

Navigating
the Chinese
Research
Publishing
Landscape
for Maximum
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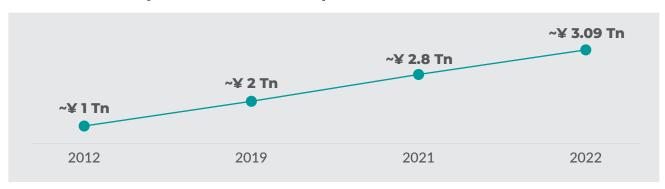
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1 Introduction

Following the 14th Five-Year Plan (FYP) for 2021–2025 and the Outline of Vision Goals 2035, China has undertaken several initiatives for science and technology development. As just one major initiative, China's expenditure on research and development, which has shown an average annual growth rate of 11.7% since 2012, is expected to continue to grow, according to data released by the National Bureau of Statistics.

China's R&D Expenditure over the past decade



The intensity of expenditure (the ratio of R&D expenditure to GDP) has also increased rapidly over the past decade, <u>reaching 2.4%</u> in 2021, which is close to the average level of OECD countries.

Moreover, in October 2022, the 20th National Congress of the Communist Party of China put forward a series of significant new thoughts, views, and judgments and elaborated on major issues such as the Chinese characteristics and essential requirements of Chinese-style modernization. Part of these were pronouncements regarding scientific and technological development in China.



We should fully trust and respect researchers, grant them greater autonomy in using funds, and stimulate their enthusiasm! Scientific and technological personnel are the core elements of scientific and technological innovation and the important, irreplaceable force in creating social wealth. They should be the middle- and high-income group in society.

Li Keqiang,
 The former Premier



"

To join the new era and forge ahead on a new journey, we must always take serving the country's major strategic needs as our duty. The progress of molecular sieve science and technology for our realisation of efficient utilisation of resources, energy saving, environmental protection, and carbon neutralisation plays an important role.

- Yu Jihong,

Academician of the Chinese Academy of Sciences

Additionally, China seems to be well on its way to becoming a publishing superpower as well. Between 2011 to 2021, the number of published papers, including open access papers, in China has increased; notably, the number of gold open access papers has shown an annual growth rate of 30.5%!

30.5%

Annual growth rate of the number of gold open access papers

Furthermore, the number of research personnel, including master's and doctoral students is increasing quickly, which indicates a growing number of Chinese researchers who will become the main contributors to the global research publishing industry in the years to come.



Added to this is the fact that China, which already has a very unique Internet landscape, aims to form a new 'digital China' by 2035, as per the 14th FYP. This means that new media will inevitably become the path for the digital transformation of the publishing industry.

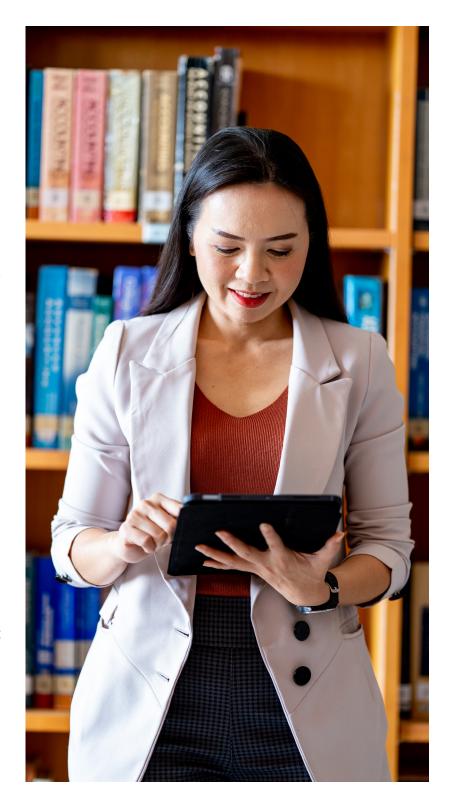
Overall, there is no doubt that China is on its way to becoming a major global hub of scientific development and innovation. Given the growth rate of both research publications and personnel, it is imperative that international and Western publishers establish themselves in the Chinese researcher ecosystem to stay globally relevant. In this Whitepaper, we discuss how they can achieve this.

