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## INDUSTRY OVERVIEW

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*Certain information and statistics set out in this section and elsewhere in this document are derived from various government and other publicly available sources, and from the market research report prepared by Frost & Sullivan, an independent market research consulting firm that was commissioned by our Company. The information extracted from the Frost & Sullivan Report should not be considered a basis for investments in the Offer Shares or an opinion of Frost & Sullivan with respect to the value of any securities or the advisability of investing in our Company. We believe that the sources of such information and statistics are appropriate for such information and statistics and have taken reasonable care in extracting and reproducing such information and statistics. We have no reason to believe that such information and statistics are false or misleading or that any fact has been omitted that would render such information and statistics false or misleading in any material respect. No independent verification has been carried out on such information and statistics by our Company or any other parties involved in the Global Offering (excluding Frost & Sullivan) or their respective directors, officers, employees, advisers, or agents, and no representation is given as to the accuracy or completeness of such information and statistics. Accordingly, you should not place undue reliance on such information and statistics. For discussions of risks relating to our industries, see “Risk factors—Risks relating to our business and our industry.”*

### SOURCE OF INFORMATION

We commissioned Frost & Sullivan, an independent market research consulting firm which is engaged in the provision of market research consultancy services, to conduct a detailed analysis of China’s higher education market, China’s private higher education market, China’s software and IT service industry, China’s private higher IT education market, China’s continuing education market, China’s IT value-added educational service market and other economic data.

During the preparation of the Frost & Sullivan Report, Frost & Sullivan performed both primary research which involves discussions of industry status with leading industry participants and industry experts, and secondary research which involves review of company reports, independent research reports and data from Frost & Sullivan’s own research database.

The Frost & Sullivan Report was compiled based on the following assumptions: (i) China’s economy is likely to maintain steady growth in the next decade; (ii) China’s social, economic, and political environment is likely to remain stable in the forecast period from 2019 to 2023; (iii) market drivers, such as attention on children’s education by Chinese households, support from the PRC central and local governments, improved investment on private education of the Chinese society, and the increase of household income and personal wealth, are likely to drive the growth of the Chinese private higher education market over the forecast period from 2019 to 2023, and (iv) the targets of expanding enrolment of higher education set by the PRC government are expected to be achieved over the forecast period from 2019 to 2023. With respect to the projection of total market size, Frost & Sullivan plotted available historical data analysis against macroeconomic data and related industry drivers.

Frost & Sullivan is an independent global consulting firm, which was founded in New York, U.S.A. in 1961. It conducts industry research and provides market strategies, growth consulting, and corporate training

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services. We have agreed to pay a fee of up to RMB1,830,000 to Frost & Sullivan in connection with the preparation of the Frost & Sullivan Report. The payment of such fee was not conditional on our successful Listing or on the results of the Frost & Sullivan Report. The Frost & Sullivan Report is independent from our influence. Figures and statistics provided in this document and attributed to Frost & Sullivan or the Frost & Sullivan Report have been extracted from the Frost & Sullivan Report and published with the consent of Frost & Sullivan.

Except as otherwise noted, all of the data and forecasts contained in this section are derived from the Frost & Sullivan Report. We also have extracted certain information from the Frost & Sullivan Report in the sections headed “Summary,” “Risk Factors,” “Business,” and “Financial Information” and elsewhere in this document to provide a more comprehensive presentation of the industry in which we operate. Our Directors have further confirmed, after making reasonable inquiries and exercising reasonable care, that there is no adverse change in the market information since the date of publication of the Frost & Sullivan Report or any of the other reports that may qualify, contradict or have an impact on the information in this section.

### CHINA’S HIGHER EDUCATION MARKET

China’s formal higher education can be provided by either junior colleges or universities granting different diplomas/degrees. China’s higher education industry has experienced steady growth from 2014 to 2018. According to the Ministry of Education of the PRC, the total revenue of China’s higher education industry increased from RMB851.0 billion in 2014 to RMB1,201.3 billion in 2018, representing a CAGR of 9.0%. According to Frost & Sullivan, the total revenue of China’s higher education industry is expected to increase from RMB1,201.3 billion in 2018 to RMB2,114.2 billion in 2023, representing a CAGR of 12.0%.

