

## INDUSTRY OVERVIEW

*The information and statistics set out in this section and other sections of this document were extracted from different official government publications, available sources from public market research and other sources from independent suppliers. In addition, we engaged CIC for preparing the CIC Report, an independent industry report in respect of the [REDACTED]. The information from official sources has not been independently verified by us, the [REDACTED], the [REDACTED], Sole Sponsor, [REDACTED], [REDACTED], any of the [REDACTED], any of their respective directors and advisers, or any other persons or parties involved in the [REDACTED], and no representation is given as to its accuracy.*

### SOURCE OF INFORMATION

In connection with the [REDACTED], we have commissioned CIC to conduct a detailed analysis and prepare an industry report on the medical imaging market in the PRC. CIC is an independent consulting firm founded in Hong Kong. It offers industry research and market strategies and provides growth consulting and corporate training. We incurred a fee of RMB900,000 for the preparation of the CIC Report. The payment of such amount was not contingent upon our successful [REDACTED] or on the results of the CIC Report. Our Directors are of the view that the fee is in line with market rates and the payment does not affect the fairness of the views and conclusions presented in the CIC Report. Except for the CIC Report, we did not commission any other industry report in connection with the [REDACTED].

We have included certain information from the CIC Report in this document because we believe such information facilitates an understanding of the medical imaging market for potential investors. In compiling and preparing the CIC Report, CIC has adopted the following assumptions: (i) the overall social, economic and political environment in China is expected to remain stable during the forecast period; (ii) China's economic and industrial development is likely to maintain a steady growth trend over the next decade; (iii) related key industry drivers are likely to continue driving the growth of the China's medical imaging cloud services and medical imaging film products market during the forecast period, such as favourable policies promoting the development of the medical imaging industry, the increasing demand for remote consultation, inter-hospital information sharing and communication; (iv) the impact of COVID-19 on medical imaging cloud services and medical imaging film products market is minimal; and (v) there is no extreme force majeure or industry regulation by which the market may be affected dramatically or fundamentally. CIC conducted both primary and secondary research using a variety of resources. Primary research involved interviewing key industry experts and leading industry participants. Secondary research involved analysing data from various publicly available data sources, such as the National Bureau of Statistics of China, the International Monetary Fund, World Health Organization, U.S. Food and Drug Administration, Global Health Data Exchange, National Medical Products Administration of China, and National Health Commission of China. Therefore, our Directors are of the view that the sources of information used in this section are reliable. Our Directors confirm to the best of their knowledge, and after making reasonable enquiries, that there is no adverse change in the market information since the date of publication of the CIC Report which may qualify, contradict or have an impact on the information set out in this section.

### OVERVIEW OF CHINA'S MEDICAL IMAGING FILM PRODUCTS MARKET

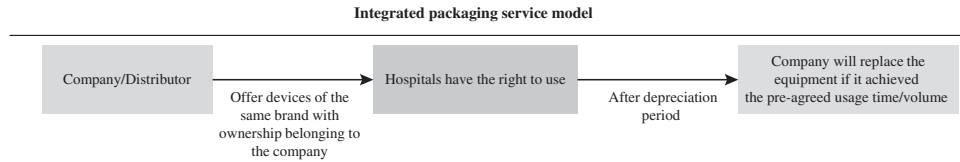
#### Definition of Medical Imaging Film Products Market

Medical imaging film products mainly include different categories of medical image printing instruments and consumables. Medical image printing instruments refer to machines or equipment for processing medical imaging film or medical imaging discs, including traditional medical imaging film printer, self-service film output machine and image distribution system. Medical image consumables include medical imaging film or medical imaging discs, which refer to the medium used to carry the graphical information of medical images to diagnose patients' condition. The three main types of medical imaging films used frequently in clinical practise are medical dry laser film, thermal film and medical printing film, and the most common size is 14x17 inch. The average selling price for 14x17 inch medical dry laser film in China was around RMB25 in 2016, and decreased to around RMB17 in 2021. The average selling price for each 14x17 inch thermal film in China was around RMB25 in 2016, and decreased to around RMB14 in 2021. The average selling price for each 14x17 inch medical printing film was around RMB15 in 2016, and medical printing film have since lost significant market share due to the increasing availability of higher resolution medical imaging films such as medical dry laser film and thermal film.

The common sales model of medical imaging film products distributors is the integrated packaging service model. Integrated packaging service refers to the provision of corresponding printing instrument in the course of the sale of medical consumables. Consumables and equipment have to be used together due to technical reasons, which means the printer is only compatible with films of the same brand, and the use

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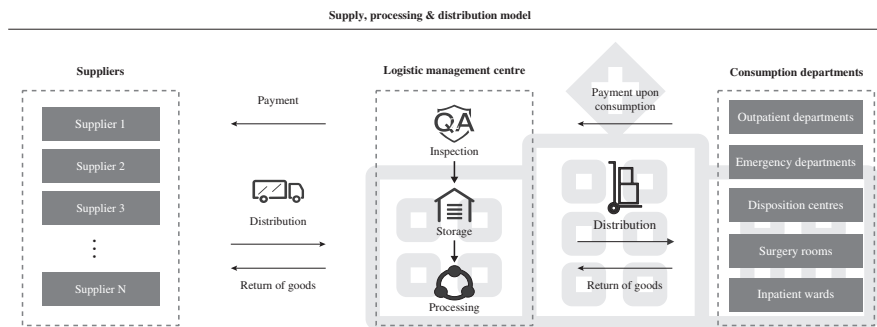
of different brands may lead to a distortion of images. Therefore, integrated packaging service model is used by more than 80% of medical imaging film products suppliers and distributors. Under integrated packaging service model, hospitals can avoid incurring substantial upfront expenditure on purchasing printing instruments whilst medical imaging companies can obtain long-term stable orders.



Source: China Insights Consultancy

The common distribution model of the medical imaging film products market is the supply, processing & distribution (SPD) model, of which the procurement process, warehousing management, storage, and delivery, invoicing and collection of payment are outsourced to deliverers (配送商). This model aims to realise unified management of medical consumables in hospitals by rationally using the resources in the medical logistics supply chain, which in turn largely reduces the workload of the department of procurement and increases the efficiency of procurement. With the construction of a central warehouse, implementation of tailored-packing and barcode management, and the establishment of the inventory control model, it also realises scientific, lean, and transparent management of medical consumables, which effectively reduces the inventory costs and risks of shortage of medical consumables in hospitals. An increasing number of hospitals and healthcare institutions in the PRC are adopting the SPD model.

Below is the illustrative diagram of the SPD model.