China The New Research Publishing Superpower

Augmenting China's 14th FYP, the Chinese Communist Party (CCP) has issued a series of important policies and measures, including Opinions on Deepening Reform and Fostering World-class Sci-Tech Journals, Opinions on Promoting the Prosperous Development of Academic Journals, and Implementation Opinions on Promoting the Deeply Integrated Development of Publishing, which provide a roadmap for creating an extremely favourable policy and cultural environment to build China into a research and publishing superpower.

In May 2021, the National Press and Publication Administration launched the Publishing Integrated Development Project, which gave further direction for the digital development of the academic publishing industry.

In short, China is not only increasing its research personnel, scientific output, and publishing volume, it is leveraging the digital to make science and technology a part of modern Chinese culture.



2.1 Rapid Growth in Academic Publishing



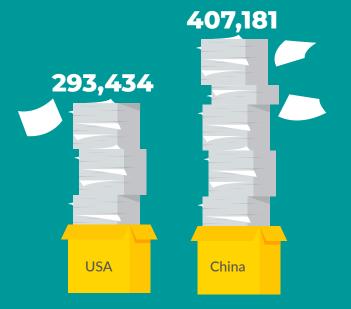
Number of books published

was the largest globally, during the 13th FYP period (2016-2020)

~500,000

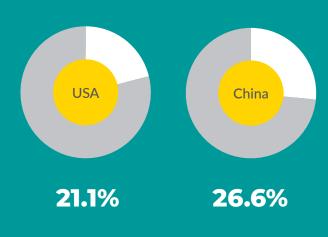
Scientific papers published

(No. of papers by country in 2019)



Share in the top 10% most cited papers

(% of share by country)



From the perspective of the number of publications, China is already a big publishing country.

During the 13th FYP period (2016–2020), the number of books published in China was the largest globally, with about 500,000 varieties. In 2019, China published 407,181 scientific papers, surpassing the United States, which published only 293,434 papers. Furthermore, Chinese papers

accounted for 26.6% of the top 10% of most cited papers, which again, beat the US score of 21.1%.

This is a reflection of China's publication quality. And cognizant of the importance of quality along with quantity when it comes to being a research publishing superpower, China has now laid emphasis on further improving quality on its road to overtaking the United States in terms of all these metrics.

2.2 Growing Scientific R&D-Related Talent Reserve

Growth in R&D personnel (including basic researchers) in China (No. of personnel between 2012–2022)



2012 2022



China has the highest number of R&D personnel globally

China has the highest number of digital technology talents globally (~17% of global total)

High-level talent from



The number of R&D personnel, who contribute to the increasing number of publications, in China has been rapidly growing. Between 2012 to 2022, the number of R&D personnel (including basic researchers) in China, increased from 3.25 million to 6 million, keeping China at the top of the world in terms of R&D personnel. According to the Chinese government surveys, this rapid growth allowed China to surpass the United States and rank 1st globally in the year 2019, in terms of R&D personnel.

Even in terms of digital technology talents, <u>China</u> ranks 1^{st} in the world, accounting for ~17% of <u>the global total</u>, according to a 2023 Ali Research report on the strength of the science and technology talent reserve and data from AMiner.

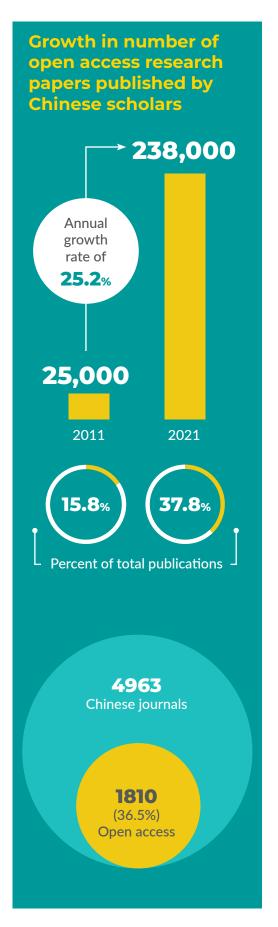
Most of these high-level talents (H-index ≥20) are in Chinese higher education institutions, such as the Chinese Academy of Sciences (CAS) and Tsinghua University, indicating a healthy growing workforce.