The student enrolments at higher education institutions in China have grown continuously from 2014 to 2018. According to Frost & Sullivan, the number of student enrolments in higher education increased from 27.3 million in 2014 to 31.0 million in 2018, representing a CAGR of 3.2% and is expected to increase from 31.0 million in 2018 to 38.5 million in 2023, representing a CAGR of 4.4%.

The Chinese government has issued a series of policies and regulations to encourage and promote the development of junior college diploma programmes and junior college to bachelor degree transfer programmes. According to the 2019 Government Work Report (2019政府工作報告), student enrolments in higher vocational colleges in China shall increase by one million persons in 2019. On 8 May 2019, the MOE released the Implementation Plan of Special Work of Expanding Enrolment of Higher vocational Education (高職擴招專項工作實施方案), which introduced various measures for the one million extra enrolment of higher vocational education in 2019. According to the speech given by the deputy minister of the MOE at a press conference held by the State Council on 28 February 2020, student admission quota for postgraduate programmes and junior college to bachelor’s degree transfer programmes are expected to be expanded by approximately 189,000 and 320,000 students nationwide, respectively, in 2020. According to the 2020 Government Work Report (2020政府工作報告), student enrolments in higher vocational colleges in China will be further increased by two million persons in 2020 and 2021.

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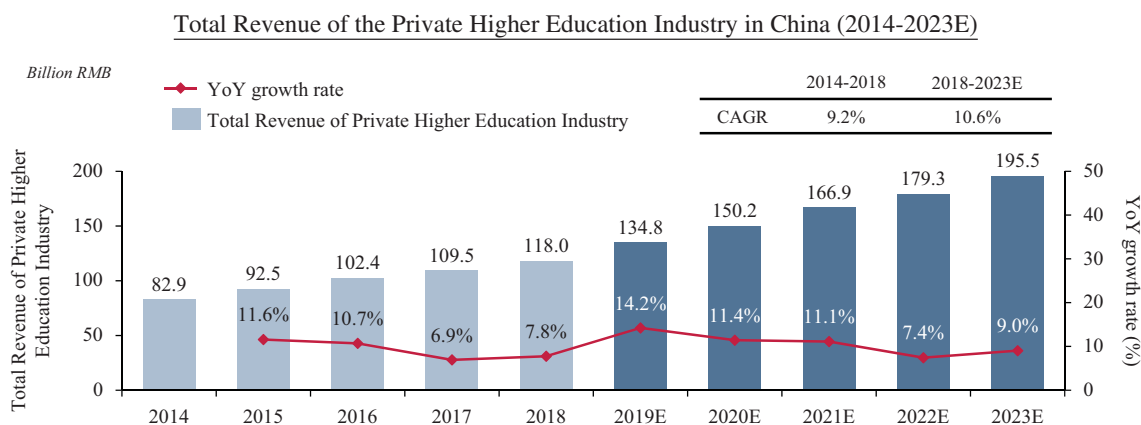
### CHINA'S PRIVATE HIGHER EDUCATION MARKET

The private higher education industry in China has experienced rapid growth since the beginning of the 1990s as the relevant government authorities made great endeavours in developing the regulatory framework for private higher education, according to the Frost & Sullivan Report. Private higher education institutions in China can be divided into three categories, namely, private regular universities (民辦普通本科), private junior colleges (民辦普通專科) and independent colleges (獨立學院). Private regular universities refer to private higher education institutions that offer undergraduate level education programmes, while private junior colleges refer to private higher education institutions that offer junior college diploma education programmes. Independent colleges refer to undergraduate level private higher education institutions that are operated by non-governmental institution(s) or individual(s) in cooperation with a public university or college. Independent colleges differ from private regular universities by the requisite of cooperating with public universities and colleges.

