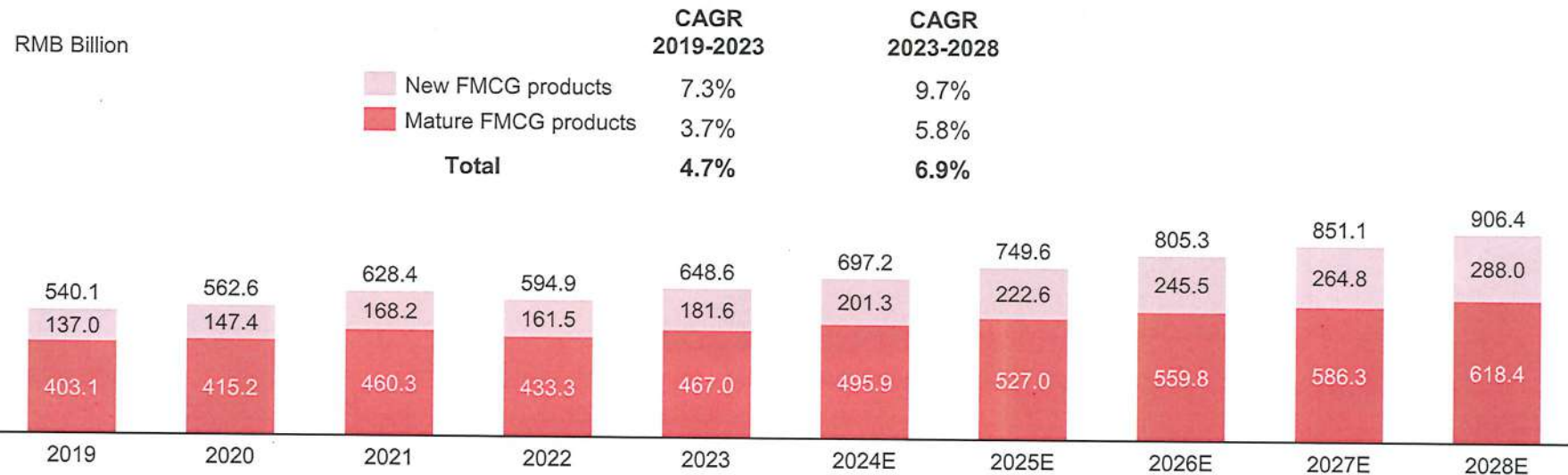
Overview of Selected New Product Marketing Cases, 2022

New Brand	New Category	New Taste	New Formula	New Packaging/Shape
 <p>乐体控 LeWater</p> 	 <p>心相印 Mind Act Upon Mind</p> 	 <p>乐事 Lay's</p>  <p>乐事季节限定樱花和抹茶薯片</p> <p>抹茶味 最好奇的还是抹茶的脏~实在是想不出抹茶的薯片是怎样的, 感觉吃了这个什么都能原谅hhhh 第一口有点像大麦苗, 第二口开始就是抹茶的味道了。越吃越香, 甚至有点奶香味(可能是错觉)? 应该是不苦不甜的抹茶牛奶味, 吃着有点停不下来。喜欢喜欢! 推荐指数 ★★★★★</p>	 <p>东鹏特饮 Eastroc</p>  <p>72小时内再次购买同活动同产品 得3.88元现金红包</p> <p>355ml</p> <p>领取红包券</p>	 <p>良品铺子 BESTORE</p> <p>良品铺子 Bestore</p>  <p>超6斤投喂! 抱走“大熊猫” 畅享29袋美味嗨吃</p> <p>爱吃的大熊猫 净含量: 3052g/袋</p> <p>我喜欢的都在这里!</p>
<ul style="list-style-type: none"> ✓ LeWater is an new brand in the high fiber food sector, and it has launched several products. ✓ It brings new products and experiences to consumers through participation in offline shopping festivals joining hands with Quna. 	<ul style="list-style-type: none"> ✓ Mind Act Upon Mind launched its new wake-up wipers in 2021, collaborating with Quna. ✓ It draws customers' attention by combining online game interaction with offline product testing, inviting customers to test new product. 	<ul style="list-style-type: none"> ✓ Lay's launched its new ground-breaking matcha and sakura flavor chips. ✓ The two products received much attention because the brand invited numerous KOLs and celebrities posting advertising pictures and videos on multiple social medias including TikTok and Red. 	<ul style="list-style-type: none"> ✓ Eastroc launched its new sparkling energy drink catering to the popular sparkling beverage market in 2020. ✓ Every customer can win cash rewards by scanning the barcode on the bottle tab and purchasing another bottle within certain time range. 	<ul style="list-style-type: none"> ✓ Bestore introduced four new animal-shape packaging for its assorted snack product in 2022. ✓ The brand created four relative animal IPs, introducing each animal's age, hobby, and character to draw customers' affection.

- FMCG brands typically develop and launch new products in the market in the first half of a calendar year, and therefore seek our marketing services in the second half of the calendar year. In addition, after a series of promotional activities in the second half of the calendar year by shopping malls and ecommerce platforms, individual consumers usually exhibit relatively lower purchasing willingness towards FMCG products in the following few months.

While FMCG brands continue to increase marketing expenditure for brand and mature product promotion, the marketing market size of new product is gaining a larger share of the total marketing market size.

The market size of China's FMCG marketing market by product maturity, 2019-2028E



Key analysis

- For FMCG new products, marketing programs mainly focus on promoting public awareness, market recognition and sales solicitation; while the promotion of mature products, on the other hand, tends to emphasize the broadness of marketing exposure, improve market penetration, harness competitive barriers, in a way to effectively extend product life. In particular, industry players invest more and more in utilization of advanced technology features and innovative theme designs, so that relevant marketing campaigns may create a more immersive and personalized experience for target consumers, which further results in enhanced incentive for consumers to provide necessary feedback and creates strong consumer bonds that inspire brand loyalty.
- In addition to optimizing product portfolio and performance, FMCG brands in China are also spending increasing amount of marketing and sales expense to further capture market share against the intensifying competitions. The total marketing and sales expense of FMCG industry in China increased from RMB540.1 billion in 2019 to RMB648.6 billion in 2023 at a CAGR of 4.7% from 2019 to 2023, and is expected to reach RMB906.4 billion in 2028 at an expected CAGR of 6.9% from 2023 to 2028.
- Since 2018, both new and mature FMCG products have experienced steady increase in marketing and sales expense, while new FMCG products enjoyed a higher growth rate in this respect, recording a CAGR of 7.3% from 2019 to 2023. The increasing share of the new product promotion in the total marketing budget suggests the watershed of product promotion in the FMCG industry, where brands allocate strategic advertising resources towards promoting new products once their mature products have gained enough recognition in the market.
- With higher brand recognition from their mature products and more marketing resources at their disposal, FMCG brands can expand their customer reach and diversify their product categories by promoting a diverse range of unique new products to customers.

Note1. Including the marketing and sales expense of the brand marketing as well.

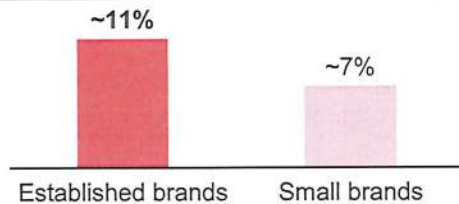
Source: China Insights Consultancy

Despite the vast FMCG marketing market, the FMCG brands are still facing challenges rooted in the traditional marketing approaches

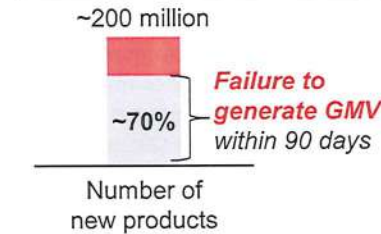
Pain points of traditional marketing

1 Accelerated product introductions intensify competition in the FMCG industry

The marketing expenditure as a percentage of revenue for various brands in China, 2022

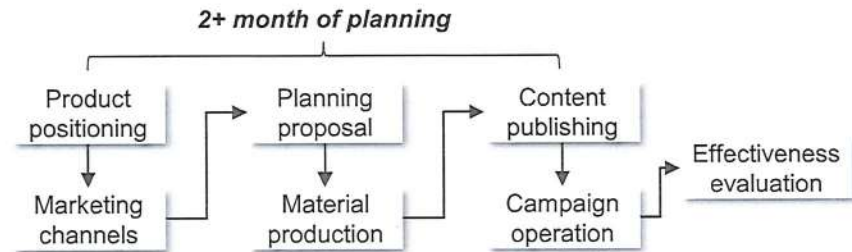


Annually count of new products in China's consumer goods industry



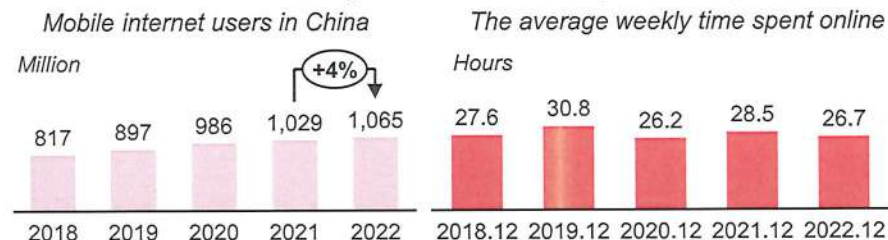
- There were over **200 million** new products of the consumer goods industry released on the Tmall in 2021. However, about **70%** of these new products fail to generate GMV within 90 days after launching.

2 The offline product launch process is characterized by an extensive workflow and a limited scope of audience outreach

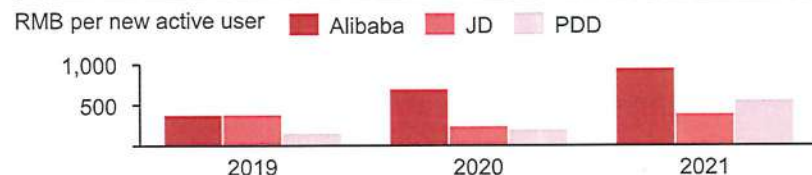


- Conventional offline marketing initiatives typically require a minimum of 2 months from conception to execution and face limitations in reaching multiple target cities quickly due to geographical constraints.

3 The growth rate of Chinese internet users has decelerated, and the cost of customer acquisition has become prohibitively high



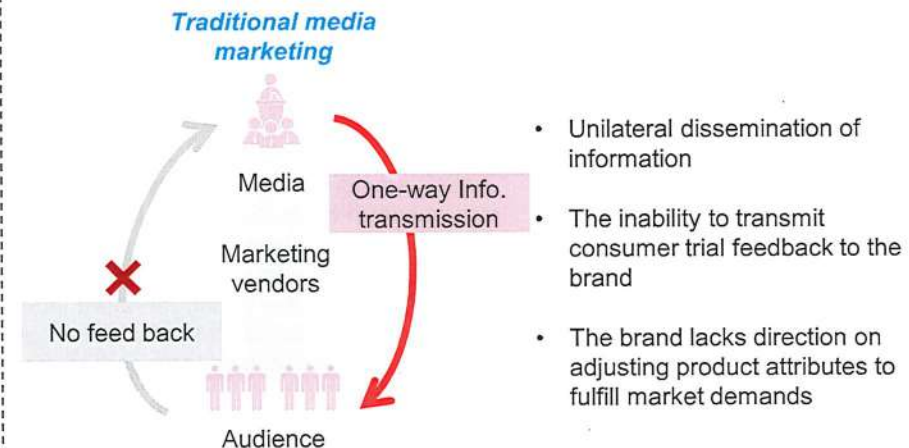
Customer acquisition cost of E-commerce 2019-2021¹



Note1. Refer to the cost paid by major e-commerce platforms to acquire active users, and the active user means the user who makes at least one purchase in 1 year..