2.3 Digitisation of Academic Publishing in China

According to National Press and Publication Administration data, the retail sales of teaching materials and auxiliary books reached ~64.2 billion yuan in 2019, accounting for ~65% of the retail sales of books. The proportion of teaching materials and auxiliary books is too large to allow China to become a publishing superpower country. Hence, China now aims to enhance the diversity and quality of publishing methods and improve the digitalisation of research publishing.

Open access publishing has been gaining popularity in China. Recently, the China Association for Science and Technology and International Association of Scientific, Technical and Medical Publishers (STM) published the China Open Access Publish Development 2022 Report. According to this report, the number of open access research papers published by Chinese scholars increased from 25,000 (15.8% of total publications) to 238,000 (37.8% of total publications) between 2011 and 2021, with an annual growth rate of 25.2%. Among the 4963 Chinese journals, 1810 (36.5%) are open access. According to Web of Science, among the 152901 journal papers that were co-authored by Chinese scholars and international scholars in 2021, 41.7% of the papers are open access. By 2020, 428 English journals had obtained a China standard serial number (CN); of these, 82% of journals collaborated with international publishers.

Thus, with the implementation of new policies, acceptance of the open science movement, and the wide application of digital, networked, and intelligent technologies, China's science and technology industry and journal publishing industry have been deeply integrated into the global open scientific practice. Despite this, it can be challenging for global publishers to adapt to the unique Chinese context and culture in the digital era with increased competition. Hence, there is a need to understand China's unique digital media landscape and appropriately navigate and leverage the tools that it offers to engage China's scientific community.



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The Scientific Community Within China's Social Media Landscape

Although China took to the internet relatively late, it is now one of the leading countries in the Internet sector, especially in the world of social media and networking. According to the 50th Statistical Report on the Development of China's Internet in 2022 by the China Internet Network Information Center (CNNIC), the number of Chinese netizens reached 1.051 billion, an increase of 19.19 million compared with that in 2021. The Internet penetration rate reached 74.4%.

Notably, the <u>mobile Internet penetration rate in China is rapidly rising</u>, with 1.047 billion mobile Internet users as of June 2022, and the proportion of Internet users using mobile phones has reached 99.6%.

To be able to find a way into the Chinese researcher ecosystem, global publishers will need to first understand the Internet ecosystem of China, which is very distinct from that of the rest of the world.

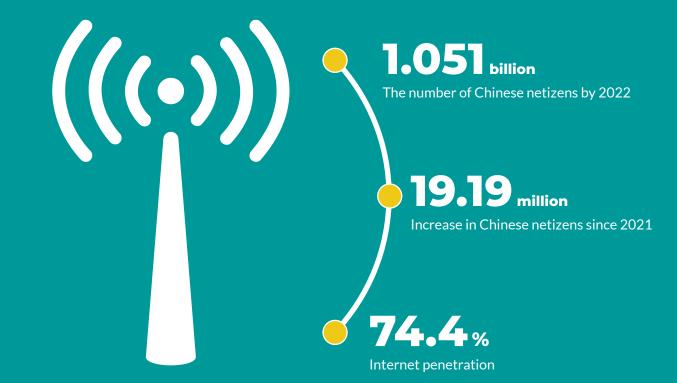
A notable feature of China's current internet landscape is the dominating presence of varied multipurpose applications named super apps, with an estimated 500 such core apps.