#### Total Revenue of Private Higher Education in China

According to the Frost & Sullivan Report, total revenue of private higher education industry (民辦高等教育經費總收入) has been calculated by aggregating total PRC government public expenditures allocated to schools in the PRC private higher education industry by the central government and local governments, funding provided to private schools by investors, revenues generated from donations to and fundraising by schools, revenues generated by schools from teaching, research and other activities (such as tuition and school-run businesses), and other educational funding or school revenues.

From 2014 to 2018, the total revenue of the private higher education industry increased from RMB82.9 billion to RMB118.0 billion, representing a CAGR of 9.2%. In 2018, the total revenue of private higher education industry in China accounted for 9.8% of the total revenue generated by China's higher education industry, according to Frost & Sullivan. The total revenue of private higher education industry is expected to increase from RMB118.0 billion in 2018 to RMB195.5 billion in 2023, representing a CAGR of 10.6%. The following diagram illustrates the historical and projected total revenue of China's private higher education industry from 2014 to 2023:



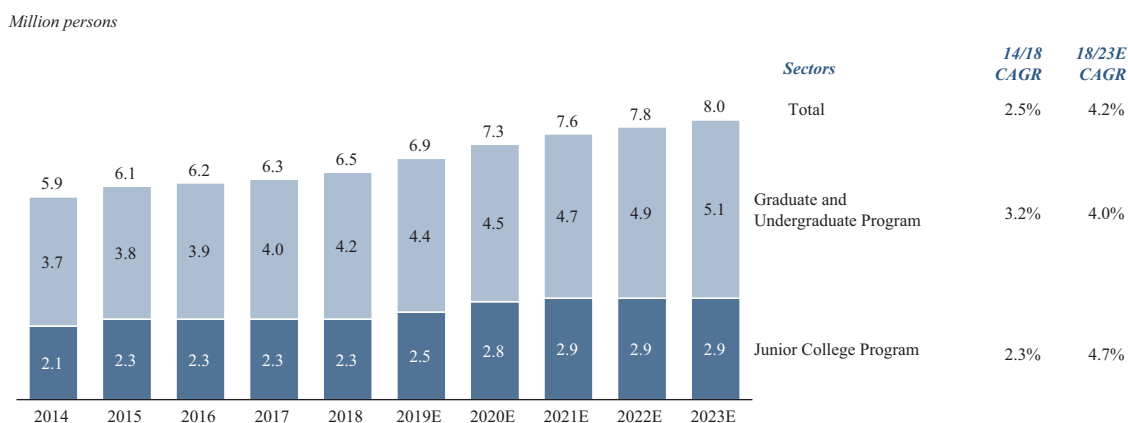
Source: Frost & Sullivan

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### Total Number of Student Enrolments of Private Higher Education in China

The student enrolments at private higher education institutions in China have grown continuously in past years. According to the Frost & Sullivan Report, the number of student enrolments in private higher education in China increased from 5.9 million in 2014 to 6.5 million in 2018 and is expected to increase to 8.0 million in 2023. The following chart shows the historical and projected total number of student enrolments in China's private higher education industry from 2014 to 2023:

Student Enrolments of the Private Higher Education Industry in China (2014-2023E)



*Source: Frost & Sullivan*

*Note:*

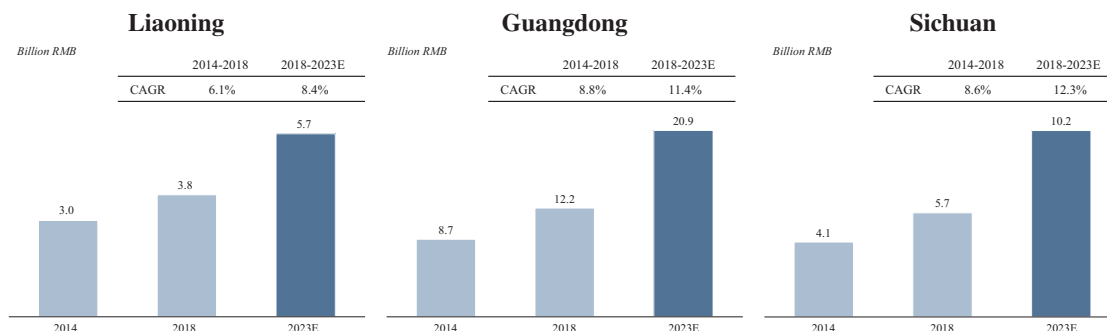
(1) Due to rounding, numbers presented above may not add up precisely to the totals.

