



China Leading Retailtech 50

(1st session)



毕马威中国未来50榜单系列
KPMG China Future 50 Ranking Series



消费科技
Retailtech



KPMG China

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Foreword



Jessie Qian

Partner,
Head of Consumer
and Retail Sector,
KPMG China

Commerce in China is evolving from a “consumer dividend” economy to a “digital and intelligent innovation” economy, and the industrial ecosystem has been evolving from single-node costing and efficiency enhancement to full-scale reshaping and growth. Digital technologies have led to the full-link digital transformation of the commercial ecosystem, as represented by the shift from efficiency enhancement of one-way business flows to the value enhancement of full-link elements, from the retail Internet to the ecological Internet, and from digital transformation to digital and intelligent empowerment. The Retailtech industry is following the same evolutionary path as Chinese commerce. The two have formed synergies and achieved mutual growth. Enterprises in the technological innovation and retail industries have worked hard to accumulate a wealth of technological applications and practical experience, and these companies can serve as role models for enterprises that are trying to build their own digital capabilities.



Philip Ng

Partner,
Head of Information
and Technology Sector,
KPMG China

Based on our interviews and analysis of Retailtech enterprises, we have highlighted five areas of concern for the industry: First, technological applications mostly focus on consumer interaction, marketing and transaction processes at the front end. Innovation in technological applications is inadequate in light of the vast potential for innovation at the supply chain end. Second, technological applications mainly focus on changing the business and operating models of retail enterprises, and the digital models for human resources and financial management have remained largely unchanged. Third, there has been significantly more application and business innovation than technological innovation. Fourth, technological applications mainly encourage customers to use products, but customers may actually desire stronger digital capabilities that integrate business optimization, organizational change, ecological links and products. Fifth, while innovative enterprises are working hard to create differentiated solutions in the Retailtech sector, there are still many homogeneous solutions competing with each other.



Michael Mao

Partner,
Advisory Head of Consumer
and Retail Sector,
KPMG China

In the face of digitalization, the retail industry is innovating and reforming as consumers change their lifestyles. New retail technologies are becoming increasingly integrated into the retail industry as new consumption needs are explored and new operating models emerge. During this transformation, Retailtech enterprises, especially start-ups, have played an indispensable role, and they are upgrading themselves as they engage with their end-users. Many technology enterprises have evolved from software vendors that offered a single solution into business partners that work with their end-users to develop solutions that are tailored for specific scenarios. Other enterprises not only provide technical support for hardware and software, but also assist retail enterprises in integrating technological transformation at the IT level through internal reform and optimization of organizational structures.



Willi Sun

Partner, Strategy
Consumer
and Retail Sector,
KPMG China

The digital transformation is moving into uncharted waters as the retail industry evolves. As digital business develops over the next three to five years, digital supply chains and digital management will become important topics as applications make significant gains in terms of scope, depth and innovation. The Matthew effect resulting from accumulated advantages will become more pronounced as the development of Retailtech intensifies competition in the sector.

Retailtech is progressing at a fast but uneven pace. Some enterprises are still trying to break out of the beginner stage, such as those working with artificial intelligence (AI), while others are approaching maturity, such as those in the mobile Internet sector. Against this backdrop, Retailtech enterprises need to constantly identify new opportunities in order to construct proprietary technological thresholds. They should also identify differentiated products and solutions alongside retail enterprises and industry experts, and they should work with technology enterprises to jointly develop solutions and products to promote digital transformation.



KPMG China “Future 50” ranking series



金融科技
Fintech



汽车科技
Autotech



生物科技
Biotech



消费科技
Retailtech



芯科技
Chiptech



医疗保健
Healthcare

The new generation of information technologies represented by big data, cloud computing, artificial intelligence, blockchain, and mobile internet are maturing and being widely used. KPMG China is examining the far-reaching impacts created by these technologies, and the firm is committed to identifying new drivers for innovation by addressing industry pain points, innovating models, and raising efficiency.

KPMG is immersed in these industries, and the firm is constantly searching for new value. We have gained extensive experience from years of practical work, and we know how to use this experience to empower innovation and reform in different industries. After years of preparation, KPMG introduced the first *China Leading Fintech 50* list in 2016. Subsequently, the firm introduced the “Future 50” rankings for other sectors such as finance, automotive, biomedicine, consumer markets, chips, and healthcare to engage leading enterprises, investors, and industry experts in these fields.

“Future 50” rankings are forward-looking and connect external and internal networks across industries by applying three qualities to enhance the overall value of the industrial ecosystem.

- **Professionalism:** Since KPMG released the first *China Leading Fintech 50* list in 2016, more than 60 KPMG partners have visited over 300 leading companies in the industry and met with their founders. Based on roughly 500 hours of interviews and research, we have released publications such as *China Leading Fintech 50* and *China Leading AutoTech 50*. These publications provide insightful and forward-looking reports on their respective industries.
- **Fairness:** The selections have been well received and have received high praise thanks to their professional and fair selection criteria. During the selection process, KPMG asks external experts from government, corporations, academia, research, social institutions, and investment enterprises to join the Selection Committee alongside KPMG partners with experience in the relevant industries. We also visit enterprises and interview executives to evaluate candidates in terms of team members, technology, products, markets, and funding.
- **Platform:** The “Future 50” ranking series provides a professional, fair and mutually beneficial platform for cooperation. It also represents our commitment and effort to drive innovative transformation, and it gives us the opportunity to provide insights into the present and a vision of the future.