Super apps provide a variety of services, including shopping, making online payments, applying to a bank, taking a doctor's appointment, and sharing digital content, all through a single all-encompassing integrated platform that functions for commerce and communication. They have become an integral part of users' lives, with millions relying on these apps on a daily basis. Some of the top examples of super apps are WeChat or Alipay.

This report briefly introduces some of the super apps that are closely related to academic publishers and societies.



China's Internet Growth



Mobile internet penetration in China



3.1 The WeChat Ecosystem

WeChat, developed by Tencent, is the largest social network in China, with 1.309 billion monthly active users as of November 2022, according to Tencent's Q3 of 2022 Financial Report. WeChat offers various features such as Official accounts, Moments, News, Video Channels, Livestream, WeChat Mini Programs, WeChat Search, Ads, and WeChat Pay.

The WeChat Official account enables multimedia communication, forming a mainstream online and offline WeChat interactive marketing method.

The WeChat official account has two main types: subscription account and service account, with the former mainly used for information distribution, and the latter for service interaction with users.

The WeChat Video channel, officially launched in 2020 as a strong competitor to TikTok (Chinese version: Douyin), already had ~364 million daily active users by 2022. The platform acts as a video content recording, creation, and distribution platform within the WeChat ecosystem.



The WeChat Mini program has an "allin-one" design that provides excellent



user convenience. It can integrate seamlessly with online shopping systems, has high accessibility with multiple access approaches, and has a strong transmission ability to support quick and accurate data synchronisation. Furthermore, it also supports various APIs for more accessible customer service and communications, including the Social Customer Relationship Management (SCRM) system. With all this to offer, it is not surprising that by 2022, the WeChat Mini Program achieved more than 600 million daily active users, with a 30% year-on-year growth (according to a WeChat official report).

WeChat Moments is a social networking platform wherein users can post text, pictures, and videos and share articles, images, videos, or music from WeChat Official accounts or Video channels. As the content is only visible to the user's WeChat friends, WeChat Moments acts as a social circle based on trust.

The WeChat ecosystem also has a WeChat Ads feature. Additionally, marketers have also the option of choosing the Key Opinion Leader (KOL) promotion approach. KOL promotion involves paying a famous WeChat Official account or a famous Video Channel owner to do the promotion. For example, many famous scholars have personal or official WeChat accounts, and the sharing of articles or videos by these leading scholars can ensure quick circulation of the content among the Chinese research community.

WeCom is another tool created by the Tencent WeChat team. It has the same communication experience as WeChat, a rich open access application, and the ability to connect with the WeChat ecology, which can help enterprises connect with internal ecological partners and consumers. The differences between WeChat personal account and WeCom account are listed below.

WeChat personal account	WeCom account
Mainly for personal usage. If frequently used for marketing, may face the risk of being banned.	The WeCom account has certified employee information and enterprise information, which is more secure and professional for customers.
One account can have a maximum of 5,000 WeChat friends and limited marketing functions.	A certified WeCom account under one company can have up to 50,000 customers at first and can expand if necessary. These customers will have access to several marketing functions, such as automatic greeting, automatic reply, mass messaging, and tagging of customers.
Lead churn is a potential risk when a staff leaves the company, as the leads are bound to the staff's personal accounts.	All the leads can be saved at the WeCom backend and easily assigned to other team members.

Many enterprises use WeCom and WeChat group chat to interact with private domain customers. As WeChat is only a social software with limited functions; it cannot provide statistical analysis of customer data, nor does it have the perfect marketing-related functions. This is where WeChat's sCRM systems and WeCom come into the picture. sCRM can provide customer relationship management services for enterprises through WeCom to help companies better manage customer relationships, increase customer live time values, and help companies optimise their strategies by analysing customer data. When WeCom is integrated with the sCRM system, the brand can improve their customer relationship management with high efficiency. They can effectively collect, manage, analyse and utilise customer data, improve service quality, understand customer real-time demand, and adjust marketing strategies and decisions with agility.