### Total Revenue of Private Higher Education in Liaoning, Guangdong and Sichuan Provinces

Along with the fast development of the private higher education industry in China, the private higher education industry in Liaoning, Guangdong and Sichuan provinces also experienced rapid growth from 2014 to 2018, and is expected to continue to grow in the future. According to the Frost & Sullivan Report, the total revenue of the private higher education market in Liaoning province increased from RMB3.0 billion in 2014 to RMB3.8 billion in 2018, representing a CAGR of 6.1% for the same period, and is expected to increase to RMB5.7 billion in 2023, at a CAGR of 8.4% from 2018 to 2023. In Guangdong province, the total revenue of the private higher education market increased from RMB8.7 billion in 2014 to RMB12.2 billion in 2018, representing a CAGR of 8.8%, and is expected to increase to RMB20.9 billion in 2023, at a CAGR of 11.4% from 2018 to 2023. As for Sichuan province, the total revenue of the private higher education market increased from RMB4.1 billion in 2014 to RMB5.7 billion in 2018, representing a CAGR of 8.6% for the same period, and is expected to increase to RMB10.2 billion in 2023, at a CAGR of 12.3% from 2018 to 2023.

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### Total Revenue of Private Higher Education Market in Liaoning, Guangdong and Sichuan Provinces (2014–2023E)



Source: Frost & Sullivan

Note:

(1) Due to rounding, numbers presented above may not add up precisely to the totals.

### Total Number of Student Enrolments of Private Higher Education in Liaoning, Guangdong and Sichuan Provinces

In Liaoning, Guangdong and Sichuan provinces, the total number of student enrolments at private higher education institutions have also experienced consistent growth from 2014 to 2018.

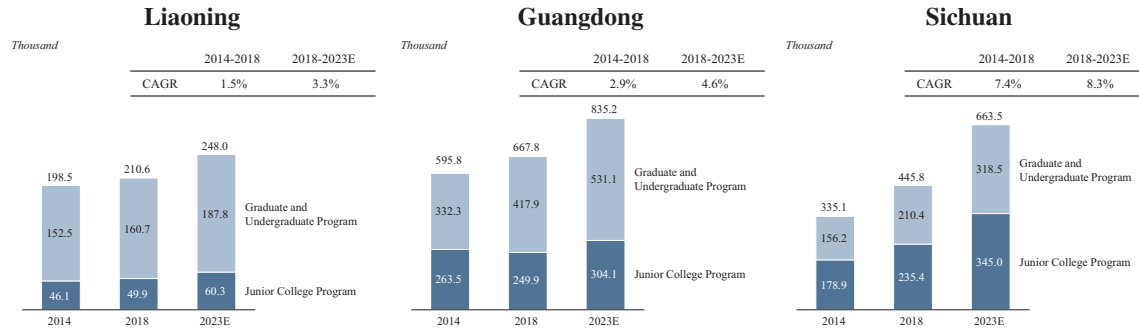
The total number of student enrolments for the private higher education market in Liaoning province increased from approximately 198.5 thousand in 2014 to approximately 210.6 thousand in 2018, representing a CAGR of 1.5%, and is expected to increase to approximately 248.0 thousand in 2023, representing a CAGR of 3.3% from 2018 to 2023.

The total number of student enrolments for the private higher education market in Guangdong province increased from approximately 595.8 thousand in 2014 to approximately 667.8 thousand in 2018, representing a CAGR of 2.9%, and is expected to increase to approximately 835.2 thousand in 2023, representing a CAGR of 4.6% from 2018 to 2023.

The total number of student enrolments for the private higher education market in Sichuan province increased from approximately 335.1 thousand in 2014 to approximately 445.8 thousand in 2018, representing a CAGR of 7.4%, and is expected to increase to approximately 663.5 thousand in 2023, representing a CAGR of 8.3% from 2018 to 2023.