Source: China Insights Consultancy, Alimama, CNNIC

4 Conventional marketing lacks consumer feedback mechanism, and results in limited product upgrades



- Unilateral dissemination of information
- The inability to transmit consumer trial feedback to the brand
- The brand lacks direction on adjusting product attributes to fulfill market demands

Though pressured by accelerating new product launches, intensifying competitions as well as evolving and quickly iterative consumer preferences, FMCG brands are typically faced with the following pain points in their marketing efforts.

Pain Points in FMCG Brands' Marketing

1

Significant resource and time investment in new product launches with limited consumer reach

- It is usually costly and time-consuming for FMCG brands to carry out on-site marketing events. For instance, for events taking place in supermarkets, FMCG brands have to bear a broad range of fees, including supermarket shelving fees, delivery expenses and manpower costs. In addition, the cycle from new product marketing planning to market launch generally takes at least two months for FMCG brands.
- Notwithstanding such heavy investments, the effect of consumers' purchase conversion is generally limited, given that FMCG brands' on-site marketing usually heavily relies upon the number of marketing staff involved and their experience in acquiring and retrieving consumers' feedback therein. Furthermore, the limited geographical coverage of on-site marketing makes it difficult for new products to spread quickly in multiple cities at the same time.

2

Close-to-saturation online traffic and high consumer acquisition costs

- The overall public domain online traffic in China covering e-commerce, social platforms and search engines, etc. was close to saturation in recent years, among which that of e-commerce had been dominated by a few leading Internet companies. Accordingly, the cost of consumer acquisition through these online channels kept increasing. For instance, the consumer acquisition cost of mainstream e-commerce platforms exceeded RMB300 per capita in 2022. With the acceleration of new product launches and increase of marketing expenses, FMCG brands are eager to seek alternative marketing services that may exhibit advantages of online marketing channels, such as comprehensive consumer behavior analysis and traceable record, with effectively reduced costs associated therein.

3

Significant challenges in effectively achieving both brand building and encouragement of purchasing behaviors (品效合一)

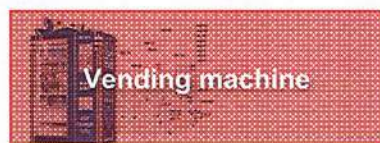
- FMCG brands generally pursue two objectives during their marketing, firstly, the establishment of enduring consumer awareness through the creation of a brand image that deeply resonates with consumers, and secondly, directly arousing consumers' purchasing desire thereby boosting sales. The former typically demands substantial financial investment and sustained advertising efforts, while the latter, even when achieved, usually fails to provide consumers with comprehensive knowledge about the brand, therefore lacking engine to drive their long-lasting purchasing desire. Therefore, FMCG brands urgently need to identify a stable and efficient marketing channel that effectively reaches the target audience while striking a balance between brand building and influencing purchase decisions.

FMCG outdoor marketing refers to the marketing service provided to FMCG brands in public settings, such as office buildings, residential apartments, shopping centers, transportation stations, and streets.

Outdoor marketing empowers brand, consumer, and venue operator

- FMCG outdoor marketing purpose is to enable FMCG brands to deliver product information and brand imagery to consumer in a vivid, intuitive, and impactful manner. This form of marketing encompasses diverse forms, including vending machine marketing, elevator media, transportation station media, fleet media, and others. These scenarios are centered around consumers' daily life, travel, and consumption scenes, capturing their attention through electronic screens, posters, billboards, and other formats. Additionally, the introduction of various advanced technologies such as interactive functions integrated into mechanical devices, big data analytics, and IoT technology make it possible for FMCG outdoor marketing to create engaging and precise marketing effect.
- FMCG outdoor marketing allows brands to initiate a variety of marketing activities in a scalable and cost-effective manner, effectively and rapidly drawing the attention of a broad target audience for relevant products. Such marketing media that provide continuous, stable, and easily accessible reach to the consumer, combined with the new generation of consumers' preferences in sharing consumption experiences through digital forms, may create synergy effects beyond expectations which greatly empower the market awareness and sales of relevant FMCG products.

Overview of outdoor marketing services



Vending machine

Marketing channels:

- Shopping mall
- Office buildings
- Residential apartments
- ...

Marketing methods:

- Vending machine display screen
- Vending machine body advertising
- Proactive interaction with digital features
- ...



Elevator media

- Office buildings
- Residential apartments
- Shopping center
- ...

- Interior and exterior elevator wraps
- Elevator advertising
- Digital screen embedded in elevator
- ...



Transportation station media/ fleet media

- Bus station
- Train station
- Subway station
- Airport
- ...

- Vehicle wraps
- Station/airport billboard
- Station/airport broadcast
- Digital screen within station and fleet
- ...



Others

- Landmarks
- Cinema
- Building façade
- ...

- Advertising graffiti and murals on building façade
- Digital display on building façade or landmarks
- Pre-film advertisement
- ...

Value proposition

Brand

- ✓ Applies more captivating and memorable marketing tools with more affordable consumer acquisition cost

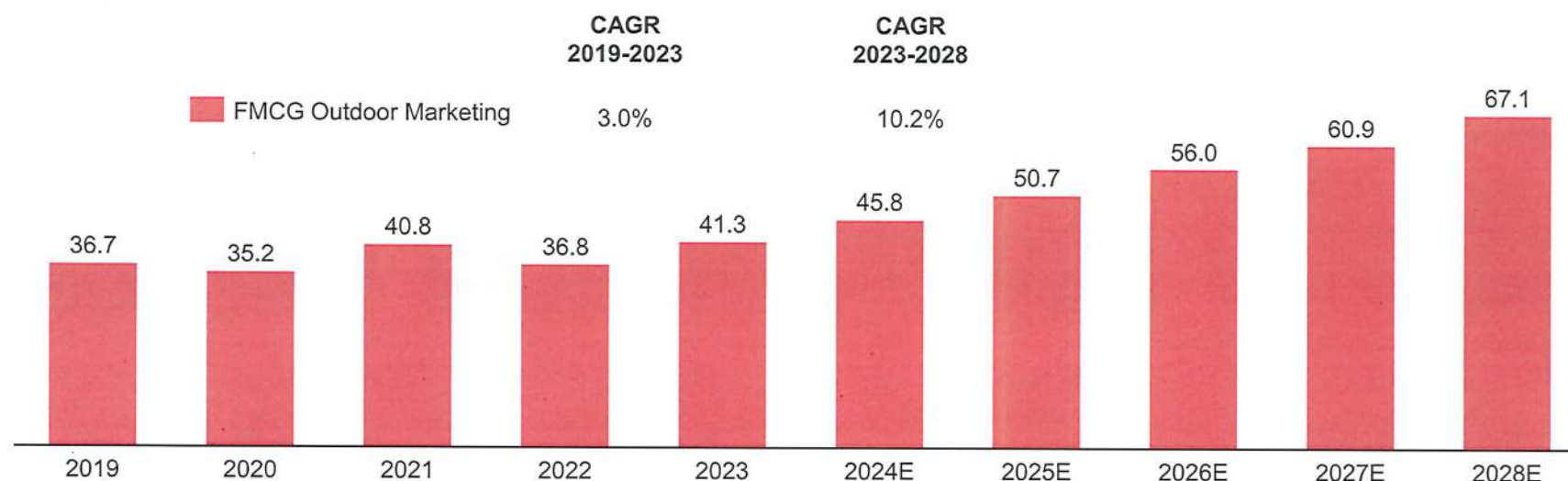
Consumer

- ✓ Empowers consumers with enhanced access to product information and assists them in making purchasing decisions through impactful and targeted outreach, in comparison to other marketing services

Leveraging FMCG outdoor marketing services' advantage and capitalizing on the continuous growth of FMCG industry in China, the FMCG outdoor marketing market is poised for steady growth in the next five years.

Market size of China's FMCG outdoor marketing, 2019-2028E

RMB Billion



Market share of FMCG outdoor marketing



Key analysis

- Capitalizing on the continuous growth of FMCG industry in China and leveraging FMCG outdoor marketing service's advantages and ability to effectively address the unsolved needs from FMCG brands, The market size of FMCG outdoor marketing has witnessed a growth from RMB36.7 billion in 2019 to RMB41.3 billion in 2023 at a CAGR of 3.0% from 2019 to 2023, which is expected to keep growing at an expected CAGR of 10.2% from 2023 to 2028. The following diagram illustrates the market size and market share of China's FMCG outdoor marketing market from 2019 to 2028. Between 2020 and 2022, the FMCG outdoor marketing market, closely tied to public settings such as transportation scenarios, was adversely affected by the COVID-19, which led to less public pedestrian flow and in turn a reduction in FMCG brands' investment in marketing campaigns. Nonetheless, since 2023 and along with the decline of the spread of COVID-19 in China, the FMCG outdoor marketing market is experiencing a resurgence, with significant market growth potential in the future.

Drivers of the FMCG outdoor marketing market in China

- Catering to strong demands from FMCG brands for marketing services that truly captivate consumers' attention and leave a long-lasting impression on their minds, FMCG outdoor marketing has been increasingly empowered by development of technologies, and enjoying growing market recognition and opportunities.



Strong demand from brands for captivating marketing services

- Faced with intensifying competitions as well as short consumer attention span, FMCG brands need to not only continuously launch competitive new products to grasp market opportunities, but also embrace more captivating marketing service at relatively affordable costs. FMCG outdoor marketing, being among the marketing channels closest to consumers' daily lives, is diversifying and enriching its presence, extending from commercial areas to residential zones, and from transportation scenarios to living environments, continually reaching consumers and strengthening brand awareness in a direct and long-lasting manner. Furthermore, leveraging visualized images, FMCG outdoor marketing inherently creates an impactful marketing effect by leaving an intuitive impression on consumers' minds. Consequently, FMCG outdoor marketing has been seen as an essential approach for FMCG brands to capture consumer attention and has gained increasing market recognition.



Development of technologies

- In recent years, technological developments have become increasingly sophisticated and have been widely applied in various marketing scenarios. As a demonstration, the application of technologies such as interactive functions integrated into mechanical devices, big data analytics and IoT technology has strengthened the impact of FMCG outdoor marketing. The advancement of technology has significantly contributed to the creative transformation of marketing campaigns. Fueled by such technological progress, FMCG outdoor marketing now delivers more vivid and memorable experiences for the target audience. Simultaneously, brand owners are provided with an opportunity to assess the effectiveness of FMCG outdoor marketing through data analytics, which enables increasingly precise marketing planning and creative marketing content design, resulting in more personalized and precise audience outreach, ultimately enhancing the efficiency of marketing activities.