China Leading Retailtech 50 Atlas

Digital touchpoints

多点DMALL

Hanshow
汉朔科技

钱方QFPAY

RTMAP智慧图

云迹科技
YUNJI TECHNOLOGY

TUPUTECH
图普科技

食亨

YALABI
雅量商业智能

DINTECH
灯影科技

容易网

Consumer operations

HYPERS

神策数据
SENSORS Data

Deepleaper
跃盟科技

EZR 数云
shuyun

Techsun*
零售智变赋能者

ec 连接改变生意
再惠

悦会会员
YHOUSE

MAI群脉*

奥本未来*
OPPENFUTURE

ZMTI众盟

Intelligent technology

瑞为技术
RECONOVA

创新奇智
AlInnovation

迈外迪

IMAGE DT
图匠数据

infimind
极睿科技

极视角
开创 AI 视觉算法商城

Clobotics
扩博智能

MALONG
码隆科技

TERMINUS 特斯联

帷幄
whale

一面数据

YIPLD*
— 壹品光电 —

Full-link middle-platform operations

伯俊软件

海鼎
HEADING

滴普科技
DEEPEXI

Co-Mall
科码先锋

YUNXI云徙
引领企业数字化转型

Data middle platform and data intelligence

观远数据
GUANDATA.COM

帆软
让数据成为生产力

明略科技™
MININGLAMP TECHNOLOGY

杉数科技
Cardinal Operations

Paradigm
第四范式

解客

Digital supply chain

QUANTUMASIA
上海科箭软件科技有限公司

蓝胖子机器人
dorabot

oTMS

Fresh Life Style
Supply Chain Management
鲜生活

迅蚁
ANTWORK

鸿链科技
Whole Link Technology

MERLINBIRD
美灵宝

EPET 易宠

eFood
Supply Chain
亦美德供应链

Digital management

法人
Fadada.com

GaiaWorks
盖雅工场

齿轮易创*

Geek+

协成云
共享经济众包平台

云砺

云扩科技
ENCOO

*Candidates selected as emerging enterprises

Note: Companies are listed in no particular order. They are indicatively arranged based on publicly available information. This list is intended for reference only and is not a full list of companies.

Overview



KPMG China China Leading Retailtech 50

About the KPMG China Leading Retailtech 50 List

As one of the world's leading professional services firms, KPMG is deeply involved in the technology industry. We have seen how the Retailtech sector has been propelled to new heights by technology-driven business models and cutting-edge innovations.

As a representative industry organization, the China Chain Store & Franchise Association has been working to promote technological innovation, model optimization, and drive the industry's digital transformation.

On the firm's initiative and under the guidance of the China Chain Store & Franchise Association, KPMG has released *the China Leading Retailtech 50 report* ("the Report"), which aims to promote the development of Retailtech in China and support the growth of Retailtech enterprises. Through a comprehensive selection process that combines an online platform with an offline expert team, the Report has selected leading enterprises in a growing sector that is increasingly digitalized, intelligent and integrated.

Note: *The China Leading Retailtech 50* aims to raise the market awareness of Retailtech, promote exchanges within the industry, and encourage the regulated development of Retailtech. The Report does not evaluate the compliance and investability of the candidates, nor does it interpret any regulatory policies. This selection is free of charge.



Selection scope

Enterprises in China that have been engaged in the following activities for at least 9 months are eligible to be selected for the first *Leading Retailtech 50* list.

Digital touchpoints

- Digitization of physical stores
- Virtual stores
- Mobile payment
- Electronic price tags

- Consumer insight
- Consumer communication
- Consumer services

Consumer operations

Full-link middle platform operations

- Online business operations

- Data middle platform
- Artificial intelligence
- Data analysis

Data middle platform and data intelligence

Digital supply chain

- Products
- Logistics
- Warehousing
- R&D
- Manufacturing
- Procurement

- Financial
- Human resources
- Process automation

Digital management

Intelligent technology

- Visual technology
- Internet of Things (IoT)
- Blockchain
- Semantic analysis



Selection Committee membership

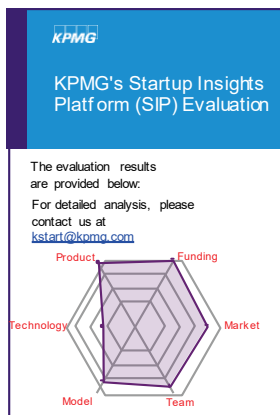
The Selection Committee is comprised of industry experts and partners from KPMG. These individuals have studied the candidate enterprises together with executives from leading retail enterprises, investors specialised in retail investments, technology experts, and academics.