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### Number of Student Enrolments in Private Higher Education in Liaoning, Guangdong and Sichuan Provinces (2014–2023E)



Source: Frost & Sullivan

### Penetration Rate of Private Higher Education in China

According to the Frost & Sullivan Report, the penetration rate of private higher education in China decreased from 21.6% in 2014 to 21.0% in 2018 and is expected to remain at a relatively stable level from 2018 to 2023.

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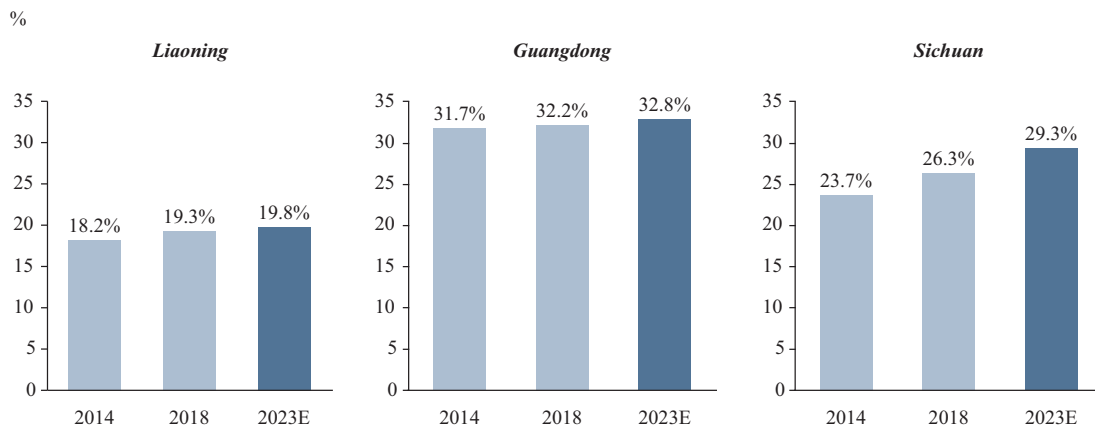
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### Penetration Rate of Private Higher Education in Liaoning, Guangdong and Sichuan Provinces

Compared with the relatively stable penetration rate of private higher education in China, the penetration rate of private higher education in Liaoning province increased from 18.2% in 2014 to 19.3% in 2018, and is expected to increase to 19.8% in 2023. Moreover, in Sichuan province, the penetration rate had experienced a rapid increase from 23.7% in 2014 to 26.3% in 2018, and is expected to increase to 29.3% in 2023. In Guangdong province, with an already high penetration rate of private higher education at 31.7% in 2014, it increased slightly to 32.2% in 2018, and is expected to increase to 32.8% in 2023. The following charts show the historical and projected penetration rate of private higher education in Liaoning, Guangdong and Sichuan provinces from 2014 to 2023:

Penetration Rate of Private Higher Education by Number of Student Enrolments  
in Liaoning, Guangdong and Sichuan Provinces (2014–2023E)



Source: Frost & Sullivan

### Tuition Fee of Private Higher Education in China

The average annual tuition fee of private higher education in China increased from RMB10,983 in 2014 to RMB13,530 in 2018, representing a CAGR of 5.4%. In addition, driven by the increase in costs and improvements of quality of private higher education, the average annual tuition fee of private higher education in China is predicted to increase at a CAGR of 4.8% from 2018 to 2023, reaching RMB17,095 in 2023.

In Liaoning province, the average annual tuition fee of private higher education increased from RMB11,600 in 2014 to RMB13,800 in 2018, representing a CAGR of 4.4%, and is predicted to increase at a CAGR of 6.5% from 2018 to 2023, reaching RMB18,900 in 2023.

In Guangdong province, the average annual tuition fee of private higher education increased from RMB11,200 in 2014 to RMB14,300 in 2018, representing a CAGR of 6.3%, and is predicted to increase at a CAGR of 7.8% from 2018 to 2023, reaching RMB20,800 in 2023.