The emergence of new outdoor marketing scenarios and facilities

- FMCG outdoor marketing service providers are consistently exploring new display locations for outdoor marketing, serving as a growth engine of the FMCG outdoor marketing market. Concurrently, innovative and convenient facilities, such as vending machines, are emerging and prompting FMCG outdoor marketing service providers to search for new market opportunities centered around daily consumption scenarios and gain added attraction to consumers by means such as integrating interactive functions. The strategic expansion and innovation of FMCG outdoor marketing service, catering to varying consumer needs across diverse scenarios, has become a pivotal growth factor in the FMCG outdoor marketing market.

Trends of FMCG Outdoor Marketing Market in China

Trends FMCG Outdoor Marketing Market in China

1 Increasing emphasis on deeper consumer experience

- In response to consumers' personalization needs and short attention span in the information explosion era, FMCG outdoor marketing services will increasingly focus on creating deeper perceptions for consumers and making stronger and long-lasting impressions on their minds. Such purpose can be effectively facilitated by making technology-enabled multi-sensory interactions with them, as well as getting closer to their actual consumption scenes and penetrating into their daily life scenarios. With such efforts, FMCG brands are enabled to capture consumers' attention and establish deeper bonds with them, achieve higher purchase conversion rate and cultivate consumer stickiness.

2 More comprehensive and robust service portfolio

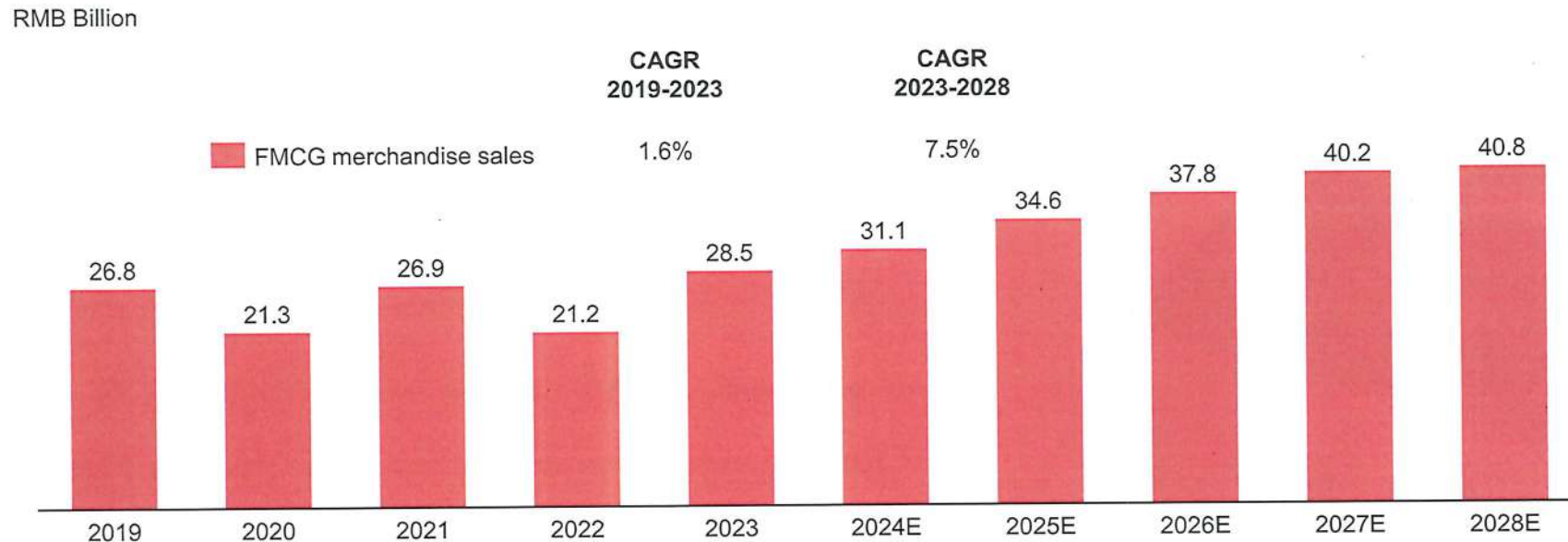
- While FMCG brands are seeking to diversify and optimize their products to cater to iterative consumer preferences and short consumer attention span, FMCG outdoor marketing service providers are also expected to further expand their service portfolio in line. Such efforts include adopting more diversified marketing methods, enhancing marketing customization capability, developing various value-added services including advertising performance analysis and advertising content optimization, as well as leveraging digital intelligence technology to create technological synergies for their services.

3 Increasing demands for one-stop and end-to-end marketing services

- FMCG brands' rapid product launches and increasing demands for marketing generate growing needs for one-stop and end-to-end marketing services. FMCG outdoor marketing service will evolve towards a closed marketing loop covering product positioning, advertising planning, multi-channel delivering, and consumer feedback collecting, therefore further optimizing marketing effectiveness to empower the overall business growth of FMCG brands.

Some FMCG outdoor marketing service providers also engage in the unmanned retail of FMCG products, which refers to the sales of FMCG products through their vending machines.

Market size of China's FMCG merchandise sales market, 2019-2028E



Key analysis



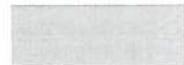


- On top of FMCG outdoor marketing services business, a number of FMCG outdoor marketing service providers also engage in the unmanned retail of FMCG products, which refers to the sales of FMCG products through their vending machines. The merchandise sales value of FMCG products in China increased from RMB26.8 billion in 2019 to RMB28.5 billion in 2023 at a CAGR of 1.6% from 2019 to 2023. As such, the merchandise sales value of FMCG products in China is expected to further increase to RMB40.8 billion in 2028 at an expected CAGR of 13.7% from 2023 to 2028, according to CIC. The following diagram illustrates the market size of China's FMCG merchandise sales market from 2019 to 2028.



1. Analysis of China's FMCG industry
2. Analysis of China's FMCG Marketing Market
3. **Competition Landscape of China's FMCG Outdoor Marketing Market and China's FMCG Merchandise Sales Market**
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Competitive landscape of FMCG outdoor marketing market in China

Competitive landscape of FMCG outdoor marketing market in China, 2022

Rank	Company Name	Overview	FMCG outdoor marketing revenue, 2022, RMB Million	Market share ¹ , 2022
1	Company A	<ul style="list-style-type: none"> Company A is a listed company which has been listed on the Shenzhen Stock Exchange since 2004. The listed entity of Company A has a registered capital of RMB14 billion. Established in 2003 and headquartered in Shanghai, Company A mainly specializes in the development and operation of marketing through outdoor media and engages in outdoor marketing through various media channels, including inner-building advertising media and cinema screen advertising media, etc. 	 4,675	12.7%
2	Company B	<ul style="list-style-type: none"> Company B is a French company which has been listed on the Euronext Paris since 2001. The entity within the group of JCDecaux that predominantly conducts FMCG outdoor marketing in China, located in Shanghai, possesses a registered capital of USD78 million. Established in 1964 and headquartered in France, Company B entered the Chinese market in 2005, initially focusing on bus-stop advertising systems, billboards, public bicycle rentals, and street furniture. The entity within the group that predominantly conducts FMCG outdoor marketing in China is primarily dedicated to outdoor marketing, offering customized bus wraps, screen media, and billboards in locations such as airports, bus shelters, etc. 	 1,050	2.9%
3	Company C	<ul style="list-style-type: none"> Company C is a private company. The registered capital of the head office of Company C is RMB130 million. Established in 2007 and headquartered in Chengdu, Company C specializes in advertising both inside and outside office and residential buildings. Its primary focus is on outdoor marketing through inner-building media, which includes screens located inside elevators, offices, and residential buildings. 	 969	2.6%
4	Company D	<ul style="list-style-type: none"> Company D is a listed company which has been listed on the Stock Exchange since 2015. The entity within the group of Company D that predominantly conducts FMCG outdoor marketing China, located in Shanghai, possesses a registered capital of RMB200 million. Established in 1999 and headquartered in Hong Kong, Company D primarily specializes in the development and operation of outdoor advertising media. Its main focus is on outdoor marketing through transportation station media at locations such as airports, subway stations, and train stations. 	 495	1.3%
5	Our Group	<ul style="list-style-type: none"> Qunabox is a private company. The entity within the group of Qunabox that predominantly conducts FMCG outdoor marketing in China, located in Shanghai, possesses a registered capital of RMB87 million. Established in 2013 and headquartered in Shanghai, the company specializes in FMCG new product marketing. Qunabox engages in outdoor marketing through various marketing services, utilizing vending machines to promote FMCG new products. 	 339	0.9%

Note: 1. The market share is calculated by the company's FMCG outdoor marketing revenue divided by the market size of FMCG outdoor marketing market.

Source: Tianyancha, China Insights Consultancy

Qunabox is the fifth largest solution provider in China's FMCG outdoor marketing market in terms of FMCG outdoor marketing revenue in 2022, with a market share of approximately 0.9%. (2/2)

Competitive landscape of FMCG outdoor marketing market in China, 2022

Rank	Company Name	Overview	FMCG outdoor marketing revenue, 2022, RMB Million	Market share ¹ , 2022
6	Company E	<ul style="list-style-type: none"> Company E is a listed company on the Shenzhen Stock Exchange since 1996. The listed entity of Company E has a registered capital of approximately RMB 1 billion. Established in 1993 and headquartered in Hangzhou, the company specializes in marketing planning, publishing and printing, new media, and outdoor marketing, and more. Company E provides outdoor marketing services in subway stations and street media, including street LED screens and subway broadcasts. 	316	0.9%
7	Company F	<ul style="list-style-type: none"> Company F is a listed company on the Beijing Stock Exchange since 2012. The listed entity of Company F has a registered capital of RMB 204 million. Established in 2009 and headquartered in Beijing, the company specializes in digital marketing, the commercialization of artworks, marketing planning, and device procurement. Company F engages in outdoor marketing through airport marketing media, which includes billboards, lightboxes, LED screens, and more. 	296	0.8%
8	Company G	<ul style="list-style-type: none"> UBOX is a listed company on the Hong Kong Stock Exchange since 2023. The listed entity of Ubox has a registered capital of RMB 757 million. Established in 2011 and headquartered in Beijing, the company is a leading operator in unmanned retail business. UBOX's core business focus includes unmanned retail operations, advertising and system support services, wholesale business, and the sales and leasing of unmanned retail vending machines. 	200	0.5%
9	Company H	<ul style="list-style-type: none"> Company H is a listed company on the Shenzhen Stock Exchange since 2022. The listed entity of Company H has a registered capital of RMB 290 million. Established in 1997 and headquartered in Beijing, the company specializes in the development, operation, and advertising placement on digital media resources within high-speed rail stations. Company H is dedicated to providing outdoor marketing services through media in high-speed rail stations, including LED screens and billboards. 	173	0.5%
10	Company I	<ul style="list-style-type: none"> Company I is a listed company on the Shanghai Stock Exchange since 2001. The listed entity of Company I has a registered capital of approximately RMB 806 million. Established in 1999 and headquartered in Beijing, the company specializes in outdoor marketing, automobile 4S dealership services, car rental, and electric vehicle charging services. Company I primarily conducts outdoor marketing through various media channels, including bus frames, bus shelters, and in-bus advertising media. 	92	0.3%

Note: 1. The market share is calculated by the company's FMCG outdoor marketing revenue divided by the market size of FMCG outdoor marketing market.