Selection process

The committee members visited and interviewed candidates on site to collect detailed first-hand information to ensure the objectivity, fairness and rigor of the list.



Core evaluation dimension



- Technology: Technology and business model innovation
- Product: Reform and empowerment of traditional consumer sectors
- Funding: Financial health and capital market recognition
- Market: Target market recognition and market segment potential
- Team: Team capability and corporate innovation system
- Model: Business model innovation and scalability

Valuation approach

1. Desktop research

Summarize the current industry ecosystem based on KPMG's long-term observation of the consumer markets

2. Field interview

KPMG China's Retailtech leaders visited candidate enterprises and interviewed their founders and executive teams

3. Experts interview

Through interviews with executives from the leading enterprises, technology experts and academics gained an understanding of their views on and insights into the industry and its market segments

4. Data analysis

The venture capital map was analysed using KPMG China's consumer market big data platform. KPMG's proprietary Startup Insights Platform (SIP) was deployed to evaluate candidate enterprises

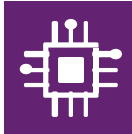


KPMG China China Leading Retailtech 50

Note: The following figures are based on the information provided by leading enterprises and emerging enterprises

Apart from the 50 leading enterprises, there is also a list for emerging enterprises. “Emerging” indicates the potential for growth. The emerging enterprises are as important as the 50 leading enterprises in promoting the innovation and development of the Retailtech sector. We analysed the information of all 64 enterprises from various perspectives (the figures are from up to 31 May 2020), and the analysis are as follows:

1

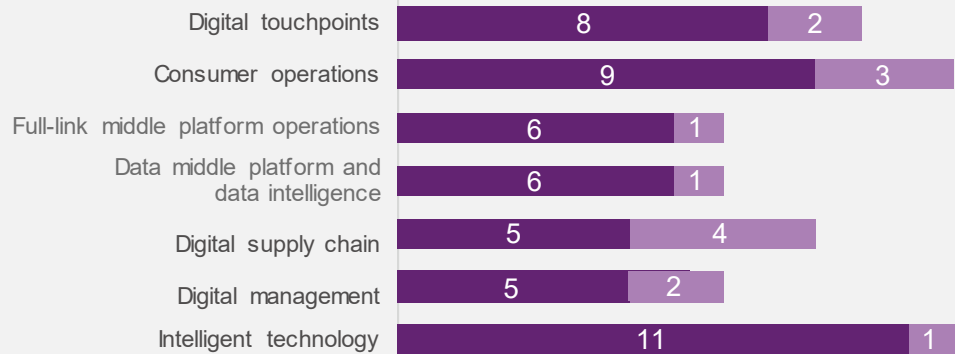


Core business

Most of the enterprises on the list are engaged in the consumer operations and intelligent technology sectors. Consumer operations enterprises mainly engage in consumer insight, communication and service activities. Intelligent technology enterprises mainly specialize in areas such as visual technology, IoT, and semantic analysis.

Number of enterprises

Expressed in number of enterprises



■ Leading enterprises ■ Emerging enterprises

2



Geographic location

About 80 percent of the enterprises on the list are located in the Beijing-Tianjin-Hebei region and the Yangtze River Delta region. The high-quality tertiary education institutions and huge consumer markets in these regions provide the necessary talent and development potential for Retailtech enterprises. Enterprises have had a strong incentive to develop their business in first-tier cities, such as Guangzhou and Shenzhen. They have also been attracted by the rapid development of the Guangdong-Hong Kong-Macao Greater Bay Area.



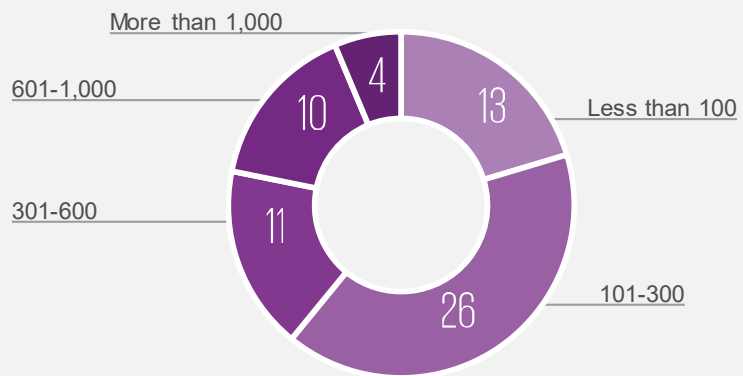
3



Team size

About 80 percent of the selected enterprises have teams of less than 600, and a majority of them have teams of less than 300.