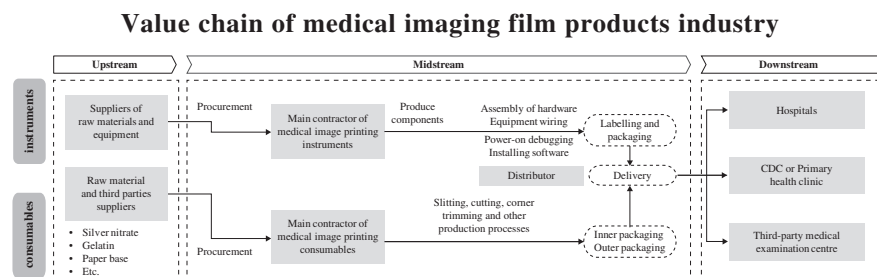


Source: China Medical Device Supply Chain Development Report (2020); China Insights Consultancy

### Value Chain of Medical Imaging Film Products Market

The value chain of medical imaging film products market includes raw materials suppliers and third parties' suppliers, midstream production and sales link, and downstream hospitals and other end-use scenarios. The upstream suppliers supply raw material and equipment. The midstream manufacturers are responsible for further processing such as semi-finished goods, labelling and packaging. Medical imaging film products will be delivered to the downstream players by direct selling or distribution, or through deliverers. The terminal customers are inclined to choose those suppliers who can provide high-quality products and have a long-standing industry reputation.

The following diagram illustrates the value chain of the medical imaging film products industry:



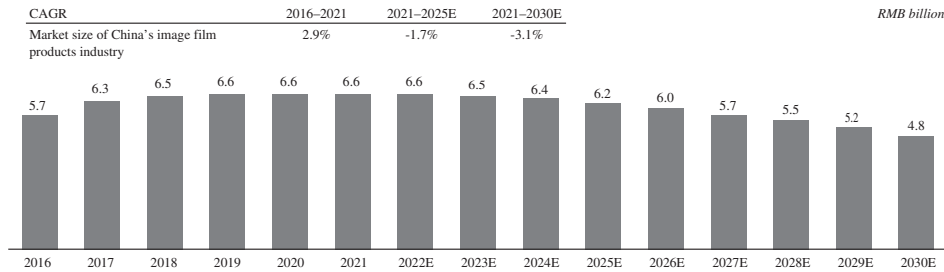
Source: China Insights Consultancy

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### Market Size of China's Medical Imaging Film Products Market

Medical imaging film products are essential for medical image diagnosis. The market size of that in China increased from approximately RMB5.7 billion in 2016 to approximately RMB6.6 billion in 2021 at a CAGR of 2.9%. Considering that medical imaging film products is a relatively mature market and the trend of using digital medical imaging films which needs to be supported by medical imaging cloud services, this market is expected to be around RMB4.8 billion in 2030.

#### Market size of medical imaging film products industry in China, 2016–2030E

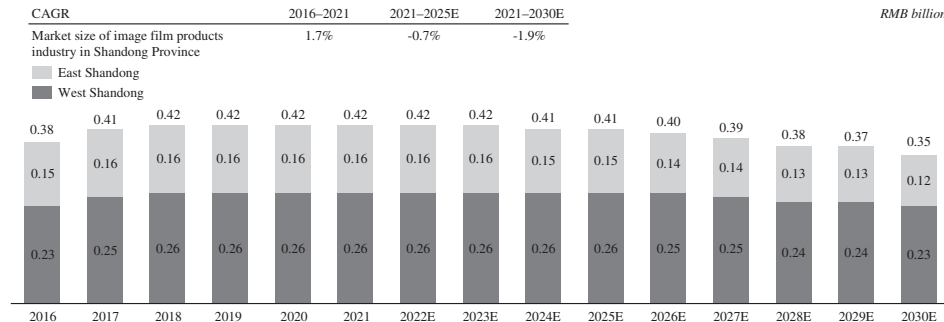


Source: China Insights Consultancy

In 2021, Shandong Province ranks the second, the second and the fifth in terms of resident population, healthcare institutions coverage, and number of outpatient visits, respectively, amongst all provinces, municipalities and autonomous regions in the PRC.

The market size of medical imaging film products in Shandong Province increased from approximately RMB0.38 billion in 2016 to approximately RMB0.42 billion in 2021 with a stable increasing rate and it is expected to be around RMB0.35 billion in 2030.

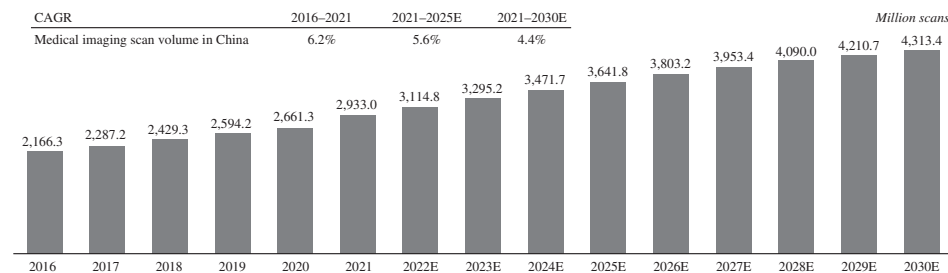
#### Market size of medical imaging film products industry in Shandong Province, 2016–2030E



Source: China Insights Consultancy

The decrease in growth of medical imaging film products market is mainly due to the growth of digital medical imaging films, which forms part of the medical imaging cloud services market. However, the underlying medical imaging exams performed each year is stably increasing. The medical imaging scan volume in China and in Shandong province grew from 2,166.3 million and 155.8 million in 2016 to 2,933.0 million and 211.1 million in 2021 and is expected to grow to 4,313.4 million and 314.2 million in 2030, respectively.

#### Medical imaging scan volume, China, 2016–2030E



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The increase in scan volume will inevitably generate more demand on either medical imaging film products and medical imaging cloud services. The medical imaging film products market and medical imaging cloud services market together form a holistic historic picture of the growing trend in medical imaging examinations in China and in Shandong Province.

The healthcare systems in developed countries started the shift from traditional medical imaging films to digital films for over two decades, and digitisation in medical imaging has since gradually become a global trend. Presently, medical imaging results along with other patient information are usually stored in medical institutions database and could be accessed online by physicians and patients through patient portal, where the patients can still request hard copies of their medical imaging examination results for purposes such as transferring between medical institutions. The shift to digital films mainly is to facilitate digital storage, access, and transmission of medical imaging data for purposes such as remote consultation and diagnosis. As a result, traditional medical imaging films is subject to a decrease in demand due to digitisation in developed countries.