Source: Tianyancha, China Insights Consultancy

Competitive landscape of China's FMCG merchandise sales market, in terms of GMV, 2023

Rank	Company Name	FMCG outdoor marketing revenue, 2023, RMB Million	Market share ¹ , 2023
1	Company A	5,906.0	14.3%
2	Company C	1,207.5	2.9%
3	Company B	1,160.0	2.8%
4	Our Group	495.1	1.2%
5	Company D	483.0	1.2%
6	Company F	339.0	0.8%
7	Company E	306.0	0.7%
8	Company H	179.2	0.4%
9	Company G	115.6	0.3%
10	Company I	88.1	0.2%

Competitive landscape of China's FMCG merchandise sales market, in terms of GMV, 2021

Rank	Company Name	FMCG outdoor marketing revenue, 2021, RMB Million	Market share ¹ , 2021
1	Company A	5,327	13.1%
2	Company C	1,200	2.9%
3	Company B	418	1.0%
4	Company D	868	2.1%
5	Company E	345	0.8%
6	Company F	321	0.8%
7	Our Group	311	0.8%
8	Company G	240	0.6%
9	Company H	186	0.5%
10	Company I	104	0.3%

Entry barriers in FMCG outdoor marketing market

Entry barriers in FMCG outdoor marketing market

1 Data accumulation and application of innovative technologies

- FMCG outdoor marketing service providers can leverage innovative technologies to accumulate and analyze operational data, enabling a deeper understanding of consumer demands and precise advertising placement. The accumulated operational data also facilitates AI training, enhancing marketing performance and accuracy, ultimately improving marketing effectiveness. However, for new entrants in the industry, collecting a sufficient amount of operational data within a short period of time can be challenging, hindering precise consumer demand analysis and desired advertising placement results.

2 Industry know-how

- Industry know-how is crucial for FMCG outdoor marketing service providers, including a deep understanding of market trends, insights into customer preferences and creative advertising strategies. By possessing such knowledge, FMCG outdoor marketing service providers can effectively serve FMCG brand customers and establish strong collaborative relationships with a diverse range of FMCG brand customers. New entrants in the industry often encounter challenges due to their limited industry experience and insights. They have to invest considerable time and effort in learning and building trust and cooperative relationships with their respective customers.

3 Geographic location

- The exposure and marketing effectiveness of FMCG outdoor marketing terminals depends largely on their location and potential outreach of target customers. FMCG outdoor marketing service providers with strong bargaining power can secure better locations. However, for new entrants in the industry, acquiring premium location poses a challenge as existing FMCG outdoor marketing service providers have already established stable commercial relationships with venue operators, usually occupying prime locations.

4 Capital Requirement

- New entrants in the FMCG outdoor marketing market need to make a substantial capital investment in procuring advertising placement equipment, such as vending machines, screens, posters and billboards, etc. Simultaneously, in the current landscape of emerging technologies such as big data analytics, various FMCG outdoor marketing service providers have to allocate additional funds towards research and development thereon to maintain their competitiveness in the market. They also need to invest substantially in initial market development, location acquisition, and equipment maintenance. Therefore, a significant amount of capital is required during the early stages of development for new entrants in the FMCG outdoor marketing market.

Major challenges in FMCG outdoor marketing market

Major challenges in FMCG outdoor marketing market

- 1 The FMCG industry is highly sensitive to macroeconomic conditions**
 - The slowdown in macroeconomic growth may lead to a decrease in consumers' purchasing power, resulting in a decline in revenue for FMCG brands and a reduction in their outdoor marketing budgets, which may in turn lead to a decline in FMCG outdoor marketing service providers' revenue.
- 2 Iterating consumer demands and preferences**
 - Consumer demands and preferences are constantly changing, leading to increasing requirements for FMCG product quality, personalization and brand reputation. FMCG outdoor marketing service providers need to continuously innovate, adjust, and optimize their advertising strategies to better respond to the highly iterative consumer demands and preferences, serve brand customers, constantly deliver satisfactory marketing service and help brand customers achieve revenue growth.
- 3 Difficulties in achieving and maintaining high operational efficiency**
 - FMCG outdoor marketing service providers are faced with the challenge in achieving and maintaining high operational efficiency, including implementing an effective advertisement placement strategy to fully utilize their sites and facilities, optimizing their internal operation system through digitalization transformation and acquiring and maintaining favorable sites with affordable costs.

Key success factors in China's FMCG Outdoor Marketing Market

Key success factors in China's FMCG Outdoor Marketing Market

- With continuously developing technologies, some FMCG outdoor marketing services demonstrate better marketing capacities, such as enabling direct interactions with marketing audiences through sound, vision, touch, movement, and even smell while analyzing advertising effectiveness through data analytics and implementing precision marketing via big data, therefore creating a more innovative and personalized experience for consumers while empowering brand promotion and product iteration.

1 Comprehensive and diversified marketing service capabilities

- Leading FMCG outdoor marketing service providers have the ability to provide multi-layered and comprehensive marketing services ranging from online and offline marketing campaigns, on-site flash events, user interaction, offline distribution, feedback collection, to private traffic channeling. A closed-loop marketing process could lead consumers to obtain product information, make purchases, form evaluations and then make recommendations to more people, thereby enabling a more complete and profound marketing effect and enhancing consumer stickiness. In the future, leading FMCG outdoor marketing service providers are expected to further improve and expand their service scope to include diversified value-added services such as training courses, video advertising and various brand name promotional campaigns. Continuously expanding its operations and dismantling the barriers between online and offline realms, foremost FMCG outdoor marketing service providers construct a diverse marketing and service matrix for FMCG brands, accompanied by a more robust marketing toolkit. This capability allows leading FMCG outdoor marketing service providers to systematically explore new customer segments and broaden its business footprint.

2 Technological strengths and operation refinement capabilities

- Leading FMCG outdoor marketing service providers can effectively leverage industrial technology innovations to digitize and automate the promotion of FMCG products as well as enhance the effectiveness of their internal operations. The successful applications of cutting-edge technologies such as big data, AI algorithms and cloud computing involve high technological barriers and require substantial resource investment, thereby reinforcing leading FMCG outdoor marketing service providers' competitiveness. Additionally, they standardize and modularize their entire marketing and promotional process and can formulate new service packages that flexibly cater to customer requirements, and readily replicate benchmark cases for each product segment, thereby enhancing operational margins.

3 In-depth understanding of consumer preferences and industry know-how on market and products

- Leading FMCG outdoor marketing service providers have accumulated deep understandings of consumer needs and preferences as well as FMCG brands' marketing strategies. Therefore, they are able to offer their brand customers with valuable advice on products mass production, geographical layout as well as marketing focus. At the same time, their sharp insights and identification of potential blockbuster products allow them to assist FMCG brands to incubate their next-generation products with great market potentials.

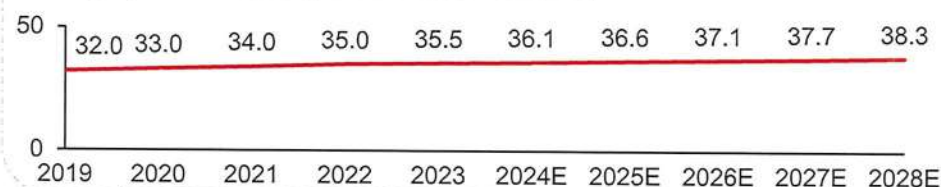
Historical and forecast trends of major cost components of Qunabox's FMCG outdoor marketing services

Major cost components analysis

- The major cost components of Qunabox's FMCG outdoor marketing service mainly consist of the procurement costs of vending machines and information technology service fees.

Average price of vending machines

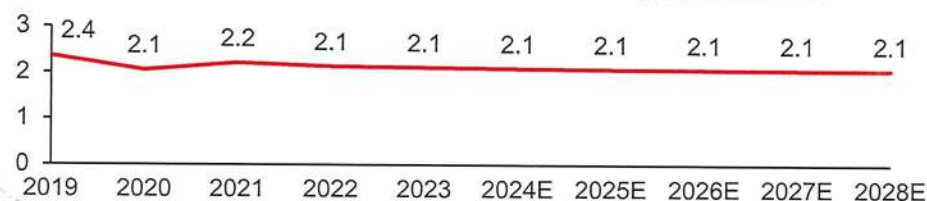
Average price of vending machines, 2019-2028E



- Over the past few years, the procurement costs of vending machines have exhibited a modest upward trend, which was primarily due to the application of various advanced technologies, such as AI technology, as well as the deployment of complex internal operating software and mechanical systems. It is anticipated that in the future, with further application of refined AI functionalities, such procurement costs may continue to experience a slight increasing trend.

Information technology service fees – SMS packages

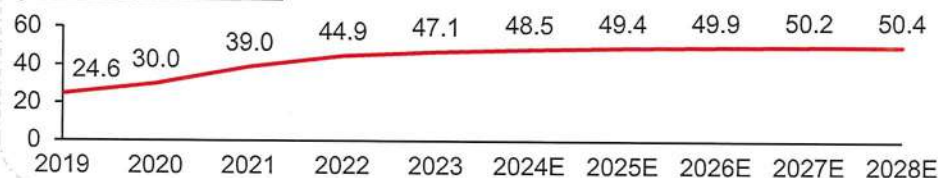
Average price of SMS packages, RMB/100 text messages, 2019-2028E



- Information technology service fees include costs of SMS packages and social media platform resources. With the intensifying competition in the SMS industry, the price of SMS packages has gradually decreased over the past five years and is currently close to cost. It is expected that the price of SMS packages will remain stable in the future, with a slight decreasing trend.

Information technology service fees – Social media platform

Average price of the cost per thousand impressions (CPM) on social media platforms, 2019-2028E



- The advertising costs on social media platforms over the past few years has gradually increased due to the intensified competition for acquiring online traffic, and it is expected to continue a slight upward trend in the future.