Enterprises by number of employees



Expressed in number of enterprises

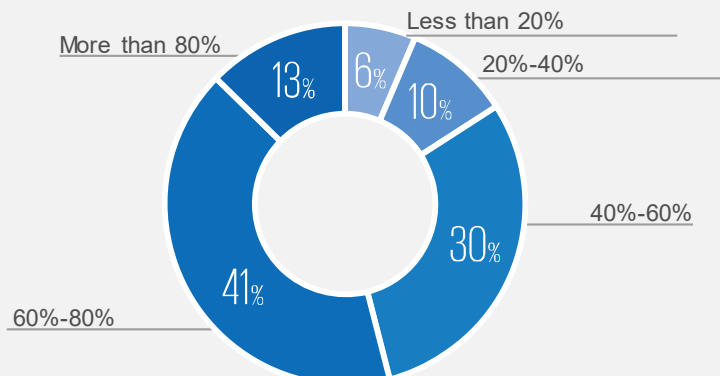
4



Proportion of technical personnel

Technology and business model innovation, reform and empowerment of traditional consumer sectors, and team capability and corporate innovation systems serve as important criteria for selecting the enterprises on the list. The proportion of technical personnel at nearly 60 percent of the selected enterprises exceeds 60 percent.

Technological change is reshaping the entire consumer market ecosystem, and talented people are playing an important role in this process. Well-reasoned organizational structures and strong technological change and upgrading capabilities can help individual enterprises and the industry as a whole achieve new disruptions and breakthroughs.

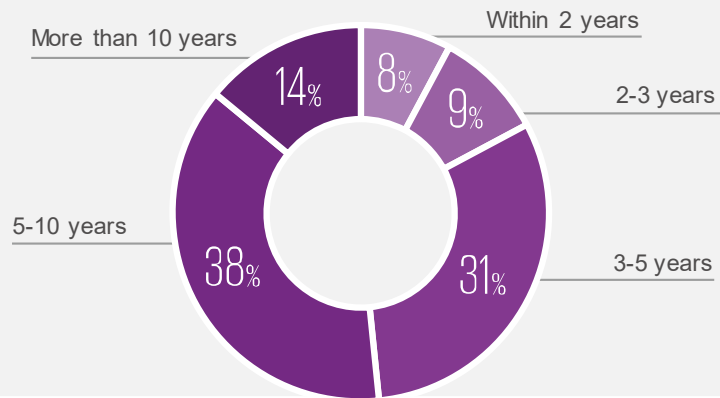


5



Time since founding

In this year's list, half of the enterprises have been established for more than five years, and half have been established for less than five years. We are pleased to see both long-established companies and new start-ups flourishing in the Retailtech sector. With new entrants driving further technological progress, we are confident that the industry is developing in a healthy and stable direction.



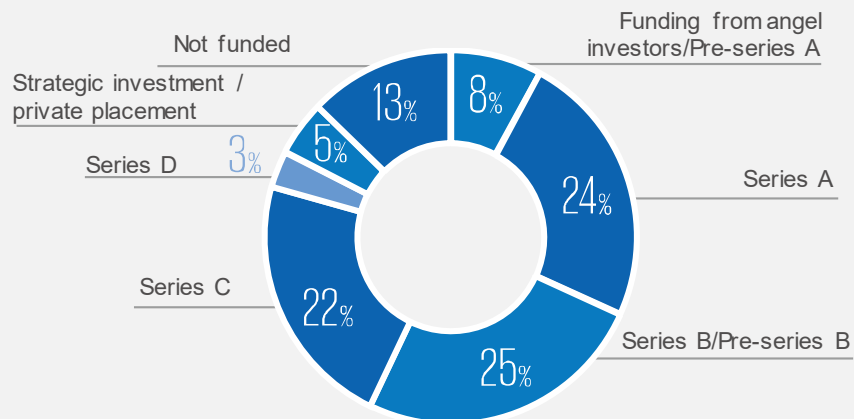
6



Funding

About 70 percent of all the selected enterprises have completed series A, B or C funding.

More than 50 percent of the emerging enterprises have obtained funding from angel investors or have completed pre-series A or series A funding.



In terms of Retailtech enterprises' digital technology application scenarios, we observed the following development trends in 2020:

1 Comprehensive and intelligent

Overall enhancement of experience and efficiency with full-link application of technologies in retail industries

The commercial world in China is undergoing an unprecedented change. The growth of consumer markets is increasingly being driven by innovations instead of demographic trends. As consumers' demands change, Retailtech is evolving, and business models are being transformed. "New demands" are giving rise to "new supplies," and these "new demands" and "new supplies" are dynamically balancing each other, resulting in a "new consumption" model. We expect that full-link digital transformation of the commercial ecosystem will soon fully take hold. For this reason, it is now the right time for retail enterprises to consider pursuing overall digital transformation at the corporate level in order to enhance consumer experience and operating efficiency.

In fact, Retailtech is penetrating all links along the retailing process—from consumer-facing digital touchpoints and digital innovations related to consumer operations, to back-end warehousing and logistics digital supply chain products. This transformation also includes full-link middle platform applications that help enterprises build the infrastructure for resource allocation and data-driven capabilities in coordination with their data middle platform and data intelligence functions. The Retailtech sector is also exploring the digital management of human resources and finance. In this regard, a number of high-tech enterprises have excelled in visual technology, image recognition, IoT, and other fields of intelligent technology research and application. It is clear that the balance of the Retailtech market emphasizes the front end rather than the back end, applications rather than data, business rather than management, and technologies rather than strategies.