However, the demand for traditional medical imaging films in China will not be phased out completely as due to, amongst others, the following major reasons:

- (1) Comparing to developed countries, China has significantly higher patient population, which generates larger amount of medical imaging data that would cost more for digital storage. For comparison, as of 2020, China had over 1.4 billion citizens and the per capita health expenditure in China is approximately USD740, whereas the respective population and per capita healthcare expenditure were approximately 331.5 million citizens and approximately USD12,530 in the U.S., 67.1 million citizens and approximately USD4,930 in the U.K., and 25.7 million citizens and approximately USD5,951 in Australia. It would be difficult to achieve the level of digitization for medical imaging data comparable to developed countries in China given (i) the massive and continuously growing amount of medical imaging data that would require cloud storage for at least 15 years, according to the "Detailed Rules for the Implementation of the Regulations on the Administration of Medical Institutions" in China, and (ii) the significantly lower per capita healthcare expenditure to support such transformation.
- (2) Many Grade I hospitals and unranked hospitals in China require an up-to-date healthcare infrastructure, in order to support the shift to medical imaging cloud films, as compared to the hospitals in developed countries such as the U.S., U.K. and Australia, which have already possessed those healthcare infrastructure to support the use of medical imaging cloud films. As the upgrade of the existing healthcare infrastructure is capital-intensive and time-consuming, it may be difficult for the lower grade hospitals and community health centres in China to keep up with such a trend for at least a decade. As of the Latest Practicable Date, there are more than 22,000 Grade I and unranked hospitals in China, accounting for approximately 61.4% of the total number of hospitals in China.

Moreover, the implementation of hierarchical medical system in China results in frequent patient transfers between low-tier hospitals and high-tier hospitals. Currently, only some of the hospitals in China with diagnostic imaging centres have employed medical imaging cloud systems, resulting in difficulties in digital imaging data transfers between hospitals with no established medical imaging cloud systems. As a result, traditional medical imaging films remains as the mainstream medical image carrier to provide patients with past medical imaging examination results when patients are being transferred to a high-tier/low-tier hospitals in China.

- (3) While the U.S. is the largest developed country in terms of population in the world, the healthcare system in the U.S. and in China have vastly different structures. According to the annual survey conducted by the American Hospital Association on the number and types of hospitals in the U.S. in 2020, only approximately 19.0% of all hospitals in the U.S. are federal or state and local government hospitals. Since the non-government hospitals are owned and operated by private investors, it will be more competitive than those federal or state and local government hospitals in order to be financially self-sustaining and stand out from its competitors. In turn, it will stimulate the growth and development of the healthcare industry in the U.S., including driving the development of medical imaging cloud systems and the shift from traditional medical imaging films to digital films. On the other hand, public hospital is the mainstream in China, which accounted for approximately 84.3% of the total patients' visits of all hospitals in China in 2021. Since they are non-profit making in nature, they may be less inclined to change, including being open to the shift from traditional medical imaging films to medical imaging cloud films.

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- (4) In China, traditional medical imaging films are either covered under health insurance in some provinces or paid by patients out-of-pocket. However, there is no clear guidance as to whether the provincial health authorities, hospitals, or the national insurance will pay for the initial installation of cloud imaging film systems, and whether patients or insurance will pay for medical imaging cloud film services on a per examination basis. The lack of defined payers leads to reluctance in the promotion of using medical imaging cloud films in hospitals.
- (5) Traditional medical imaging films has been used in the medical system of China for decades and is widely recognised by physicians and clinicians. Most physicians and clinicians have a long-standing habit of reading medical imaging in its physical form when making diagnosis.

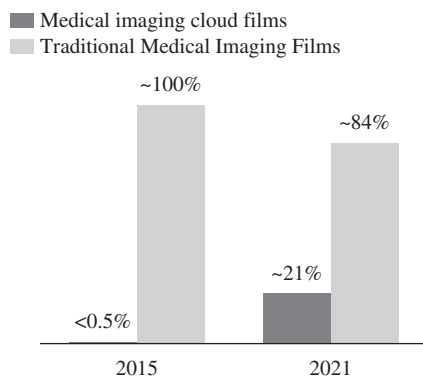
The concept of medical imaging cloud films has emerged in China since around 2015. Comparing to the U.S., the U.K. and Australia markets, the medical imaging cloud films market in China is still in its infancy. Its relevant policies and regulatory guidelines in relation to medical imaging cloud films is still at an immature stage and less sophisticated than those in these developed countries.

In 2021, the National Health Commission published “Notice on Accelerating the Mutual Recognition of the Examination Results” (the “**Notice**”), which calls for the construction of the national and regional health information platform, through the establishment of medical institutions examination database including “cloud film” and other forms, in order to promote the sharing of examination data, to achieve the interconnection and mutual recognition of examination data between medical institutions in the same region. Despite of the presence of such a promotion of the use of medical imaging cloud services from the national government, as at the Latest Practicable Date, most provinces in China have not yet implemented any detailed policies and regulations on such a Notice, for example, most provinces in China do not have an official pricing guideline for the use of medical imaging cloud services, which in turn deters the hospital and healthcare institutions from using medical imaging cloud services, including the use of medical imaging cloud films. As of the Latest Practicable Date, there is no nationwide health platform enabling medical imaging data sharing among all hospitals in China, or province-wide health platform enabling medical imaging data sharing among all hospitals in Shandong province.

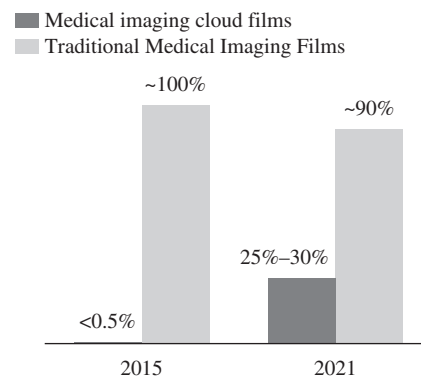
Due to favourable policies for sharing of medical examination data across medical institutions through medical imaging cloud services, and increasing availability of medical imaging cloud services, the penetration rate of medical imaging cloud films in China increased from less than 0.5% in 2015 to approximately 21% in 2021. The penetration rate of traditional medical imaging films in China decreased from approximately 100% in 2015 to around 84% in 2021.

The penetration rate of medical imaging cloud films in Shandong province increased from less than 0.5% in 2015 to between 25% to 30% in 2021. The penetration rate of traditional medical imaging films in Shandong province is approximately 100% in 2015, and decreased to around 90% in 2021.

**Penetration rate of traditional medical imaging films and medical imaging cloud films, China**



**Penetration rate of traditional medical imaging films and medical imaging cloud films, Shandong**



*Notes:*

- (1) The penetration rate of traditional medical imaging films and medical imaging cloud films in China and in Shandong are calculated as the number of hospitals using traditional medical imaging films and medical imaging cloud films in China and Shandong divided by the total numbers of hospitals in China and in Shandong.