Competitive landscape of China's FMCG merchandise sales market in China

Competitive landscape of China's FMCG merchandise sales market in China, 2023

Rank	Company Name	Overview ¹	GMV, 2023, RMB Billion	Market share ² , 2023
1	Company G	<ul style="list-style-type: none"> Company G is a listed company on the Hong Kong Stock Exchange since 2023. The listed entity of Company G has a registered capital of RMB 757 million. Established in 2011 and headquartered in Beijing, the company is a leading operator in unmanned retail business. Company G's core business focus includes unmanned retail operations, advertising and system support services, wholesale business, and the sales and leasing of unmanned retail vending machines. 	2.5	8.8%
2	Company K	<ul style="list-style-type: none"> Company K is a listed company on the Hong Kong Stock Exchange since 2020. The listed entity of Company K has a registered capital of RMB 1 billion. Established in 1996 and headquartered in Hangzhou, the company has established itself as a leading player in the packaged drinking water and beverage market. 	1.1	3.9%
3	Company L	<ul style="list-style-type: none"> Company L is a subsidiary of a company listed on the Shenzhen Stock Exchange since 2017, with a registered capital of RMB 109 million. Established in 2017 and headquartered in Shenzhen, the company specializes in operating AI cabinets and unmanned vending machines. 	1.1	3.9%
4	Company M	<ul style="list-style-type: none"> Company M is a subsidiary of a company listed on the Hong Kong Stock Exchange since 1977, with a registered capital of USD 60 million. Established in 1987 and headquartered in Beijing, the company has established itself as a prominent player in the Chinese beverage market. 	0.5	1.8%
5	Company N	<ul style="list-style-type: none"> Company N is a private company with a registered capital of RMB 43 billion. Established in 2016 and headquartered in Beijing, the company has gained recognition as a prominent Chinese indie beverage brand. 	0.5	1.8%

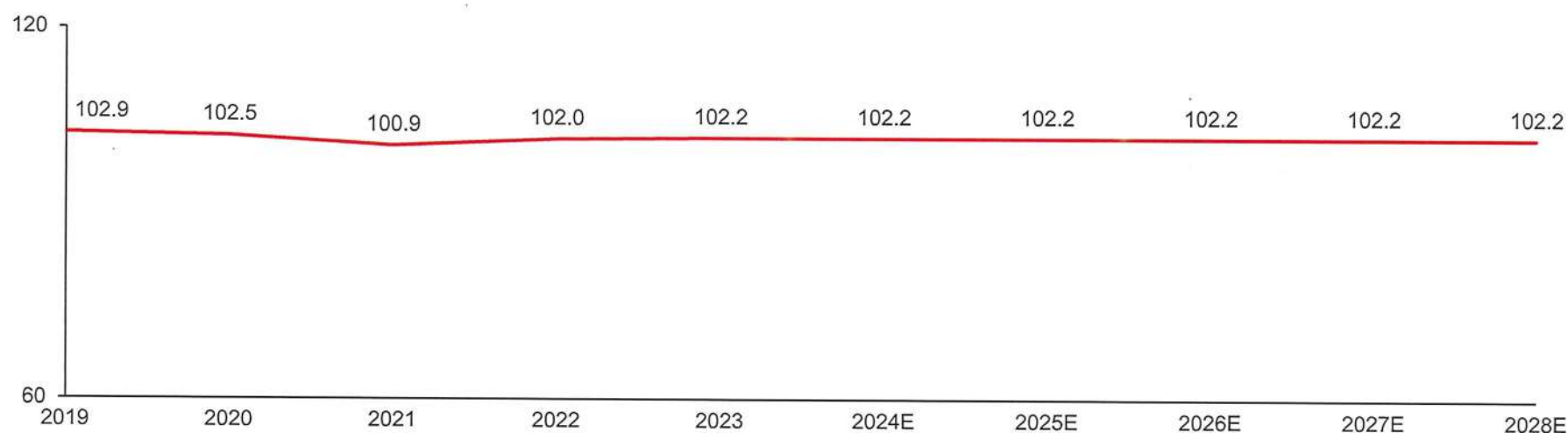
Note: 1. Registered capital refers to the parent company or the entity within the group that primarily operates FMCG merchandise sales business in China.

2. The market share is calculated by the company's FMCG merchandise sales GMV divided by the market size of FMCG merchandise sales market.

Source: Tianyan, China Insights Consultancy

Historical and forecast trends of major cost components of China's FMCG merchandise sales companies

China's consumer price index (CPI), based on the previous year as 100, 2019-2028E



Key analysis

- The major cost components FMCG merchandise sales players mainly consist of FMCG products purchasing costs.
- China's consumer price index (CPI), which reflects price fluctuation of daily goods including FMCG products, has fluctuated around CPI 100 over the past decade, and is expected to remain at this level in the years ahead, therefore, FMCG products purchasing costs in the unmanned retail business is expect to remain stable.



1. Analysis of China's FMCG industry
2. Analysis of China's FMCG Marketing Market
3. Competition Landscape of China's FMCG Outdoor Marketing Market and China's FMCG Merchandise Sales Market
4. **Appendix**

Verification

- According to CIC, FMCG outdoor marketing market accounts for 6.4% market share of the FMCG marketing market in 2023. The FMCG outdoor marketing market is highly fragmented with numerous industry players, resulting in fierce competition within this industry. We are the fourth largest FMCG outdoor marketing service provider in China in terms of revenue in 2023, with a market share of approximately 1.2%, while the largest market player had a market share of 14.3%.
- The size of FMCG outdoor marketing market in China increased from RMB36.7 billion in 2019 to RMB41.3 billion in 2023 at a CAGR of 3.0% from 2019 to 2023, which is expected to keep growing at an expected CAGR of 10.2% from 2023 to 2028.
- According to CIC, the market size of the FMCG outdoor marketing market in China increased from RMB36.7 billion in 2019 to RMB41.3 billion in 2023 at a CAGR of 3.0% from 2019 to 2023.
- The total retail sales value of consumer goods in China increased from RMB41.2 trillion in 2019 to RMB47.2 trillion in 2023 at a CAGR of 3.5% from 2019 to 2023, and is expected to reach RMB60.0 trillion in 2028 with an expected CAGR of 4.9% from 2023 to 2028.
- The market size of China's FMCG industry reached RMB6.5 trillion in 2023, and is expected to continue to grow in line with Chinese residents' living standards improvements and consumption upgrades, according to CIC. As such, China's FMCG industry is projected to reach RMB8.1 trillion in 2028, with an expected CAGR of 4.5% from 2023 to 2028.
- The total marketing and sales expense of FMCG industry in China increased from RMB540.1 billion in 2019 to RMB648.6 billion in 2023 at a CAGR of 4.7% from 2019 to 2023, and is expected to reach RMB903.5 billion in 2028 at an expected CAGR of 6.9% from 2023 to 2028.
- Since 2018, both new and mature FMCG products have experienced steady increase in marketing and sales expense, while new FMCG products enjoyed a higher growth rate in this respect, recording a CAGR of 7.3% from 2019 to 2023. The following diagram illustrates the market size of China's FMCG marketing market by product maturity from 2019 to 2028.
- In 2023, China's FMCG outdoor marketing market accounted for approximately 6.4% of China's overall FMCG marketing market measured by total sales and marketing expenses.
- For instance, the consumer acquisition cost of mainstream e-commerce platforms exceeded RMB300 per capita in 2023.
- The market size of FMCG outdoor marketing has witnessed a growth from RMB36.7 billion in 2019 to RMB41.3 billion in 2023 at a CAGR of 3.0% from 2019 to 2023, which is expected to keep growing at an expected CAGR of 10.2% from 2023 to 2028. The following diagram illustrates the market size and market share of China's FMCG outdoor marketing market from 2019 to 2028.
- We are the seventh, fifth and fourth largest service provider in China's FMCG outdoor marketing market in terms of FMCG outdoor marketing revenue in 2021, 2022 and 2023, respectively, with a market share of approximately 0.8%, 0.9% and 1.2%, respectively. Other major market players in China's FMCG outdoor marketing market primarily Asiaray Media, Beijing Bashi Media, Focus Media, Huamei Holdings, JCDecaux Group, Mega-info Media, Ubox, Voyage Media, and Xinchao Media. The largest market player had a market share of 13.1%, 12.7% and 14.3% in terms of FMCG outdoor marketing revenue in 2021, 2022 and 2023, respectively. The respective comparable revenue and market share of each such service provider in 2021, 2022 and 2023 is shown in the following tables.
- Machine marketing market in terms of marketing revenue reached RMB2.5 billion, and is expected to reach RMB17.1 billion in 2028, representing a CAGR of 46.6%, according to CIC. Our Group ranked the first in 2023 in China's vending machine marketing market, in terms of the revenue generated from vending machine marketing market.
- The merchandise sales value of FMCG products in China increased from RMB26.8 billion in 2019 to RMB28.5 billion in 2023 at a CAGR of 1.6% from 2019 to 2023. As such, the merchandise sales value of FMCG products in China is expected to further increase to RMB40.8 billion in 2028 at an expected CAGR of 13.7% from 2023 to 2028, according to CIC. The following diagram illustrates the market size of China's FMCG merchandise sales market from 2019 to 2028.

Verification

- The FMCG merchandise sales market in China is highly fragmented. Our Group recorded a GMV of approximately RMB0.1 billion in 2023, accounting for a market share of 0.5% in the FMCG merchandise sales market in China.
- According to CIC, FMCG outdoor marketing market accounts for 6.4% market share of the FMCG marketing market in 2023. We are the fourth largest FMCG outdoor marketing service provider in China in terms of revenue in 2023, with a market share of approximately 1.2%, while the largest market player had a market share of 14.3%.
- According to CIC, the market size of FMCG marketing is expected to reach RMB903.5 billion in 2028. Attributable to the prevalence of IoT technologies and the pain points commonly seen in FMCG brands' marketing, the FMCG outdoor marketing market has vigorous market opportunities and huge growth potential. According to CIC, the FMCG outdoor marketing market is expected to grow from RMB41.3 billion in 2023 to RMB67.1 billion in 2028, at a CAGR of 10.2%.
- The size of the FMCG outdoor marketing market in China increased from RMB36.7 billion in 2019 to RMB41.3 billion in 2023 at a CAGR of 3.0% from 2019 to 2023, which is expected to keep growing at an expected CAGR of 10.2% from 2023 to 2028.
- FMCG outdoor marketing market accounts for 6.4% market share of the FMCG marketing market in 2023, and we are the fourth largest FMCG outdoor marketing service provider in China in terms of revenue in 2023, with a market share of approximately 1.2%, while the largest market player had a market share of 14.3%.
- We provided marketing service to 525 brand owners, serving products from 74 emerging brands among the top 100 emerging brands in the industries of beverages, food and daily necessities in China, as measured by revenue in 2023.
- FMCG brands, FMCG outdoor marketing market in China has experienced steady growth in recent years at a CAGR of 3.0% from 2019 to 2023, which is expected to keep growing with an expected CAGR of 10.2% from 2023 to 2028.
- FMCG outdoor marketing market accounts for 6.4% market share of the FMCG marketing market in 2023, and we are the fourth largest FMCG outdoor marketing service provider in China in terms of revenue in 2023, with a market share of approximately 1.2%, while the largest market player had a market share of 14.3%