2 Virtual versus physical

Digital terminals accelerate the transformation of digital touchpoints and physical stores

Retail enterprises in China are no longer satisfied with operating through their traditional stores and distribution networks, so they are introducing digital technologies, setting up digitalized stores, digitally shaping frontline staff to stimulate their creativity, and enhancing the digital experience of consumers at stores. Retailers are also

using digital touchpoints to promote interaction and transactions outside stores in order to reduce operating costs, collect consumption information, analyse preferences, strengthen interaction, increase repurchases, and enable precise deliveries to consumers. Distributors and their distribution areas are also being digitally connected to help retailers explore and operate in distribution areas more efficiently and effectively.

Innovative Retailtech enterprises that specialize in the construction of digital touchpoints are growing quickly to meet the rising demand. They provide assistance to enterprises in establishing e-commerce channels, third-party platform interfaces, online interactive communities, and applets. They also provide services related to offline group buying, shopping guide direct sales, online distribution systems, and live broadcast platforms, which allows enterprises to explore the systematic construction of online and offline integrated operating systems. Both agent platforms and technical services enterprises have benefited from the recent surge of channel and terminal contact digitalization. In light of the effects that the surge has had on participating enterprises, Retailtech enterprises differ significantly in terms of their innovation level and service quality, and there is also the issue of retail enterprises' ownership of data and terminal contacts during construction.

3 Competitive and diverse

Full-scenario marketing technology applications take hold as enterprises refocus on customers

As demographic trends no longer provide an impetus for growth, the consumer market has entered a stage where competition for existing customers is intensifying, customer acquisition and marketing costs are rising, and the ad serving lacks the space for optimization. Retail enterprises have begun to strategically refocus on consumers, and they consider consumer operations to be the driving force for new growth when faced with challenges in areas such as consumers' brand awareness, precise profiling, marketing conversion rates, and business continuity planning. In order to proactively promote consumer operations, they are leveraging digital technologies, deeper consumer insights, and closer consumer communication.

In response, marketing technologies are helping retail enterprises to build their consumer operations capabilities in all scenarios, including customer

acquisition, conversion, retention and repurchase. Emerging companies that provide digital products such as SCRM, DMP, and CDP are thriving, while traditional CRM manufacturers are also expanding their product offerings to cover automated marketing. In addition to traditional marketing processes and loyalty points, these emerging companies also offer products in the areas of inbound marketing, data collection and governance, dynamic labelling operations, consumer segmentation analysis, target grouping and results evaluation. They aim to help enterprises address issues related to the collection of data from fragmented channels. They also use data intelligence analysis tools to help companies select marketing targets, terminal contacts and strategies more effectively and precisely so that the companies have more effective control over their marketing resources. Despite the boom, Retailtech applications are still faced with the issue of emphasizing marketing at the expense of operations and emphasizing business flow at the expense of business conversion. For this reason, retail enterprises should carefully consider how to construct their own capabilities to achieve long-term effective operations.

4 Transformation and revival

Business middle platform promote the transformation of Retailtech and services

As Chinese consumers become more immersed in the online environment, retail enterprises are also building business operating systems that cover all channels, categories, scenarios, links and ecosystems. Retail enterprises aspire to realize operating models that integrate online and offline channels. They want to seamlessly offer all categories of products through all channels and offer services that cover all scenarios throughout the entire consumer journey through the use of online sites, offline stores, and service ports. They also aim to achieve a full-link process that connects brands, products, R&D, manufacturing, retail, and services. With this process, companies can provide proprietary products and services and affiliated services in order to strengthen consumer loyalty and raise consumer value.

The middle platform helps retail enterprises address increasingly fragmented channel contacts, increasingly complex orders, increasingly diversified marketing activities, and increasingly ecological products and services to respond to consumer demands faster with coordinated resources. This might be “mission impossible” for traditional closely-coupled ERP, CRM, POS and data bus systems. Instead, a loosely-coupled system architecture needs to be built that features a split between systematic functions and microservices. This kind of system may help business functions quickly deploy processes in response to business requirements. More importantly, the middle platform provides the platform for operational capability upgrading, technological implementation, operational capability

system transformation, middle platform construction, and structural changes. So far, the market's knowledge and understanding of the middle platform is inadequate, and there are no standard regulations. Generally, middle platform manufacturers are still developing their products and technologies. They may not yet have the ability to initiate changes in operating systems and organizational structures, and retail enterprises need to hold careful deliberations when selecting and promoting middle platform technology.

5 Experience and preparation

Reshaping digital supply chains to reinvigorate Retailtech's competitive landscape

Most physical retail enterprises in China have developed a relatively well-established supply chain system to raise efficiency and ensure diverse product offerings. These systems generally consist of a value chain that covers R&D, procurement, manufacturing, warehousing, transportation, and services. In the face of increasingly complex consumer demands, the closed chain model is being disrupted as gross profit from product supply chains declines. In response, enterprises are turning to flexible digital supply chains and open ecosystem platforms to gain faster insights into and forecasts of consumer demands. With these systems, they can allocate supply chain resources such as R&D, manufacturing and logistics faster to meet consumer demands in terms of cost, speed, services, products and innovation.