The sources of information for (a) hospital numbers are health authority publications including China Health Statistics Yearbook and Shandong Health Statistics Yearbook, and the sources of information for (b) penetration rate by hospital are expert interviews with major industry players.

- (2) The sum of the penetration rate of traditional medical imaging films and the medical imaging cloud films over 100% means that some of the hospitals use both traditional medical imaging films and medical imaging cloud films in parallel.

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As of the Latest Practicable Date, traditional medical imaging films remains to be the mainstream medical imaging carrier for most of the hospitals and healthcare institutions in China.

### OVERVIEW OF CHINA'S MEDICAL IMAGING CLOUD SERVICES MARKET

#### Classification and Definition of Medical Imaging Cloud Services

The medical imaging cloud services is a cloud-based system for storing, sharing, or even processing medical images among medical institutions, academic organisations, and hospitals. The platform allows its users to obtain medical image data in real time, enhance the collaboration among medical institutions, and share medical imaging examination results of the patients. There are four major applications facilitated by the medical imaging cloud services, including digital medical image cloud storage system, digital medical image platform, regional imaging diagnosis platform and PACS system.

#### Value Chain of the Medical Imaging Cloud Services

The value chain of the medical imaging cloud services market consists of upstream providers including software provider and cloud storage provider, and midstream distributors that offer packaged cloud solutions of these two upstream provider services. Depending on the specific needs of each hospital, cloud solutions include medical image data archiving, image access and post-processing, and cloud PACS for each medical institution to consolidate and manage medical image files and business information.

#### Value chain of medical imaging cloud services industry



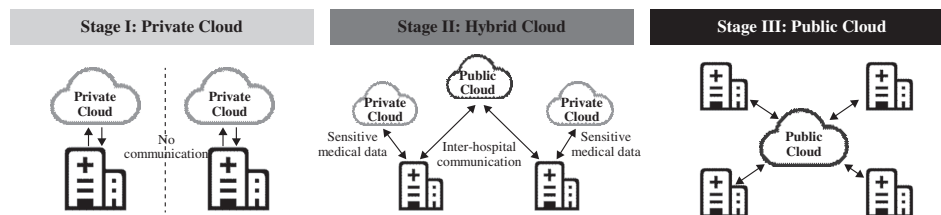
Source: China Insights Consultancy

Note: Hospitals may directly contract with software provider and cloud storage provider, and may also self-build software as well as data centres for cloud storage.

#### Models of Medical Imaging Cloud Services

There are three models of medical imaging cloud services. The preferred model adopted for medical imaging cloud services is expected to undergo an upgrade from private to public cloud computing formats.

#### Models of medical imaging cloud services



Source: China Insights Consultancy

- Stage I: Private Cloud.** Institutes construct their own private cloud. Non-medical core systems, such as medical registration systems, payment systems, and office automation systems, are usually considered to be primary systems for integration into the private cloud. Other systems, such as Hospital Information System, Clinical Information System, and Electronic Medical Record, will also migrate to the private cloud later on.
- Stage II: Hybrid Cloud.** Driven by the quick development of cloud computing, and the demand for medical collaboration as well as telemedicine that offers remote diagnosis and treatment of patients with electronic information and telecommunication technology, more hospitals as well as other medical institutes are gradually shifting to a hybrid cloud model, which consists of both private and public cloud computing platforms, allowing information sharing between hospitals. Our Company currently offers hybrid cloud solutions.
- Stage III: Public Cloud.** With the continuous development of internet medical care, telemedicine, and regional medical care, information barriers among medical service institutes are expected to be gradually removed. The public cloud will become the primary choice for most hospitals and medical institutions in China. As such, the acceptance level and application rate of public cloud will increase significantly in the future. As for the data security, according to “Guidance for security of public cloud platform” (公有雲平臺的安全防護方案), sensitive

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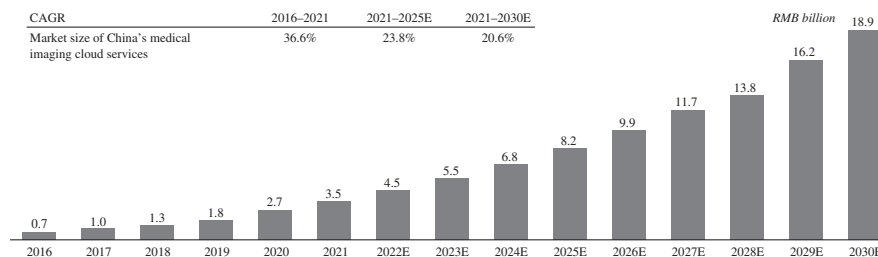
data should be identified by the system, the storage and transmission of users' data are encrypted, and users need to be verified (by passwords or other technical methods) and authorised before using any data.

### Market Size of Medical Imaging Cloud Services Market in China

Because of the rapid popularisation of internet and fast development of information technology, an increasing number of healthcare institutes in China are deploying medical imaging cloud services for improving efficiency and convenient image reading, resulting in the continuous growth of the market size from RMB0.7 billion in 2016 to approximately RMB3.5 billion in 2021 with the CAGR of 36.6%. Driven by the needs of larger storage capacity due to the improvement in imaging devices and significant increase in image volume, cloud platform becomes a more cost-efficient way than traditional local storage. Coupled with the needs of information and data sharing within regions and between institutes, the market size of medical imaging cloud services industry in China is expected to further grow from approximately RMB3.5 billion in 2021 to approximately RMB18.9 billion in 2030 with a CAGR of 20.6%.

The price of medical imaging cloud services varies from the size of hospitals and the amount of data to be possessed or stored. According to the bidding information published online by provincial medical institution procurement platforms, the average price of building a medical imaging cloud services is more than RMB1.2 million with a steady increase rate of 5% to 8% overall. The construction of the medical imaging cloud solutions by cloud solution providers usually requires the lease of servers. However, since the lease term is usually 10 to 15 years, its impact on cost changes is slight.