Verification

- We are a marketing service provider in China, focusing on outdoor marketing for fast-moving consumer goods ("FMCG"). In doing so, we utilize our broad network of vending machines with interactive marketing functions across China, which, by combining with our technology-backed online platform, allow us to provide target consumers with convenient and interesting experience in testing and accessing FMCG that we served, while successfully soliciting and completing necessary interaction and feedback. In particular, we have developed, and equipped our vending machines with, various modules to facilitate technology-driven interactive functions that are crucial for successful marketing events, including scent emitting, movement recognition and voice interaction, making highly efficient and interactive machine-based marketing services possible, and making us the only enterprise in offering such services in China, according to CIC. According to the same source, FMCG outdoor marketing market accounts for 6.2% market share of the FMCG marketing market in 2022, and we are the fifth largest FMCG outdoor marketing service provider in China in terms of revenue in 2022, with a market share of approximately 0.9%, while the largest market player had a market share of 12.7%.
- During the Track Record Period, we provided marketing service to 525 brand customers for approximately 1,698 SKUs of FMCG products, including products from 74 emerging brands among the top 100 emerging brands in the industries of beverages, food and daily necessities in China, as measured by revenue in 2022, according to CIC.
- FMCG outdoor marketing market is one of the subsegment of the FMCG marketing market. In 2022, China's FMCG outdoor marketing market accounted for approximately 6.2% of China's overall FMCG marketing market measured by total sales and marketing expenses.
- Increasing Demands for Vending Machine Marketing Services. Vending machine marketing services refer to FMCG outdoor marketing services that utilize the vending machine as a medium or touchpoint. The vending machine marketing market is a promising subsegment of the FMCG outdoor marketing market, characterized by its ability to save manpower. This is particularly important for marketing FMCG products that may involve sophisticated training and/or language or marketing skills of large human forces. Such events, which do not utilize machine-based interactions, include those involving FMCG products carrying innovative features, foreign culture concepts, and/or other specifications that are unfamiliar to potential consumers within reach of relevant machines. In addition, vending machine marketing is able to integrate retail and marketing features, enabling consumers to immediately experience FMCG products within marketing campaigns. This aligns with consumers' pursuit of convenient, real-time, and interactive consumption experiences. According to CIC, the market size of China's vending machine marketing market in terms of marketing revenue reached RMB1.3 billion in 2022. It is expected to grow from RMB4.7 billion in 2023 to RMB14.9 billion in 2027, representing a CAGR of 63.7%. Our Group ranked first in China's vending machine marketing market in 2022, in terms of the revenue generated from this segment. Going forward, within the vending machine marketing market, vending machines equipped with various modules to facilitate technology-driven interactive functions are expected to gain greater favor among consumers. Currently, our Group is the only enterprise offering such interactive vending machine marketing services.
- According to CIC, the FMCG outdoor marketing market comprised 6.2% of the overall FMCG marketing market share, as reported by CIC. Our Group secured a position as the fifth largest FMCG outdoor marketing service provider in China, based on revenue for that year. Specifically, we held a market share of approximately 0.9%. In contrast, the leading market player commanded a significant market share of 12.7%.
- We are the largest AI interactive vending machine marketing solution provider in 2022.
- There are sufficient number of potential targets as there are well over 100 synergistic upstream and downstream companies that meet our criteria.
- Competition is fierce in FMCG outdoor marketing market.
- The commonly used type is information flow advertising, referring to the delivery of advertisements in the form of images, text, videos, etc., to the target consumers the Company selected and suggested to the brand customers. The Company provides advertising strategies and budget recommendations based on the investment and output conversion goals set by the brand customers. Fixed advertising spaces serve as supplementary advertising resources. Such spaces mainly consist of splash advertisements, top-view first impression advertisements, banners, etc., typically settled through methods such as CPM/CPT.
- It is industry norm for agents to charge around 5% margin

Verification

- The FMCG outdoor marketing market is constantly subject to changes.
- According to CIC, development of China's FMCG outdoor marketing market has been driven substantially by strong demand from FMCG brands for cost-effective marketing service, development of technologies, and growing recognition of the benefits of FMCG outdoor marketing service.
- The FMCG outdoor marketing market presents unique challenges such as cultural nuances, local regulations, and fierce competition.
- The company is a leading marketing service provider in China's FMCG outdoor marketing market, focusing on FMCG brands marketing through the usage of vending machines that are equipped with various technology-backed functions and modules to facilitate interesting marketing methods, such as scent emitting, movement recognition and voice interaction, making highly efficient machine-based marketing events possible.
- According to CIC, Qunabox is the fifth largest FMCG outdoor marketing service provider in China in terms of revenue in 2022, with a market share of approximately 0.9%.
- However, given the high frequency of new product launches and marketing activities that FMCG brands need to undertake, highly personalized consumer preferences that keep evolving, and cost-intensive nature of marketing methods commonly adopted by FMCG brands, as well as close-to-saturation online traffic in China, FMCG brands turn to marketing service providers like the company to address their needs.
- According to CIC, the FMCG outdoor marketing market is expected to grow from RMB36.8 billion in 2022 to RMB64.0 billion in 2027, at a CAGR of 11.7%.
- The average revenue per paying user for unmanned retail business decreased from 2021 to 2022 primarily due to the challenges brought by the macro economy, which contributed to the decrease in market size of China's FMCG merchandise sales market in 2022.
- According to CIC, it is common in the marketing service industry that marketing service customers supply their products to marketing service providers for retail.
- The FMCG outdoor marketing market in China has witnessed stable growth in the past few years. According to CIC, the size of the FMCG outdoor marketing market in China increased from approximately RMB31.9 billion in 2018 to approximately RMB36.8 billion in 2022, representing a CAGR of approximately 3.6% from 2018 to 2022, and is expected to further increase to RMB64.0 billion in 2027 with an expected CAGR of 11.7% from 2022 to 2027.

Verification

Company name	R&D expense in the six months ended June 30, 2023, RMB million	R&D expense to total revenue, %	Number of patents, as of September 30, 2023 ¹	R&D expenditure allocation
Qunabox	27.3	7.5	14 patents and 114 software copyrights	<p>The Company's marketing service hinges on two technologies: data transmission and interaction applications between vending machines and the Company's operation system, and mechanical structure of the Company's vending machines.</p> <ul style="list-style-type: none"> - Data transmission and interaction application: including "Quna AI Interactive App", "Quna Customized AIOS" and "Quna Vending App", enabling the operation team to have a convenient access to comprehensive operational information. - Mechanical structure of vending machines: the scent emitting module of the Company's vending machines provides users with real-person interaction. The Company's vending machines are the only ones in the FMCG outdoor marketing market with the scent emitting functionality. - The Company also outsources some mechanical components of vending machines, such as AI industrial personal computer, interactive camera, programmable RGB light and voice interactive module from third-party manufacturers.
Company A (Company A)	33.0	0.6	0 patent and 15 software copyrights	<p>Company A's R&D expense was allocated to its Intelligent Interactive Marketing Platform (智能互动营销平台), Information Data Conversion and Management Software (信息数据转换及管理软件), and Real-time Monitoring and Broadcasting Platform (设备即时监播平台). The latter two have completed their research and development.</p> <ul style="list-style-type: none"> - Intelligent Interactive Marketing Platform: Achieves interaction between people and screens through functions such as store management, creative production, and intelligent location selection. - Information Data Conversion and Management Software: Enables precise advertising placement based on building label. - Real-Time Monitoring and Broadcasting Platform: Enables online control of terminal screens through IoT technology.
JCDecaux (Company B) ³	-	-	-	<p>In its semi-annual report for 2023, JCDecaux outlined its primary focus on the selective roll-out of digital screens and the development of data capabilities.</p> <p>In addition, in 2022, JCDecaux announced the acquisition of Displayce to augment its data capabilities applied in precision placement marketing service. In 2022, JCDecaux's research and development expenditure accounted for only 0.5% of its operating income.</p>
Company D (Company D)	-	-	0 patent and 5 software copyrights	<p>Asiaray's marketing service mainly includes Outdoor and Online (户外线上) marketing service, and Technology-Driven Digital Out-of-Home Plus Solutions (科技带动数码户外广告加强版) marketing service. The two aforementioned approaches primarily involved digital intelligence and big data analytics technologies.</p>

Note: 1. Referring to the valid patents sourced from Qichacha as of September 30, 2023.

2. Company A's revenue is primary from advertising placements, hence it is considered that its research and development expenditures are primarily allocated to its marketing business.

3. JCDecaux did not disclose relevant information such as R&D expenditures and the number of patents in its semi-annual report for 2023.

4. Company D did not disclose its research and development expenses in the semi-annual report for 2023. The reference to software copyrights here pertains to the software copyrights held by Company D's Shanghai branch.

Comparison of R&D capabilities between FMCG outdoor marketing market companies, (1/2)

- While the Company's R&D expenditures are slightly higher than those of other peers in the industry, its technological capabilities extend beyond routine vending machine hardware upgrades and data transmission capabilities. The Company's exceptional R&D capabilities compared with its peers can be demonstrated through the following analysis. The following table sets forth a detailed comparison of the R&D capabilities, including (i) big data and AI capabilities, (ii) intelligent components, and (iii) IoT technology, between the Company and its major competitors in the industry:

1. Big data and AI capabilities

Company A: Company A applies big data analytics to analyze and cater to diverse consumer preferences in different settings, thereby achieving the goal of precision marketing. Company A also disclosed in its 2023 semi-annual report that its AI models are currently undergoing iteration processes.

JCDeaux: JCDeaux primarily leverages its big data system to realize functionalities including online automated media placement, remote content management, and real-time monitoring, so as to achieve precision and high-quality advertisement placement.

Company C: Leveraging big data and AI technologies, Company C utilizes internet-enabled placements for its elevator LCD screen advertisements. Additionally, it provides advertisers with personalized placements services and advertising effectiveness monitoring services.

Company D: Company D employs big data to collect foot traffic data within its operational scenarios and to analyze consumer preferences, providing advertisers with precision marketing. Furthermore, Asiaray, based on AI and 3D technology, enables voice interactions with users during its delivery of marketing service.

Qunabox: The Company has independently developed data transmission and interaction applications, including a visualized scheduling system, an intelligent warehousing and cargo distribution system, and others, enabling the Company to achieve functions such as intelligently optimizing the FMCG products portfolio, automatic price adjustment, and automatic on-shelf and down-shelf cargo adjustments.

Simultaneously, through the development of interaction applications, the Company has the capability to provide consumers with various marketing interactive experiences via vending machines.

The Company is also capable of utilizing big data analysis to generate consumer feedback reports and offer precision marketing advice to brand owners, which is a rare capability in FMCG outdoor marketing.

In addition, differing from the advertising placement business employed by peers in the industry which mainly focuses primarily on captivating consumers' attention through visualized advertisements, the Company encourages users to purchase products after trying and experiencing, offering added fun to consumers and allowing brands to leave a direct impression on consumers' minds.

With regards to big data capabilities, the Company not only utilizes big data for consumer preferences analysis based on various vending machine locations so as to achieve precision marketing, which is similar to that of the Company's peers, but also extend its big data capabilities to functions such as FMCG goods replenishment and sales forecasting by collecting and analyzing current sales data. This facilitates product trial needs from brand owners, and also achieves more effective retailing of FMCG products, while also satisfying the Company's internal operational intelligent transformation needs.

Some leading peers within the industry are exploring more business endeavors based on AI, such as voice interaction, such as Company D as previously discussed. However, the Company has successfully implemented a more scaled and comprehensive deployment of AI interactive functions, enabling recognition of users' body movements, voice, facial expressions, and other aspects.

Comparison of R&D capabilities between FMCG outdoor marketing market companies, (2/2)

2. Intelligent components

Other peers in the industry: Peers in the industry typically prioritize the usage of their devices for advertising placements, with a predominant emphasis on enhancing device digitization and inter-connectivity. In order to ensure the effectiveness of advertising placements, the devices are equipped with an audio playback module. Some industry players may integrate QR codes below advertisements to direct consumers to direct them to purchases or engage in interactive mini-games related to the advertised content.

Qunabox: The Company's vending machines, having been iterated to the fifth-generation, incorporate various intelligent modules such as voice interaction module, programmable RGB light, programmable scent emitting module, and a built-in industrial control computer. These features enhance consumers' experience by providing a convenient pick-up process and enabling consumers to interact with the vending machines.