The digital reshaping of supply chains provides Retailtech enterprises with new opportunities and a vast untapped market, including in respect of the B2B supply chain from raw material procurement to manufacturing and the B2B supply chain from products leaving factories to consumer terminals. These demands cannot be met entirely by traditional ERP, TMS, and WMS systems. Diversified intelligent services such as intelligent distribution and replenishment, digital R&D, collaborative production, smart procurement collaboration, production robots, and smart logistics are needed in order to achieve highly efficient services and meet the demand for multiple small batches, fast repurchase orders, and C2M. To date, innovative technology enterprises have accumulated solid practical experience in this regard, but the majority of them are focused on end-to-end online operations to meet requirements for warehouse and sub-warehouse distribution and overall inventory. As the digital supply chain evolves, intelligent digital technologies and the platform model will play a more significant role in connecting supply chains and resources more intensively in order to meet retail enterprises' need for a reshaped digital supply chain.

6 Exploration and commitment

Achieving intelligent transformation of operations to explore new scenarios for data application

In the era of the digital economy, the majority of physical retail enterprises in China are well aware of the strategic significance and importance of data, and they recognize data as a critical asset and core element for corporate development and growth. Early entrants in the e-commerce / platform sectors have clear advantages in terms of asset integrity and analytical capabilities. However, retailers that have been operating offline for a long time are faced with the challenge of having insufficient data assets. After transforming their front-end digital channels, terminal contacts and online business operations, the first priority of these retailers is to drive the transformation of operational data and intelligent decision-making. These enterprises hope to use data to effectively digitalize their marketing, sales and supply chain functions.

The silo approach to databases that has traditionally been adopted by retail enterprises can no longer accommodate their needs for data intelligence. Innovative technology enterprises that specialize in data intelligence start with in-house data to build a data middle platform that covers consumer-facing operations, digital marketing, store operations, delivery services, distributor empowerment and supply chain efficiency. These capabilities help enterprises address issues related to data integrity, identity consistency and service uniformity. Currently, innovative technology enterprises that specialize in data intelligence provide services for the deployment of products and technologies such as BI software products, data middle platform, model construction, and knowledge graph. Manufacturers, enterprises and industry experts need to work together in order to fully explore business scenarios and reap practical benefits from data intelligence.

7 True and practical

Improving management efficiency and broadening product and service scale advantages

As the digitalization of business and operations gains steam, physical retail enterprises in China are becoming increasingly aware of the importance of digitalized management of personnel and finance. Enterprises are hiring an increasing percentage of part-time, dispatched and shared service workers, and frontline employees are increasingly being tapped for their creativity. At the same time, higher efficiency and accuracy are now required for business collaboration and management processes. For this reason, existing OA, HR and ERP financial systems need to be upgraded so that they can flexibly meet the requirements of multiple business lines and diversified management. They also need to be able to respond to requests, free up labor, and strengthen intelligent analysis and operations faster and with minimal risk.

Retail enterprises' demand for digital management has given rise to corporate collaboration platforms, flexible employment platforms, online contracts, financial robots, and other SaaS standard product applications empowered by digital technologies. Enterprises are digitalizing and sharing processes in the areas of recruitment, employment, payroll, procurement, travelling, taxation, audit, receipts and contracts. Retailers are also developing in-house management data centres that are integrated with their existing management platforms and data middle platforms, resulting in complementary advantages; and they are using data modelling and analytics to manage scenarios. In all of these ways, enterprises are driving the digitalization of corporate financial and management models. In terms of digital management transformation, a number of innovative technology enterprises can serve as successful examples. However, it should be noted that when implementing digital platforms, one of the priorities for enterprises is to upgrade and convert their staff's skills, specifically by converting their existing operational skills into up to date operational and analytical skills.

8 Perseverance and experience

Tapping intelligence technology effect and synergizing the pace of technology and its application

The retail industry is at the forefront of intelligent technology innovation. Many retail enterprises have been able to adopt solutions such as industrial sensors, networked machines, and corporate cloud computing with the help of IoT, AI, big data, blockchain, and cloud computing. These advances are going to totally change the way that retail enterprises run their businesses. For example, IoT can be used to track retail beacons and geofencing in marketing; shopping basket monitoring, display and price optimization in store operations; preventive maintenance of equipment; and the location and status of goods in warehousing and transportation. Cloud computing is also gradually being accepted by traditional enterprises as a centrepiece of digitalization, and an increasing number of Chinese enterprises are embracing the idea of corporate cloud deployment.