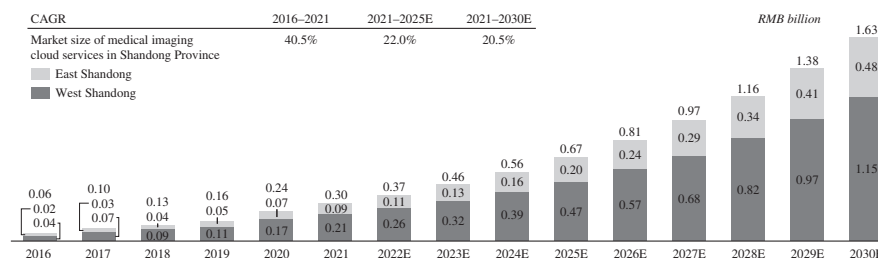
#### Market size of medical imaging cloud services in China, 2016–2030E



Source: China Insights Consultancy

Benefitted from the abundant medical resources, rapid informatisation development and huge demand for medical diagnosis and treatment in Shandong Province, the market size of the medical imaging cloud industry in Shandong Province increased rapidly from less than RMB0.06 billion in 2016 to approximately RMB0.30 billion in 2021 at a CAGR of approximately 40.5%, and it is expected to keep continuous growth and reach approximately RMB1.63 billion in 2030 with a CAGR of approximately 20.5%.

#### Market size of medical imaging cloud services in Shandong Province, 2016–2030E



Source: China Insights Consultancy

The hurdles faced by the hospitals with respect to the shifting of traditional medical imaging films to medical imaging cloud films in China and Shandong, are as follows:

- (1) **Lack of capital for medical imaging cloud system setup:** low grade and unranked hospitals and community health centres may have outdated medical imaging equipment and healthcare information systems, and adopting medical imaging cloud films would require the update of medical imaging hardware, hospital information system on top of the upfront installation cost of medical imaging cloud films software, which in turn creates significant barrier financially for these medical institutions to transition from traditional imaging films to medical imaging cloud films.

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- (2) ***Lack of defined payer for medical imaging cloud films:*** currently, traditional medical imaging films are either covered under health insurance in some provinces or paid by patients out-of-pocket. However, there is no clear guidance as to whether the provincial health authorities, hospitals, or the national insurance will pay for the initial installation of medical imaging cloud films software, and whether patients or insurance will pay for medical imaging cloud film services on a per examination basis. The lack of defined payers leads to reluctance in the use of medical imaging cloud films in hospitals.
- (3) ***Lack of official pricing guideline for medical imaging cloud films:*** public hospitals are required to follow pricing guidelines to charge the fees from patients, and most provinces in China have not included medical imaging cloud films in pricing guidelines, which creates difficulties for public hospitals to charge patients for medical imaging cloud film services.
- (4) ***Traditional medical imaging films satisfies the needs for hospital transfer in China's hierarchical medical system:*** The implementation of hierarchical medical system in China results in frequent patient transfer between low-tier hospitals and high-tier hospitals. Currently, only some of the hospitals in China with diagnostic imaging centres have employed medical imaging cloud systems, resulting in difficulties in digital imaging data transfers between hospitals with no established medical imaging cloud systems. Due to data security concerns including patient data leakage and malware infection through portable storage devices, hospitals in China do not often utilise portable storage devices such as USB and CD for storing and transferring medical imaging data. Traditional medical imaging films could provide patients with past medical imaging examination results while transferring to other hospitals.
- (5) ***Traditional medical imaging films provide crucial evidence in the events of medical disputes:*** as compared to medical imaging cloud films, traditional medical imaging films are more difficult to modify and serve as crucial as evidence in cases of medical disputes.
- (6) ***Users' habits:*** traditional medical imaging film has been used in the medical system for decades and is widely recognised by physicians and clinicians. Most physicians and clinicians have a long-standing habit of reading medical imaging in its physical form when making diagnosis. In addition, due to the unfamiliarity with online health applications among elderly patients, and the long-standing habit of obtaining traditional medical imaging films after medical imaging examination, traditional medical imaging films will still be preferred by the elderly patient population.

### Market drivers and Future Trends

#### ***Market Drivers and Future Trends of the China's Medical Imaging Film Products Market***

The primary market drivers and trends for the medical imaging film products market in China include:

- ***Expanding construction of a regional diagnosis and treatment system.*** The regional diagnosis and treatment system is an efficient mechanism for sharing medical resources through the rational allocation of medical resources at different levels of medical institutions and with mutual cooperation for sharing medical resources at different levels. According to the "Hospital Grading Management Standards", the hospitals in China are classified into Grade I, II, and III. Grade III hospitals are the largest and best regional hospitals in China that typically have more than 500 hospital beds. As comprehensive hospitals, Grade III hospitals provide high-quality professional healthcare services covering a wide geographic area and undertake higher academic and scientific research initiatives. The Grade III hospitals are graded into three sub-levels (A, B and C) based on the assessment of competent authorities and Grade IIIA hospitals are the highest ranking hospitals among Grade III hospitals. Grade II hospitals are the regional hospitals that typically having 100 to 499 hospital beds. As comprehensive hospitals, Grade II hospitals provide multiple communities with integrated healthcare services and undertake certain academic and scientific research missions. The Grade II hospitals are graded into three sub-levels (A, B and C) based on the assessment of competent authorities and Grade IIA hospitals are the highest ranking hospitals among Grade II hospitals. Grade I hospitals, typically having 20 to 99 hospital beds, are primary hospitals that provide preventive, medical, health care, and rehabilitation services directly to a certain population of the community. The Grade I hospitals are graded into three sublevels (A, B and C) based on the assessment of competent authorities and Grade IA hospitals are the highest ranking hospitals among Grade I hospitals. In 2021, Grade III hospitals, Grade II hospitals and Grade I and non-graded hospitals handled approximately 57.5%, 32.2% and 10.3% of the total number of patients visits in China, respectively, accounting for 2.20 billion patients visits, 1.30 billion patients visits and 0.40 billion patients visits, respectively. The system improves the capacity of medical imaging



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services at lower level medical institutions, allows better patient access to medical imaging examinations, and encourages remote diagnosis through regional medical diagnosis and treatment system.

- *Government's supporting for third-party medical imaging and diagnostic centres.* In August 2016, the National Health Commission released its Basic Standards of Medical Imaging and Diagnostic Centres, which sets out several specific requirements for developing medical imaging and diagnostic centres. The medical imaging film products market is expected to see a growth opportunity due to the increase in number of medical imaging and diagnostic centres in order to solve the unmet diagnostic needs of developing areas.
- *High industry concentration.* Hospital procurement teams are inclined to repurchase medical imaging film products from previous providers, which means that existing companies have a higher possibility to secure orders in the future.
- *Self-service substitution trend.* Self-service film output printers can save labour costs because it eliminates the need for specific physicians responsible for printing and distributing imaging results and improves patient satisfaction due to reductions in distribution errors and shorter waiting times.
- *Import substitution.* With the government's issuance of its "Made in China 2025" and "Outline for Healthy China 2030", substitution of imported medical devices by local medical devices has become an inevitable trend. The market for domestic medical imaging film products is expected to benefit from this policy support, with an increased share of medical device purchases shifting from multinational companies to domestic companies.