In the current 5G era, digital media has been widely valued in academia. Since 2016, the WeChat ecosystem has become an essential way for Chinese publishing institutions to innovate marketing methods. Moreover, among the various digital media platforms, WeChat has become the first choice for global publishers/societies to go to market in China. Increasingly, world-leading global publishers (e.g., Nature, Taylor & Francis, Elsevier, Springer, and Wiley) have not only set up more than one official account, but have also been increasing their touch points with their audience by leveraging the Video channel, Mini programs, SCRM system, KOL promotion, and even WeChat Ads within the WeChat ecosystem.

Screenshots of the WeChat official accounts registered by some global publishers:

(1) Springer Nature Group, (2) Wiley, and (3) Taylor and Francis Group.

(1) (2)







3.2 The Weibo Platform

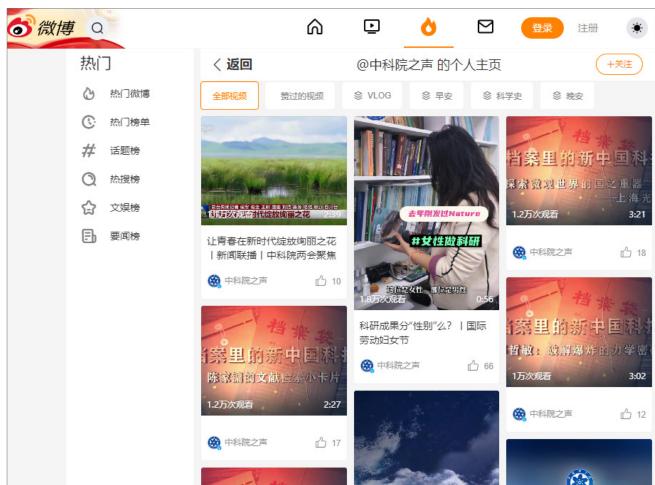
Weibo is a microblogging platform where people can share instant information, communicate, and interact in the form of short text, pictures, videos, and even long articles. Different from WeChat, which is based on one-on-one social connection, Weibo is a social media platform that allows users to communicate directly with the public. According to the latest Q4



financial report released by a Weibo official, the monthly and daily active users of Weibo have continued to increase, reaching 573 million and 249 million, respectively. Through Weibo, publishers/societies can rapidly share research on hot topics among users. For example, the Chinese Academy of Sciences (CAS) launched its official Sina Weibo account on June 7th, 2013 (see screenshots below). By December 18th, 2022, the official Sina Weibo account of CAS had published 38,261 posts, received 4,508,000 followers, and 34,538,000 views on videos.

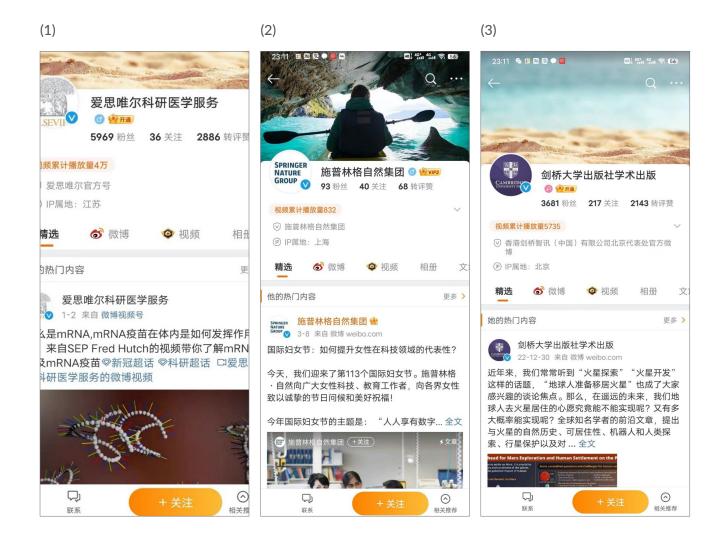
Screenshots of the official Sina Weibo account of CAS





Screenshots of the Weibo accounts registered by some international publishers:

(1) Elsevier Medical Service, (2) Springer Nature Group, and (3) Cambridge University Press.