Innovative Retailtech enterprises are making various efforts to explore intelligent technologies, including in the areas of WIFI and RFID, computer vision and speech recognition/natural language processing, and AI and machine learning. Many retail enterprises are still adopting a "wait and see" approach. So far, these solutions are not as popular as expected due to the heavy investment required, the expected results, and security concerns. As digital retail technology evolves, start-ups, Internet tycoons, and technology giants are flooding into the market and giving rise to unicorn companies. At this point, intelligent technology is still

at an early stage of development. Huge investment, more research, deeper exploration of segmented scenarios, and significant practical experience are needed before standard and sound product modules can be developed. Only well-capitalised unicorns, Internet giants and technology tycoons have the capital, human resources, and industry practices necessary to make significant progress in a short amount of time. For this reason, the Matthew effect resulting from accumulated advantages will become even more pronounced.

9 Planning ahead

The information security sector is set to protect the privacy of customers' information

Information security is a significant challenge that accompanies efforts to put emerging technologies into commercial use. Information security issues cannot be avoided when retail enterprises are discussing "online consumers" and "online business." During the course of digitalization, retail enterprises have been taking action to protect information confidentiality, authenticity, and integrity, and to guard against unauthorized copies and parasitic systems. They are also working to safeguard their information systems (software, hardware and the data stored on and circulated through them) from accidental or malicious destruction, modification or disclosure. In addition, they are putting measures in place to ensure the continuous, reliable and normal operation of business and management systems, as well as uninterrupted information services. For example, in digital marketing scenarios, data should be used in a reasonable manner to avoid infringement, abuse or disclosure of consumers' private information.

Apart from traditional security measures such as anti-virus software, firewalls, and intrusion detection systems, production lines such as secure gateways, secure audit products, and secure application products have been fully developed and are available to the consumer retail industry. Generally, compared with developed information security markets in other parts of the world, the information security market in China is scattered, and traditional enterprises are still uncertain about the importance of information security. Investments in information security may not result in economic benefits as directly as investments in marketing, for example. Information security only proves its value when there is a cybersecurity incident, so investment in information security is relatively low. As a result, innovative technology enterprises that specialize in information security for retail enterprises are few and far between. Information security is still an untapped market with a promising future, and it offers an opportunity for brand retailers and technology enterprises to invest and work more closely together.

10 Diligence and persistence

COVID-19 has accelerated transformation, resulting in the development of long-term digital capabilities

The outbreak of COVID-19 has posed tremendous challenges and opportunities to the retail industry in China and around the world. The competitive landscape of the retail industry has been made more complicated due to the uneven impact brought by the outbreak, which has highlighted the concepts of "winner takes all" and "comparative advantage." The universal lockdown during the outbreak has divided consumers into those who want things "fast and cheap" and those who desire a "premium experience." As a result of the outbreak, enterprises have started to change their strategies, engaging in what some have described as "strategic retreat" and "flexible innovation." Retail enterprises have embarked on the path to digitalization, and they cannot turn back. Going forward, they will strive to be more elastic and resilient in order to offer a new experience to consumers.

New opportunities for Retailtech are hidden in the trends that are emerging after the outbreak. New business trends include increased online marketing of consumer and fresh products, functional division of physical stores, the rise of community commerce, intensive connectivity of supply chains, and accelerated integration of platform enterprises and industries. Retail enterprises are becoming more concerned about the value of consumer data assets, and they are building private domain data banks. In addition, they are conducting digital marketing in online communities and engaging in live broadcasting in order to send messages faster through personalized interactive platforms. Retail enterprises are also trying to minimize inventory risk through product upgrades. In addition, as part of their "long-term battle strategy," enterprises are building shared supply chain networks based on product varieties in order to achieve agility and flexibility and manage cash flows. Innovative Retailtech enterprises should seize new opportunities to speed up product and service innovation, and they should work with retail enterprises to complete digitalization and capitalise on new technologies.

China Leading Retailtech 50 List

Leading Retailtech List

<u>Abbreviated name</u>	<u>Abbreviated name</u>	<u>Abbreviated name</u>
Aibee	QuantumAsia	Tuputech
Customer Insight	Co-Mall	Terminus
AlInnovation	EC	Whale
Dmall	Dorabot	Fresh Life Style
Deepexi	Mininglamp technology	Antwork
4Paradigm	Malong	YHOUSE
Fadada	WiWide	Yunji Technology
Fanruan	Oudianyun	EZR
Geek+	oTMS	Encoo
GaiaWorks	QFPay	XForcePlus
Guandata	Reconova	Deepleaper
Heading	Rongyi E-Commerce	Yimian
HYPERS	Sensors Data	Yunxi Technology
Hanshow	Shiheng Technology	Zaihui
Infimind	Cardinal Operations	RTMap
Extreme Vision	Shuyun	ZMT
Clobotics	ImageDT	

Emerging Retailtech List

<u>Abbreviated name</u>	<u>Abbreviated name</u>	<u>Abbreviated name</u>
OpenFuture	Jieke Technology	EPet
BJUCloud	Merlinbird	eFood Supply Chain
Chilun Yichuang	Mai	YALABI
Dintech	Techsun	YipLED
Whole Link Technology	Xiechengyun	

* Names are listed in alphabetical order by their Pinyin names.