### **Market Drivers and Future Trends of China's Medical Imaging Cloud Services Market**

The primary market drivers and trends for the medical imaging cloud services market in China include:

- *Favourable government policy.* "The plan of construction of demonstration province for "Internet + healthcare"(2019–2020)" (山東省推進“互聯網+醫療健康”示範省建設行動計劃(2019–2020年)) encourages the implementation of digital imaging "cloud film" service of medical institutions based on the provincial health information platform, as it is a crucial step to realise medical imaging data sharing between hospitals. In addition, during the 2021 National Medical Management Conference, the NMPA also listed the construction of smart hospitals, including the integration of information systems and development of Internet- and tele-medicine as the main path for primary care patients to access high-quality medical resources.
- *Requirement for precise diagnosis.* For doctors reading images online, cloud platforms can provide additional functions including zooming, marking and AI-aided comparison between similar images, enabling doctors to precisely detect and locate abnormalities and reduce the risk of misdiagnosis.
- *Demand for automation in hospitals.* Cloud platforms can help realise high-level automation in hospitals by simplifying procedures, including outputting, printing, programming and distributing medical image archives. Since medical images are automatically uploaded to the cloud server, doctors can always browse the archives and data online on mobile devices or workstations. They no longer need to extract and print the images from imaging devices themselves. Likewise, cloud platforms also provide automatic archiving storage and backup services, which reduces the maintenance cost of the storage system for hospitals.
- *Demand for remote consultation.* The demand for online medical consultation and diagnosis has increased continuously in recent years, indicating an expanding base of patients in need of the services provided by imaging cloud platforms. In order to conduct remote diagnosis, patients need to share their medical images to experts through the cloud platform, with experts then conducting AI-aided diagnosis based on those images and providing digital reports or prescriptions to patients. Digital images and cloud servers are the basic technologies needed for the AI-aided recognition of lesion locations and online consultation.
- *Increasing demand for inter-hospital information sharing and communication.* The development level of healthcare services varies widely across different regions within China, which leads to an imbalance in the allocation of medical resources among people living in urban and rural areas. With medical imaging cloud services, medical scans imaging can be completed in Grade I hospitals while the results can then be sent to Grade II and III hospitals for remote diagnosis, which means that patients in less-developed areas can also be readily diagnosed by experts within a shorter period of time. In addition, the patient triage function

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built into cloud platforms will prioritise allocating patients with acute diseases to top-tier hospitals and redirect patients with less serious diseases to lower-tier healthcare institutions. Thus, the allocation of medical resources will be improved with the use of cloud platform. When a patient is transferred to another hospital during the course of treatment, doctors can directly perform a diagnosis if the patient's information is shared between hospitals via the medical imaging cloud services, which therefore simplifying the treatment procedures including medical scans and improving the efficiency of hospitals.

- *Advancements in medical imaging technology.* Along with advancements in imaging technology, the volume of images is also projected to undergo further expansion in the future, implying higher requirements for data storage. Since medical data must be kept for at least 15 years, hospitals are not allowed to delete their data and therefore the need for storage capacity will be a hard requirement for hospitals/medical institutions. In contrast with the limited capacity of offline-based local storage, cloud platforms are more readily expandable, allowing medical data and images to be saved permanently, which in turn enhances the security of hospitals/medical institutions against unforeseen accidents and providing a backup of data archives.

### Entry Barriers

#### *Entry Barriers of China's Medical Imaging Film Products Market*

- *Brand Stickiness.* The first-mover advantage gives existing companies superiority in terms of their customer base and customer stickiness. Hospital procurement departments have the tendency to continue purchasing contracts with existing providers unless any significant adverse events occur.
- *Sales channel establishment.* Medical imaging film products market usually requires a strong marketing network, and good relationship between manufacturers, distributors and hospitals. Once this relationship is established, it is usually relatively stable. Therefore, this will create obvious industry barriers for new manufacturers and distributors.

#### *Entry Barriers of China's Medical Imaging Cloud Services Market*

- *Technological barrier.* The construction of a medical imaging cloud services relies heavily on technology, with high standards in terms of both the depth and breadth of related technical knowledge. Incumbents always have to face the challenge posed by competitors and potential new entrants, and thus need to continually update and improve existing techniques, as well as retaining patents and operational excellence. New entrants require talented personnel for the development of their platform, the design and operation of cloud computing services, and the customisation of databases as well as cybersecurity. At present, skilled technicians mainly integrate into the large incumbents in the industry, which means that it is difficult for new entrants to directly hire these talents in the labour market. In addition, it requires years for a new team of technicians to accumulate experience in operations and innovative knowledge.
- *Customer stickiness.* According to the China Hospital Information Management Association, 80% of hospitals in China prefer local suppliers, while price is relatively less important than factors such as reputation and supplier size. First movers which have built their own brands, are broadly recognised by local hospitals and healthcare institutions in terms of their knowledge of medical needs and qualified infrastructure. Stable long-term relationship between incumbents and healthcare institutions forms natural barriers for new entrants to enter the market, and further increases the difficulty of accumulating data and operational experience.
- *Political and regulatory barrier.* Data and archive storage forms one of the basic functions of medical imaging cloud services. For companies operating regional cloud platforms, data security and information privacy are always the most critical factors that governments will consider when deciding whether a company is qualified for providing data centre services. In contrast with new entrants, local incumbents with more successful cases and mature data security systems are more likely to meet the regulatory requirements of governments. Likewise, since regional platforms are directly under the inspection of both local and national governments, professional staff with compliance, management and communications experiences with the government is also necessary for companies to operate successfully in the market.

### Threats & challenges

#### *Threats and challenges of China's Medical Imaging Film Products Market*

- *Policy change.* Macro-industrial policies bring uncertainties to the medical imaging film products market. The implementation of the two-invoice or even one-invoice policy for medical devices, which aims to reduce the procurement cost of medical consumables by reducing the layers of distributors, have led to a decrease in profit margin for distributors of medical devices regulated

## INDUSTRY OVERVIEW

under this policy. Please refer to the section headed “Regulatory Overview — Two Invoice System” in this document for more details on the implementation of the “Two Invoice System” in the PRC. The sales models of related companies are constantly changing and optimising in accordance with the political environment. With the implementation of national policies and the continuous expansion of the scope of centralised procurement, it will bring more potential challenges to the industry.

- *Shortage of the core technology.* The overseas manufacturers have taken up the majority of market share in this industry and domestic companies lack core technologies like the production of medical dry laser film to compete with the overseas manufacturers. The barriers of technology will restrict the further development of the industry and bring more potential challenges.