Compared to other peers in the industry, the Company's intelligent modules integrated into its vending machines offer a bigger range of interactive functionalities, navigating users through comprehensive steps such as watching advertisements, interacting with vending machines, and making product purchases.

In contrast to vending machine companies that predominantly emphasize completion of transactions, their recognition of user facial expressions and body movements is largely oriented towards facilitating convenient purchasing. The various intelligent components in vending machines of the Company, especially the scent-emitting module, possess unique characteristics rarely adopted in the industry.

3. IoT technology

Other peers in the industry: other peer company mostly engage electronic screens which have basically achieved online connectivity, facilitating functions such as automatic advertisement deployment and replacement, and screens maintenance alerts.

Qunabox: In addition to enabling the aforementioned online connectivity and achieving automatic advertisement deployment and replacement and maintenance alerts, the Company's IoT technology also enhances its internal operational efficiency by allowing the Company's operation team to access the real-time status of shelved FMCG products as well as inventory. Moreover, through sensors such as light sensors and temperature sensors, the Company's vending machines achieve automation and energy savings, contributing to the realization of its ESG goals.

Compared to other peers in the industry, the Company's IoT technology not only facilitate remote management of advertising and marketing service, but also contributes to its intelligently transformed internal operation as well as the achievement of its energy-saving goals, therefore facilitating the achievement of more diverse values.

Verification

- The company is a leading artificial intelligence of things (“AIoT”) marketing solution provider in China’s fast-moving consumer goods (“FMCG”) AIoT marketing market, focusing on FMCG brands through the usage of intelligent terminal, an electronic device with data processing and storage functions that can communicate and interact with other devices via a network. According to CIC, the company is the third largest FMCG AIoT marketing solution provider in China in terms of revenue in 2022, with a market share of approximately 3.5%.
- The company has been serving FMCG brands since 2014. The company is a pioneer to utilize intelligent terminals as the company’s infrastructure to provide AIoT marketing solutions in the industry, according to CIC.
- During the Track Record Period, the company provided marketing solutions to 377 brand customers for approximately 1,400 SKUs of FMCG products, including products from 77 emerging brands among the top 100 emerging brands in the industries of beverages, food and daily necessities in China, as measured by revenue in 2022, according to CIC.
- FMCGs are characterized by higher consumption frequency, shorter shelf life and highly iterative preferences from consumers. In particular, the main target consumer group of FMCG brands, being the “new middle class” and young consumers represented by “Gen-Y/Z”, are generally featured with highly iterative consumption preferences. They prefer FMCGs that bring continuous fresh experience and represent their personalized life style. As a result, to deal with such inherent challenges, FMCG brands need to undergo rapid iterations from the perspectives of design, packaging, consumption experience and market positioning.
- In the FMCG industry, new products refer to products with new brands, categories, tastes, formulas, packaging or shapes that have been launched in the market for less than one year, and mature products refer to products that have been launched for over one year, according to CIC.
- While the brands of new products mainly focus on promoting public awareness, market recognition and sales solicitation during their marketing efforts, the brands of mature products, on the other hand, are also investing heavily in marketing to maximize the life cycle of such products, refresh their brand images as well as to improve market penetration and harness competitive barriers. Nonetheless, an accurate, authentic and multi-dimensional consumer feedback is always a key demand for FMCG marketing solution providers to meet, as such feedback is crucial for FMCG brands to further adjust and optimize their marketing strategy and product incubation and operation plan.
- However, given the high frequency of new product launches and marketing activities that FMCG brands need to undertake, highly personalized consumer preference that keeps evolving, and cost-intensive nature of marketing methods commonly adopted by FMCG brands, as well as close-to-saturation online traffic in China, FMCG brands turn to AIoT marketing solution providers like the company to address their needs.
- With denser population of consumers, higher level of consumption and greater mobility, cities of higher tiers in China generally have a higher level of FMCG distribution and consumption, according to CIC.
- The FMCG AIoT marketing market in China is emerging and has witnessed noticeable growth in the past few years. According to CIC, the market size of the FMCG AIoT marketing market in China increased from approximately RMB6.4 billion in 2018 to RMB11.6 billion in 2022, representing a CAGR of approximately 16.3% from 2018 to 2022. An increasing number of players are planning to enter the market, leading to fiercer competition in the coming future.

Verification

- According to CIC, development of China's FMCG AIoT marketing market has been driven substantially by strong demand from FMCG brands for innovative and cost-effective marketing solutions, development of technologies, and growing recognition of the benefits of FMCG AIoT marketing.
- With the increasing diversification of consumer demand and the steady increase of per capita disposable income, the FMCG industry has maintained a rapid growth in recent years, which will further drive the expansion of FMCG marketing industry. According to CIC, the market size of FMCG marketing is expected to reach RMB895.1 billion in 2027. Attributable to the prevalence of IoT technologies and the pain points commonly seen in FMCG brands' marketing, the FMCG AIoT marketing market has vigorous market opportunities and huge growth potential. According to CIC, the FMCG AIoT marketing market is expected to grow from RMB11.6 billion in 2022 to RMB43.2 billion in 2027, at a CAGR of 30.1%.
- As of June 30, 2023, the number of intelligent terminals managed by the company's operation and maintenance team per capita reached 67, which is higher than the industry average management efficiency of 40 to 50 terminals per capita, according to CIC.
- Leveraging the company's strong technical strengths and leading market position, the company has established stable cooperative relationships with a large number of FMCG brands, including established brands with strong market appeal as well as emerging brands with huge growth potential. In the FMCG industry, established brands are typically founded before 2015, have a significant level of consumer awareness within a specific industry segment or nationwide market coverage, and an annual revenue of at least RMB100 million, while emerging brands are those established in or after 2015, or have a local or regional market coverage, including those with an annual revenue of less than RMB100 million, according to CIC.
- According to CIC, with the rise of young consumer groups, established brands devote great efforts to launch new products, while innovate mature products from the perspectives of taste, formula, packaging, market positioning and brand image, in order to better meet young consumers' demands for diversified and innovative experience. Meanwhile, emerging brands also launch new products with differentiated competitiveness. These brands need to quickly reach the widest and most representative consumer groups in order to build brand awareness, and obtain accurate and authentic consumer behavior information, so as to adjust their marketing strategies and product design and positioning to ensure successful business operation.
- According to CIC, currently, offline marketing channels typically focus on brand exposure rather than consumer reach through physical products, and consumer traffic of online marketing channels is close to saturation, which resulted in higher consumer acquisition costs.
- Leveraging the company's data and algorithm capabilities, the company is able to launch the marketing projects based on OMO marketing solutions within one to two weeks following brand customers' placing of service orders, which is significantly shorter than the duration using traditional marketing methods such as launch on supermarket shelves and on-site promotion deploying significant human resource, according to CIC.
- According to CIC, it is common in the marketing service industry that marketing service customers supply their products to marketing solution providers for retail.
- The FMCG AIoT marketing market in China has witnessed rapid growth in the past few years. According to CIC, the size of the FMCG AIoT marketing market in China increased from approximately RMB6.4 billion in 2018 to approximately RMB11.6 billion in 2022, representing a CAGR of approximately 16.3% from 2018 to 2022, and is expected to further increase to RMB43.2 billion in 2027 with an expected CAGR of 30.1% from 2022 to 2027.
- The tier one and new tier one cities in China are known for their dense population, higher levels of consumption, and increased mobility, according to CIC.
- In early 2023, as the company strategically enhanced the capability of utilizing social media platforms for OMO marketing solutions delivery, the company increased the procurement of third-party media resources, which typically required prepayments per industry convention, as confirmed by CIC.

- It is respectfully submitted that, the entry barriers specific to the Group's business primarily include:
 - Data accumulation and application of innovative technologies. FMCG AIoT marketing solution providers can leverage innovative technologies to accumulate and analyze operational data, enabling a deeper understanding of consumer demands and precise advertising placement. The accumulated operational data also facilitates AI training, enhancing marketing performance and accuracy, ultimately improving marketing effectiveness. However, for new entrants in the industry, collecting a sufficient amount of operational data within a short period of time can be challenging, hindering precise consumer demand analysis and desired advertising placement results.
 - Industry know-how. Industry know-how is crucial in the FMCG AIoT marketing market, including a deep understanding of market trends, insights into customer preferences, creative concepts, and advertising strategies. By possessing such knowledge, FMCG AIoT marketing solution providers can effectively serve FMCG brand customers and establish strong collaborative relationships with a diverse range of clients. New entrants in the industry often encounter challenges due to their limited industry experience and awareness. They have to invest considerable time and effort in learning and building trust and cooperative relationships with their respective clients.
 - Geographic location. The exposure and marketing effectiveness of FMCG AIoT marketing terminals depends largely on the location and the outreach of potential target customers. FMCG AIoT marketing solution providers with strong bargaining power can secure better locations. However, for new entrants to the industry, acquiring premium location poses a challenge as existing FMCG AIoT marketing solution providers have already established stable partnerships with venue operators, and occupying prime locations.
 - Capital requirement. New entrants in the FMCG AIoT marketing market need to make a substantial capital investment in procuring AIoT terminals. Additionally, they have to invest in initial market development, research and development, location acquisition, and maintenance costs. A significant amount of capital is required during the early stages of entering the industry.
- It is respectfully submitted that, the market challenges and threats specific to the Group's business primarily include:
 - The FMCG industry is highly sensitive to economic cycles. The slowdown in China's macroeconomic growth may lead to a decrease in consumer purchasing power, resulting in a decline in revenue for FMCG brands and a reduction in their AIoT marketing budgets.
 - Consumer demands and preferences are constantly changing, leading to increasing expectations for FMCG product quality, reputation, sustainability, personalization. FMCG AIoT marketing solution providers need to continuously innovate, adjust, and optimize their advertising strategies to better serve brand customers and help them achieve revenue growth.
 - The low penetration rate of FMCG AIoT marketing in China indicates a lack of awareness among brand customers about AIoT marketing solutions. Therefore, FMCG AIoT marketing solution providers need to invest more effort, time, and resources in creating more benchmark cases and continuously improving their business capabilities to increase acceptance of FMCG AIoT marketing among brand customers.