Note: The **China Leading Retailtech 50** aims to raise the retail industry's awareness of Retailtech, promote exchanges within the industry, and encourage the regulated development of Retailtech. The Report does not evaluate the compliance and investability of the candidates, nor does it interpret any regulatory policies. This selection is free of charge.

Appendix I

KPMG China's Retailtech leaders

* Names are listed in alphabetical order.

柴婧 Crystal Chai	Partner, Audit
陈轶 Alan Chen	Senior Partner, Wuhan
冯炜 Tony Feng	Partner, Tax
高松 Susan Gao	Partner, Audit
耿苗 Michelle Geng	Senior Manager, Tax
顾琳 Linda Gu	Partner, Audit
雷江 Johnny Lei	Partner, Audit
李晨 Cloris Li	Partner, Tax
李歆 Jocey Li	Senior Manager, Audit
李喜洋 Johnny Li	Senior Manager, Tax
李瑶 Tracy Li	Partner, Audit
梁幸华 Samuel Liang	Partner, Audit
刘庆宏 Helen Liu	Senior Manager, Audit
卢鹏鹏 Allen Lu	Head of Technology, Northern Region
吕欣洁 Jelena Lu	Partner, Audit/ Head of ASPAC Taiwan Practice
毛健 Michael Mao	Partner, Advisory Head of Consumer and Retail Sector, KPMG China
吴宇希 Anthony Ng	Head of Business Reporting and Sustainability, Southern Region
吴剑林 Philip Ng	Partner, Head of Information and Technology
钱亦馨 Jessie Qian	Partner, Head of Consumer and Retail Sector

孙国宸 Willi Sun	Partner, Strategy Advisory Consumer and Retail Sector
谭圆 Joyce Tan	Partner, Tax
谭亚红 Julia Tan	Partner, Audit
王敬庭 Chris Wang	Associate Director, Corporate M&A and Finance
王晓琨 Kenny Wang	Director, Tax
吴量 Liang Wu	Director, Tax
吴岚 Veronica Wu	Partner, Audit
颜丽 Spring Yan	Partner, Audit
杨义萍 Enid Yang	Partner, Audit
杨莉 Vivien Yang	Partner, Audit
虞晓钧 Edward Yu	Head of Innovative Enterprise, Eastern and Western Region
袁浩恩 Simon Yuan	Director, Tax
张琳琳 Emma Zhang	Director, Tax
张进 Jessie Zhang	Partner, Tax
张晓磊 Lane Zhang	Partner, Audit
张杨 Sunny Zhang	Partner, Audit
周倩 Jessy Zhou	Partner, Audit
周徐春 Vincent Zhou	Partner, Audit/Head of PRC Capital Markets in Jiangsu and Anhui Provinces

Appendix II

China Chain Store & Franchise Association Selection Committee



Kevin Peng

China Chain Store &
Franchise Association
Secretary-General

Mr Kevin Peng is the Secretary-General of the China Chain Store & Franchise Association. Mr Peng initiated and established the China Retail Innovation Centre, and he introduced initiatives such as the digital common standards for the industry and corporate digital maturity evaluations. He is also responsible for hosting large events, including the Digital Innovation Conference and the China National Retail Congress of the China Chain Store & Franchise Association. Mr Peng is involved in developing the first online training course for retail management in Asia: the CCFA Registered Category Manager Training Programme. He also successfully undertook the supervision and inspection project for the special training merchandise retail stores for the Beijing Olympic Games on behalf of the CCFA team in 2008.



Ruifeng Tian

China Chain Store &
Franchise Association
Deputy Director,
Industry Innovation
and Development
Department
Director-General,
Supply Chain
Professional
Committee

Mr Ruifeng Tian is the Deputy Director of the Industry Innovation and Development Department of the China Chain Store & Franchise Association. He is responsible for the research and implementation of innovative retail technologies. He advised and was involved in the preparation of the *Guidelines for Retail Chains to Adopt Cloud Platforms*, and he launched and promoted the OSA 2.0 project based on retail stores. In addition, Mr Tian promotes the development and transformation of start-ups through the “Emerging Enterprises of the Year” selection, supply and demand matching, and seminars.

Mr Tian has more than 10 years of experience in supply chain management. He developed KPIs for the industry’s supply chain, and he has also provided benchmarking and analysis between supply chains in China and Europe and between China and the US. He has been involved in the preparation of many international and industrial standards, and he has promoted their implementation through various specific initiatives (such as standardization of plate transportation and fresh turnover per basket). He has also contributed to the flow of retail supply information, distribution/dealer optimization, cold chain temperature control, environmental and sustainability initiatives, and urban distribution.

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Appendix III

KPMG Consumer Markets Insights publications



Consumers and the new reality
COVID-19 pulse survey
Wave 5 update
September 2020



Consumers and the new reality
July 2020



Global retail trends 2020
May 2020



Reshaping Growth
The Power of Digitalization for Chinese
Retailers in 2019
April 2019



China Convenience Store Development Report
May 2019



Playing the Digitization Melody: 2020
Consumer Ecological Full-Link Digitization
Transformation White Paper
October 2019

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