3.3 The Bilibili Community

Bilibili was founded on June 26th 2009, and is a cultural community and video website in China, with <u>85% of its users being <35 years of age</u>. It started as an anime, manga, games (ACG) content creation and sharing video site, but it has grown to become a continuous ecosystem of quality content users, creators, and content, encompassing a <u>multicultural community of more than 7,000</u> interest circles.



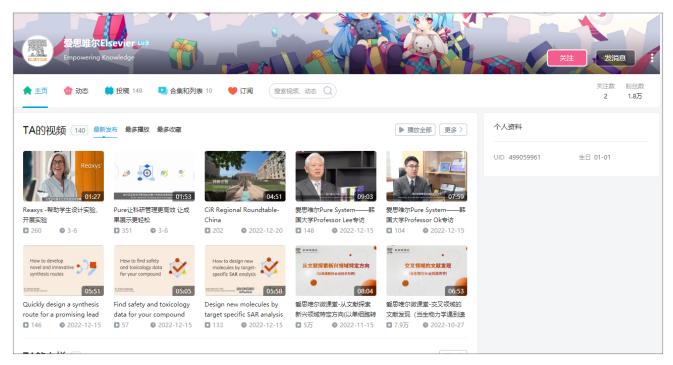
Screenshots of some international publishers' accounts on Bilibili:

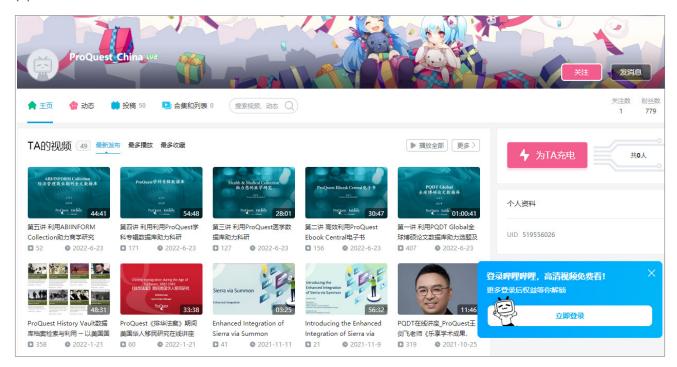
(1) Wiley, (2) Elsevier, and (3) ProQuest China.

(1)



(2)





3.4 Little Red Book

Little Red Book was developed as a lifestyle-sharing platform and consumption decision-making portal, characterised by attractive images and videos. However, with the expansion of the user base and the diversified development of the platform, the interest of Little red book's users has already penetrated all aspects of life. According to a Little Red Book official report, there are more than 200 million monthly active users on this platform



report, there are more than 200 million monthly active users on this platform as of 2022, 72% of whom are born in the 1990s, and 50% are distributed across first and second-tier cities. There are a total of 43 million content creators. Among them, there are young researchers (mainly females) who share their achievements, experiences, and lifestyle. This way of informal sharing has become increasingly acceptable to young researchers.

Several global publishers have setup official accounts on Little Red Book, using communication styles and content that are relatable to this younger generation.

Screenshots of Little Red Book accounts registered by some international publishers:

(1) Elsevier and (2) Wiley Edge.

(1)





3.5 Zhihu

Founded in 2010, Zhihu has grown from a small question-and-answer (Q&A) community with only 200 people to one of the top five online Q&A communities in China. As of 2022, the number of Zhihu users has reached 105.9 million, with a year-on-year increment of ~12.3%. More than 73% of Zhihu users are under the age of 30, which shows the app's deep influence