### **Threats and challenges of China’s Medical Imaging Cloud Services Market**

- *Large number of competitors.* As of the end of 2021, the medical imaging cloud services industry in China is relatively disperse and there exists no key players with a market share which is larger than 10%. Currently, only few hospitals in China have realised the importance of imaging cloud platform, and most hospitals only have low requirements when deploying new PACS system (for example, only storage requirement), which makes it difficult for suppliers to differentiate from each others in bidding, resulting in low technical entry barrier and large number of small-size competitors. With more promotion and development of informatisation in hospitals, more specific and complicated requirements (for example image processing functions and reinforced data security) will be expected on the cloud platform, which will contribute to higher entry barrier and eliminate unqualified companies.
- *Strong regional customer stickiness.* Due to high downtime costs, local suppliers can solve various technical problems quickly. Hospitals have established strong regional customer stickiness, which forms the entry barrier for suppliers from other provinces, resulting in large number of regional players and difficulties for incumbents to expand to other markets.

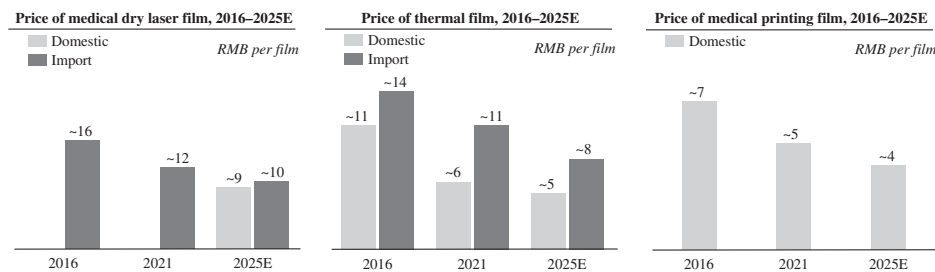
## **COST ANALYSIS**

### **Cost of Medical Imaging Films**

The cost of medical imaging films is the main cost in the medical imaging film products market. The cost of medical imaging films is steadily declining due to technological advancement, increasing number of domestic suppliers, centralised procurement policy, and the increasing availability of cloud film substitutes.

The cost of medical imaging films has minimal impact on the end selling price. The price floor of end selling price of medical imaging film products from distributors is limited by medical imaging film products manufacturers. For public medical institutions, volume procurement process limits the ceiling price for medical imaging films and other types of medical consumables, and the eventual transaction price is based on the bidding outcome of market participants.

Below are the average Tier-1 distributor sales prices of medical dry laser film, thermal film and medical printing film.



Source: China Insights Consultancy

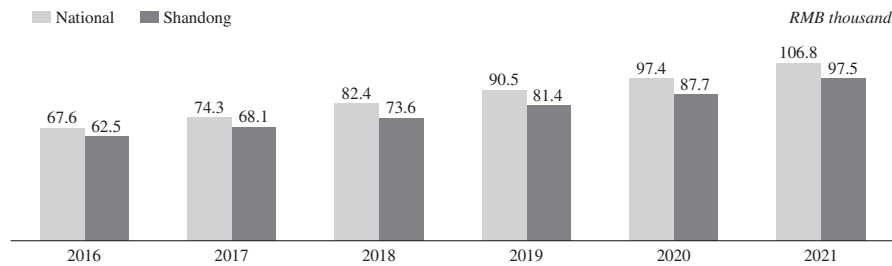
Note: Domestic OEM laser film products have only become available in recent years. The import prices are generally higher than domestic OEM medical imaging film products due to higher transportation and storage cost, as well as its brand reputation.

### **Labour Cost**

The labour cost is a significant cost in the medical imaging cloud services market. The overall labour cost is showing a slow upward trend, while the labour cost in Shandong Province is lower than the national average.

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### Average annual salary of Urban employees, national and Shandong, 2016–2021

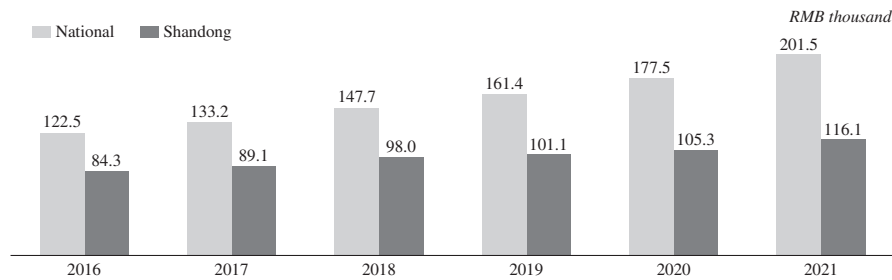


Source: National Bureau of Statistics

Note: the average annual salary calculated by the National Bureau of Statistics is based on government-owned enterprises.

The average annual salary of urban employees in the information transmission, computer service and software industry is higher than that of urban employees overall. Since Shandong Province is a province with a large population and resources, labour costs are lower than the national average.

### Average annual salary of Information transmission, computer service and software industry, national and Shandong, 2016–2021



Source: National Bureau of Statistics

Note: the average annual salary calculated by the National Bureau of Statistics is based on government-owned enterprises.

## COMPETITIVE LANDSCAPE

### Competitive Landscape of the Medical Imaging Film Products Market in China and Shandong Province

China's medical image film products market is a highly concentrated market. The top five manufacturers account for more than 60% of the market share. The technical barriers of medical dry laser films are relatively high. At present, only a few overseas manufacturers possess the know-how of manufacture of medical dry laser film, which results in market concentration. In the field of thermal film and medical printing film, local companies have possessed the independent production capabilities, and they can develop rapidly by virtue of their price advantages.

#### Top 5 manufacturers in medical imaging film products market, China, 2021

Rank	Company	Location	Listing Status	Description	Approximate Revenues <i>RMB billion</i>	Approximate Market share <i>%</i>
1	Medical Imaging Products Manufacturer	USA	Listed	It provides medical imaging systems and IT solutions worldwide, as well as advanced materials for the precision film and electronics markets. It has branches in more than 170 countries around the world, and has always been a leader in various technologies in medical imaging and medical IT.	1.9	28.0%
2	Fujifilm Holdings Corporation	Japan	Listed	Its business areas include imaging vision, medical health, high-performance materials, and printing industry, mainly providing products and related services such as photographic equipment, medical systems, and life science systems.	0.9	14.0%
3	Agfa-Gevaert N.V.	Belgium	Listed	Its businesses are divided into three business segments: imaging, medical and special products. It mainly develops, produces and sells various digital imaging systems and IT solutions, which are mainly used in the printing industry and the healthcare industry.	0.7	10.4%
4	Konica Minolta, Inc.	Japan	Listed	Its business involves office business, professional print business, healthcare business and industrial business. It is the world's leading medical image printing integrated service provider and solution provider.	0.5	7.6%
5	J	China	Unlisted	It is a leading domestic medical imaging film products manufacturer in China with focus on the R&D of medical dry laser film.	0.3	4.8%

Note: The top five manufacturers in aggregate accounted for approximately 64.8% of the market share in China in 2021.