Verification

- In respect of terms of “tier one cities” and “new tier one cities”, it is respectfully submitted that the Company utilizes the China City Tier Classification provided by CIC to categorize tier one, new tier one, and tier two cities. This classification is compiled based on the “Ranking of China’s Cities for Business Attractiveness” published by Yicai (第一財經). The ranking assesses the development of Chinese cities across five dimensions, including concentration of commercial resources, city as a hub, urban residents’ activity, lifestyle diversity, and future potential (商業資源聚集度、城市樞紐性、城市人活躍度、生活方式多樣性和未來可塑性), which is considered authoritative in business and urban research and is widely referenced by government departments and media outlets.
- It is an industry norm that the procurements of third-party media resources from agents of social media platforms required prepayments.
- It is an industry norm that marketing agents generally do not disclose the identity information of the ultimate customers to a marketing solution provider, which is also in line with the Company’s business practice.
- The company’s AIoT marketing solutions business is subject to seasonal fluctuations depending on the brand customers’ timeline to launch and promote new products.
- With respect to the company’s unmanned retail business, consumer foot traffic and outdoor consumption usually decline during winter times, while consumers have relatively stronger demand for retail of beverages in warmer weather. The company is also subject to seasonal fluctuation in demand from particular scenarios. For example, intelligent terminals at schools typically have lower consumer foot traffic during summer and winter vacations.
- Specifically, the company did not observe any undue competition among brand customers, since, according to CIC, (i) consumers are generally attracted to places where they can enjoy abundant choices of FMCG goods and the joy of hunting for new goods, therefore, exclusive sales of one single brand FMCG goods are rarely seen in the industry; and (ii) FMCG goods of the same or similar category generally share highly similar target consumer groups, therefore a successful promotion of new FMCG goods by us through launching various marketing events is actually our advantage to keep attracting precise target consumer groups that FMCG brands are looking for.
- According to CIC, marketing agents typically do not have self-operated platforms, and cooperate with a diverse range of media channels to ensure dissemination of advertisements to the brand owners’ target consumers. Moreover, as marketing agents generally do not involve in direct interactions with target consumers, they typically have a limited access to consumer feedback.
- According to CIC, the increasing number of the company’s intelligent terminals is consistent with the recent market trend of increasing customer demand, where utilization of intelligent terminals are expected to continue its gradual recovery.
- The company currently expect to use the net proceeds to procure around 18 hardware devices per year with an average price of approximately RMB100,000, and the software operating and upgrading expenses are expected to average around RMB2.8 million annually. According to CIC, such expenses are required for hard- and software that are in line with the company’s intended development needs.
- The digital system within the company’s internal operations is expected to streamline the company’s operations and increase the company’s operating efficiency, as such systems have shown such capabilities in other AIoT marketing companies, according to CIC.

Verification

- The company procure social media platform promotional contents push service from agents of social media platform companies, which is an industry norm.
- The company currently expect to expand the user pool by approximately 900,000 annually on average at a user acquisition cost of around RMB19 per user, among whom 10% may convert to the company's members and incur an operating cost of around RMB45 per member. As confirmed by CIC, such user acquisition and member operating costs are in line with the industry standard.
- An average annual remuneration package of approximately RMB0.4 million, which is in line with the industry standard.
- The business development personnel's average annual total remuneration package is approximately RMB0.3 million, which is in line with the industry standard.
- The R&D personnel's average annual remuneration package is approximately RMB0.5 million, which is in line with the industry standard.
- The company will consider companies that have generated a revenue of more than RMB10 million in the most recent fiscal year, and we may prioritize emerging FMCG brands that have outstanding test run results for its new products and a low price-to-sales ratio, and upstream/downstream service providers that have strong synergistic effects and exhibit great performance. There are sufficient number of potential targets as there are many synergistic upstream and downstream companies that meet the company's criteria.
- The flash frozen food category is witnessing growing customer demand, as confirmed by CIC.

Verification

Competitive landscape of FMCG AIoT marketing market in China, 2022

Company name	R&D expense in the six months ended June 30, 2023, RMB million	R&D expense to total revenue in percentage, %	Number of patents, as of September 30, 2023 ¹²	R&D expenditure allocation
Qunabox	27.3	7.5	14 patents and 114 software copyrights	<p>The Company's AIoT marketing solutions rely on two proprietary technologies: the mechanical structure of intelligent terminals and data transmission and interaction between intelligent terminals and the Company's operating system.</p> <p>Mechanical structure of intelligent terminals: a series of AI-empowered functional components to provide users with convenient pick-up experience and multi-sensory human-computer interaction.</p> <p>- Data transmission: the operation team can have a convenient access to comprehensive information of business operation.</p>
Company A ³	33.0	0.6	0 patent and 15 software copyrights	<p>Company A's R&D expense was allocated to Intelligent Interactive Marketing Platform (智能互动营销平台), Information Data Conversion and Management Software (资讯资料转换及管理軟體), and Real-time Monitoring and Broadcasting Platform (設備即時監播平臺). The latter two have completed their research and development.</p> <p>- Intelligent Interactive Marketing Platform: Achieves interaction between people and screens through functions such as store management, creative production, and intelligent location selection.</p> <p>- Information Data Conversion and Management: Enables precise advertising placement based on building label.</p> <p>- Real-time Monitoring and Broadcasting Platform: Enables online control of terminal screens through IoT technology.</p>
Xiaomi ⁴	8,668.2	6.8	>33,000 patents ⁵	<p>Xiaomi allocated its R&D expenses to 12 areas, including 5G mobile communication technology, big data, cloud computing, artificial intelligence, and robotics, with a relatively lower emphasis on AIoT marketing-related endeavors.</p>
Ubox ⁵	15.1	1.2	204 patents and 138 software copyrights	<p>Ubox's R&D expense was allocated to application of advanced technologies on vending machine, data analytical, and inter-connected network of POSs to provide customers with convenient consumption experiences. The allocation of funds to AIoT marketing was relatively less.</p> <p>Application of advanced technologies on vending machine: Including vending machine payment systems and pick-and-go cabinets.</p> <p>Data analytical: Developing algorithm models to determine the optimal POS sites, merchandise mix, inventory levels of the machines, as well as restocking routes and schedules</p> <p>Inter-connected network of POSs: Realizing the customization of each machine with individualized features.</p>

- The Company's R&D expenses as 7.5% of its total revenue in the six months ended June 30, 2023 was slightly higher than the upper limit of industry range. Among all the core technology developments and applications, the scent emitting component, which is one of the key technology features of Qunabox, is unique in the industry. It allows the Company's intelligent terminals to achieve olfactory interaction functionality, in addition to the commonly found voice and visual interactions in the industry.

Note: 1. Referring to the valid patents sourced from Qichacha as of September 30, 2023; 2. The number of patents and software copyrights represents the total count for the entire group, indicating that Xiaomi and Ubox's intellectual property is not exclusively used for marketing solutions; 3. Company A's revenue is primary from advertising placements, hence it is considered that its research and development expenditures are primarily allocated to its marketing business; 4. Xiaomi operates across a wide range of business sectors, and its R&D expenses, as well as the percentage to total revenue, the count of patents and software copyrights, encompass the entire group's operations, not limited to AIoT marketing; 5. As of June 30, 2023; 6. Ubox's R&D expenses, percentage to total revenue, the count of patents and software copyrights encompass the entire group's operation, including unmanned retail business, advertising and system support services, and etc. It is not limited to AIoT marketing.

Source: China Insights Consultancy

Comparison among intelligent terminals, intelligent vending machines, and traditional vending machines (1/2)

Function/ Module	Scenario for Application	Intelligent Terminal	Intelligent Vending Machine	Traditional Vending Machine ¹
AI host				
ROM customization	<ul style="list-style-type: none"> Based on native android7.1, the ROM is characterized to make the system purer. Preset applications and daemons enhance peripheral connection and storage security 	√	×	×
AI algorithm capabilities	<ul style="list-style-type: none"> The system loads preset AI models and algorithms, which provides rich API calls at the application layer, and at the same time enhances visual data security to prevent malicious decompilation and cracking 	√	√	×
Edge computing	<ul style="list-style-type: none"> As a micro-server, it provides local real-time analysis for the operating status of the terminal when online and offline, ultimately achieving automatized AIoT work orders 	√	×	×
Dual-screen differential displays Dual cameras	<ul style="list-style-type: none"> The host supports lvds+hdmi dual-screen interface, and dual-screen differential displays and free scheduling of dual cameras in terms of software 	√	×	×
Visual interactive camera				
Offline recording and photographing	<ul style="list-style-type: none"> It is used for point environment photography and anti-theft recording 	√	√	×
Offline facial feature point recognition	<ul style="list-style-type: none"> To track facial recognition point-to-object interactions² 	√	√	×
Offline basic attribute identification	<ul style="list-style-type: none"> To identify gender, age, and activate the corresponding interactive experience 	√	×	×
Offline picture similarity comparison	<ul style="list-style-type: none"> To compare the similarity of the target pictures to trigger the reward if reaching a preset value 	√	×	×
Offline hand feature point recognition	<ul style="list-style-type: none"> To track hand recognition point-to-object interaction, and recognize and determine simple gestures³ 	√	√	×
Offline body feature point recognition	<ul style="list-style-type: none"> There are three ways including posture recognition, movement following, and feature point tracking 	√	×	×
Object feature point recognition	<ul style="list-style-type: none"> To customize object trainings, and recognize and compare objects to get rewards 	√	×	×
AR texture + visual beauty	<ul style="list-style-type: none"> To create hot field and interaction, face beauty + fun stickers 	√	×	×
Remote live streaming and interaction	<ul style="list-style-type: none"> To make robot Q&As, remote live streaming and interaction with backstage personnel to get rewards 	√	×	×

Note: 1. Traditional vending machines refer to vending machines that lack internet connectivity, and do not perform any of the functions or install any of the modules set forth in the table; 2. In the scenario of facial feature recognition, our intelligent terminal aims to not only identify facial features but also supports interactive functions, creating a contextual effect to enhance marketing effectiveness, while intelligent vending machines do not have interactive functions; 3. Some of the intelligent vending machines are capable to recognize consumers' hand gestures to determine the items they have purchased and process transaction settlements accordingly. The company's intelligent terminals' recognition of hand gestures primarily serves the purpose of engaging consumers to participate in human-machine interactions, which is one of the marketing methods

Source: China Insights Consultancy

Verification

Comparison among intelligent terminals, intelligent vending machines, and traditional vending machines (2/2)

Function/ Module	Scenario for Application	Intelligent Terminal	Intelligent Vending Machine	Traditional Vending Machine ¹
Visual interaction module				
Sound source localization + noise reduction	To adapt to offline open environment and accurately locate user's sound sources	√	×	×
Volume detection	To trigger corresponding actions according to the user's voice, forming a certain interesting challenge	√	×	×
Voice recognition	Based on offline phrase recognition library, users shout out specified words to complete the challenge	√	×	×
Remote live streaming and interaction	To make remote live streaming and interaction with backstage personnel to get rewards	√	×	×
Scent emitting module				
4-way spray	To solve the problem of selection of the number of new products under a brand in the same issue, and increase the interactive fun at the same time	√	×	×
Programmable	The open API enables the application layer to sensitively control the spray time and intensity, making it more suitable for the characteristics of new products	√	×	×
Hardware modularity	The entirety and parts can be disassembled and replaced independently, with high flexibility	√	√	×
RGB light				
Programmable	To support codes to change the color of the light, used for brand interactive marketing and holiday venue activities, and used to enhance the visual effect of the scenario	√	×	×
Save-energy machine	Under the scenario of unmanned traffic at night, the switch is controlled remotely by codes, saving the machine's energy	√	×	×
Variable cargo				
Product adaptability	It has the ability of tool-free adjustment to the width of the cargo lane, which ensures that the terminal adapts to most regular and special-shaped new products	√	×	×
Intelligent cargo distribution	Through the analysis on warehousing data, new introduction mechanism, manual intervention, on-machine inventory, site labels and consumer preferences, combined with the self-developed scheduling model, the machine achieves intelligent cargo distribution to replace purely manual scheduling	√	√	×

Note: 1. Traditional vending machines refer to vending machines that lack internet connectivity, and do not perform any of the functions or install any of the modules set forth in the table.

Source: China Insights Consultancy



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