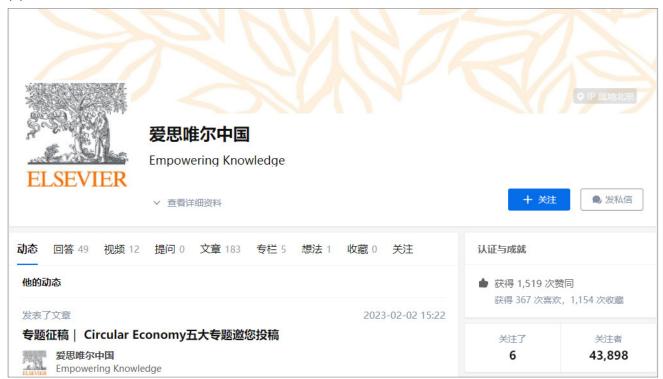


among young people. As the only text- and graphic-based knowledge community with more than 100 million users in China, Zhihu has accumulated a large number of high-quality content with a long life cycle and has successfully positioned itself as 'the place to look when there is a problem' among Chinese users, which is scarce in the domestic Internet ecosystem of China.

Screenshots of the Zhihu accounts of some international publishers:

(1) Elsevier, (2) Taylor and Francis Group, and (3) Maximum Academic Press.

(1)





(3)



New Media in a Digital China

Besides social media platforms, the Chinese digital landscape also has search engines and other community forums that are inhabited by millions of people from the researcher ecosystem.

4.1 Search engines

Although Google dominates the search engine market in many countries, this is not the case in China. Since Google pulled out of the Chinese market in 2010, local search engines have been quickly developed to better fit the Chinese language and culture. By July 2022, Baidu, one of the world's most significant Al and Internet companies, dominated China's primary (71.2%) search engine market.

Over the years, Baidu has grown much beyond a search engine with a massive ecosystem that includes products & services such as Baidu Trust, Baidu Wiki, SEM ads, Brand Zone, Programmtic Ads, Baidu Scholar, Baidu Zhidao, Baidu Wenku, Baijiahao (similar to the WeChat Official account), Baidu Map, Haokan Video, etc.

Baidu Trust is a Baidu service to provide



enterprises with authentication, which can endorse the enterprise, and win the trust of users. Baidu Trust Certificate is the first important thing to consider for safely building a sustainable presence in China. Baidu's own SSL certificate brand provides globally trusted server verification and data transmission encryption services. Baidu officials conduct strict authentication audits on enterprises who apply for the Baidu Trust. The enterprises' websites with Baidu Trust will have a blue badge, along with the ranking of the website appearing on the first page when users search for keywords.

Baidu Wiki (also known as Baidu Baike), the Chinese version of Wikipedia, serves as a collaborative Chinese encyclopaedia for internet users in China. As an essential part of the Baidu ecosystem, the entries in Baidu Wiki are predominant in Baidu search results. Therefore, all brands are eager to set up quality pages on Baidu Baike for better visibility. Although anyone can create and maintain entries on Baidu Wiki, the censorship of each entry is becoming increasingly strict to ensure that only objective facts from verifiable content sources are presented on this platform.

Apart from Baidu, China also has other search engines such as Sogou, Haosou, Kuake, and Youdao. Sogou, which is WeChat's search engine, has been showing a modest increase in market share (~4.83%) in China, while Haosou (360 Search) only has a 2.2% market share.

4.2 Niche Sites for Academia in China

China also has a few sites that specifically cater to the scientific academic community in China. These include platforms such as the DXY Internet Medical Platform, Muchong forum, Sciencenet, and Linkresearcher.



The <u>DXY</u> platform is a medical academic exchange platform website and is the industry's largest and most influential social media platform. With the deepening and development of professional communication, it has developed from a message board that only a few people read every day to a comprehensive life science forum with <u>more than 2.8 million professional members</u> and is moving towards becoming a comprehensive life science portal.



The Muchong forum, founded in 2001, is popular among doctoral and master's students from domestic universities and research institutes, and enterprise R&D personnel. With a good communication atmosphere and broad communication space, it has become a platform for academic resources and experience exchange. The content covers chemistry, chemical engineering, biomedicine, physics, materials, geography, food, science and

technology, information, economic management, and other disciplines. In addition, one can also obtain practical information such as material on fund applications, patent standards, studying abroad, postgraduate entrance examination and doctoral examination, and paper submission.