Source: China Insights Consultancy

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### Top 2 manufacturers in medical imaging film products market, Shandong Province, 2021

Rank	Company	Location	Listing Status	Description	Approximate Revenues	Approximate Market share
					<i>RMB billion</i>	<i>%</i>
1	Medical Imaging Products Manufacturer	USA	Listed	It provides medical imaging systems and IT solutions worldwide, as well as advanced materials for the precision film and electronics markets. It has branches in more than 170 countries around the world, and has always been a leader in various technologies in medical imaging and medical IT.	0.23	55%
2	Fujifilm Holdings Corporation	Japan	Listed	Its business areas include imaging vision, medical health, high-performance materials, and printing industry, mainly providing products and related services such as photographic equipment, medical systems, and life science systems.	0.13	30%

*Note:* The top two manufacturers in aggregate accounted for approximately 85% of the market share in Shandong province in 2021.

*Source:* China Insights Consultancy

Shandong Province is one of the largest medical imaging film products markets in China, therefore, all major manufacturers consider Shandong Province as a key region for development. The competitive landscape in Shandong province is the same as the one in China. The concentration of leading companies in Shandong Province is also obvious. The top two manufacturers accounted for more than 80% of the market share.

Our Group engages in the distribution of medical imaging film products from third-party brands and the sale of our self-branded medical imaging film products. For the distribution business, our Group is the biggest Tier-2 distributor of Medical Imaging Products Manufacturer in Shandong Province in terms of sales volume in 2021. As at the Latest Practicable Date, Honghe Group is the only Tier-1 distributor of Medical Imaging Products Manufacturer in Shandong Province. It is an industry norm for the distribution companies like our Group to rely heavily on a few suppliers due to the dominance by a few players in the medical imaging film products market in the PRC.

### Competitive landscape of medical imaging cloud services market in China and Shandong Province

China's medical imaging cloud services is scattered and the top 5 companies in medical imaging cloud services market account for approximately 13.6% market share. The reasons are as follows:

- The medical imaging informatisation is still in its infancy at all levels hospitals in China. Therefore, there is a lot of unmet market demand.
- The primary consideration for most hospitals at all levels to choose informatisation construction is localised and personalised services due to the concern over timely response for any technical assistance. Therefore, many regional manufacturers have entered this market driven by lucrative profit.
- Due to the limited application space, the industry has not formed obvious technical barriers, such as storage space, transmission speed, etc.

With the improvement of medical imaging cloud services, the area involved is wider and the problems dealt with are more complex. Companies with regional influence and national layout will have a competitive advantage.

### Top 5 companies in medical imaging cloud services market, China, 2021

Rank	Company	Location	Listing Status	Description	Approximate Revenues	Approximate Market share
					<i>RMB million</i>	<i>%</i>
1	A	Shanghai	Unlisted	A leading and one of the earliest integrated service providers focusing on medical imaging and information solutions in China.	124.3	3.4%
2	Winning Health Technology Group	Shanghai	Listed	A domestic high-tech enterprise focusing on overall digital solutions and services in the medical, health and sanitation fields. It has more than 20 branches and R&D bases across the country, serving more than 6000 users in medical and health institutions.	113.9	3.1%
3	B-SOFT Co., Ltd.	Zhejiang	Listed	Its business is focused on the information technology construction in the healthcare industry and can be divided into healthcare information technology application software and information technology-based system integration business.	103.5	2.8%
4	Neusoft Corporation	Shenyang	Listed	A comprehensive solution provider for clinical diagnosis and treatment based on imaging equipment. It has four business lines: digital medical diagnosis and treatment equipment, in vitro diagnostic equipment and reagents, MDaas and equipment services.	78.7	2.2%
5	E	Beijing	Unlisted	A provider of software products, system integration and operation services for digital hospital construction, regional health informatisation construction, and overall solutions for mobile medical services based on digital hospital and regional health informatisation.	77.7	2.1%
	Our Group	Shandong	Unlisted	Our Group is a medical imaging solutions provider and principally engages in providing medical imaging film products and medical imaging cloud services in Shandong.	14.2	0.4%

*Source:* China Insights Consultancy

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The competition of medical imaging cloud services in Shandong Province is relatively concentrated as compared to the medical imaging cloud services market in China. The top 3 companies in Shandong Province's medical imaging cloud services market accounted for approximately 16.4% market share in terms of sales revenue in 2021. Hence, the market in Shandong Province is fragmented. Our Group is the early mover to tap into the medical imaging cloud services market. Relying on its technology accumulation over years of operation and channel advantages, it ranks the third in the field of medical imaging cloud services market in Shandong Province with a market share of approximately 4.7% in term of sales revenue in 2021.

### Top 3 companies in medical imaging cloud services market, Shandong Province, 2021

Rank	Company	Location	Listing Status	Description	Approximate Revenues <i>RMB million</i>	Approximate Market share <i>%</i>
1	K	Beijing	Unlisted	A provider of cloud computing services to hospitals for the whole process of imaging examination business, including assisting information sharing between hospitals, doctors and patients to achieve interoperability of various diagnostic resources.	20.7	6.8%
2	A	Shanghai	Unlisted	A leading and one of the earliest integrated service providers focusing on medical imaging and information solutions in China.	15.0	4.9%
3	Our Group	Shandong	Unlisted	Our Group is a medical imaging solutions provider and principally engages in providing medical imaging film products and medical imaging cloud services in Shandong.	14.2	4.7%

*Source: China Insights Consultancy*

### COMPETITIVE ADVANTAGE ANALYSIS OF THE GROUP

The competitive advantages of the Group include:

- *Comprehensive medical imaging solutions provider.* Our Group is the only provider in Shandong Province which provides medical imaging film products together with medical imaging cloud services. We have built a complete service chain by providing both film products and cloud services.
- *Regional leader.* Our Group has established stable business relationship with more than 90 hospitals. Given (i) its large customer base; (ii) our Group is the largest Tier-2 distributor of the Medical Imaging Products Manufacturer, in terms of sales volume in Shandong Province in 2021; and (iii) that our Group has its own “冠澤慧醫” (Guanze Huiyi) brand, our Group is a regional leader in the medical imaging film products and cloud services market.
- *Reliable customer relationships and stable relationships with suppliers.* Our Group has established a stable business relationship with our major customers and suppliers, gaining prominent reputation among customers and suppliers in Shandong Province.