Sciencenet is a comprehensive science website supervised by the Chinese Academy of Sciences, the Chinese Academy of Engineering, and the National Natural Science Foundation of China. It is sponsored by Science Time. It mainly provides Internet users with fast and authoritative science news reports, rich and practical science information, and an interactive network platform. It aims to become the most influential global Chinese science community.



Linkresearcher is a research information aggregation platform that provides high-quality content suitable for users engaged in research. It provides paper summaries in Chinese so that users can quickly understand the main point of the paper and gauge its validity and suitability so that they do not need to spend time reading a paper in English if it is of no interest to them. The platform also lists information on available scientific research jobs and contains a research career column that discusses problems faced by researchers, such as the relationship between mentors, the current situation of female researchers, and the application for research funds. As a partner of Linkresearcher, Impact Science has been cooperating for several years with this leading platform on several projects, such as Ranking Global Academic Journals' Impact on WeChat and Ranking Chinese Academic Journals' Impact on WeChat.

4.3 Press release platforms

With the rapid development of Internet technology, communication channels and media patterns have also been revolutionised. New media based on mobile Internet has risen strongly and gradually become the dominant force in the media industry. Moreover, due to COVID-19, publishers have had to carry out marketing through online

live broadcasting and other means. Apart from using the most popular new media platforms like WeChat and Baidu, Chinese publishers also leverage digital press release sharing platforms, or news channels, to broaden their impact, such as Tencent, Sina, The Paper, China Daily, and Sohu.











All these popular press release media have a category of science and technology to introduce scientific research-related news, and could provide a good marketing channel for publishers. Some international publishers have started to leverage the press release mechanism to their advantage. For example, Elsevier registered an account on

Sohu for its medical publishing advertisement, including medical book recommendation, application toolkits, online learning, and medical research publication. Sohu news users can subscribe to the news feed from the Elsevier Sohu channel. By March 2023, it already had over 688,000 reads of 932 articles.

Screenshot of Elsevier's Sohu webpage



4.4 Marketing Automation and sCRM

Marketing automation refers to the use of digital technology to automate the marketing process. It can help publishers save time and money by automating email marketing, social media campaigns, and targeted advertising to maximise their reach. This section will introduce the two most common marketing technology initiatives used by global publishers in China.

sCRM refers to the social customer relationship management system, which is an expansion that

has evolved from the traditional CRM. Through social management and operations to manage their relationship with users, companies can improve the customer life cycle value, increasing the user conversion rate and return on value.

Among the various international publishers, Elsevier and Wiley are the most active in using sCRM for customer management and social networking. Elsevier provides an online learning platform named Researcher Academy while Wiley provides a similar online learning platform named Wiley Research. Customer management for both are done through sCRM.

In the era of vigorous development of science and technology and new digital trends, the development of marketing technology will be key for publishers. Considering the fierce competition, publishers must make marketing technology usage strategies in advance to maintain leading positions and healthy competitiveness.

Conclusion

In summary, China will continue to rapidly develop its research publishing sector, gaining benefits from government policies regarding financial funding support, talent cultivation, open access publishing, and systematic revolution of research publishing. In addition, with the rapid digitisation of the publishing market in China, leveraging new media, such as tools and resources provided by the WeChat ecosystem and other platforms has become essential for any publisher or research society to succeed in the China market. Case studies of leading Chinese publishers and global publishers have provided good exemplars of best practices in applying various digital penetration strategies to achieve success in China. In the near future, more global publishers will join the competition in China's research publishing market. Those who can seize the opportunity earlier will have a better chance to establish themselves.



Our Offices

Our global identity is a composite of our localized teams. We are stitched in diversity. We understand the needs of the people whom you wish to speak to, from the policymakers to the person at the very end of your last mile.





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