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In Sichuan province, the average annual tuition fee of private higher education remained stable as it increased at a CAGR of 2.5% from RMB8,700 in 2014 to RMB9,600 in 2018, and is predicted to increase at a CAGR of 5.3% from 2018 to 2023, reaching RMB12,400 in 2023.

### Market Drivers and Trends of Private Higher Education in China

According to Frost & Sullivan, the further development of the private higher education industry in China would be driven primarily by the following factors and trends:

- **Government support:** The Chinese government has issued a series of policies and regulations to encourage and promote the development of private higher education, such as the Notification of Enhancing the Management and Conducting the Development of Non-governmental Colleges and Universities by General Office of the State Council (國務院辦公廳關於加強民辦高校規範管理引導民辦高等教育健康發展的通知) and Non-governmental Education Promotion Law of the PRC (中華人民共和國民辦教育促進法) to promote the sound development of private higher education. These policies and regulations are expected to accelerate the growth of the private higher education industry.
- **Increasing wealth leading to greater demand for higher education and academic qualifications:** With people's increasing income and improved physical living conditions, they are paying more attention to education. Nevertheless, the development of public education resources is likely to uphold at a relatively stable pace, and private higher education is expected to gain ground for development based on the gap between the rapidly increasing demand for higher education and the relatively limited public higher education resources.
- **Growing market demand for technical talent:** With continued strong economic development, the Chinese economy's demand for more technical talent of all areas is growing. The lack of skilled and well-trained first-line operative workers is expected to drive the growing demand for private higher education, which focuses more on professional education.
- **Increasing diversification and improved education quality:** With policy support and private education groups' ever increasing capabilities in resource integration, the education quality of private higher education is continuously improving. Meanwhile, private education that focuses on professional education are expanding their course variety and increasing the level of specialisation for each specific field. Such developments are expected to attract more people to consider private higher education and drive the growth of the market on a long-term basis.
- **Better match of talent cultivation and market demand:** Universities focusing on applied arts and technologies provide more training on practical skills to better cultivate technical talent, who is better sought after by employers. Recognising the benefits of profession-oriented higher education and relevant institutes, the PRC government has been increasingly promoting cooperation between higher education institutions and corporations with a view to cultivate more application-oriented talent and



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make talent cultivation more demand-driven. This is expected to increase the number of private higher education institutions which focus on closing the gap between higher education talent cultivation and the market demand for application-oriented talent.

### PRIVATE HIGHER IT EDUCATION INDUSTRY IN CHINA

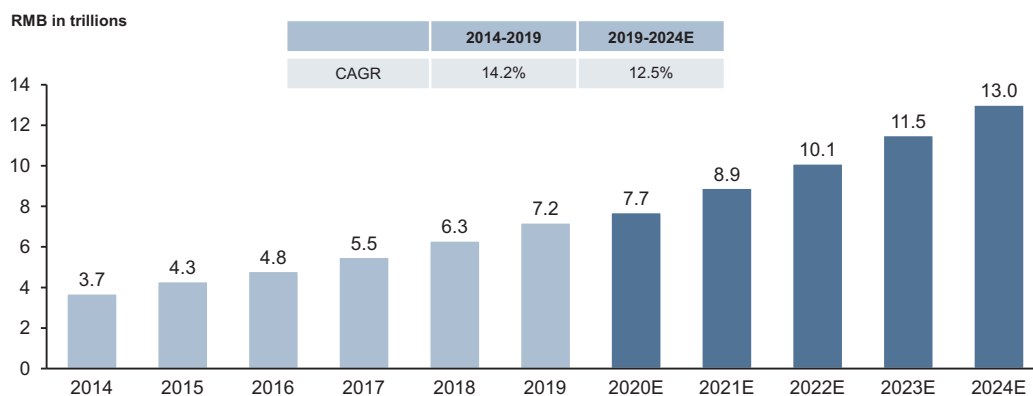
#### The Software and IT Service Industry in China

According to the Frost & Sullivan Report, software and IT service industry is defined as operational activities involving the production, gathering, processing, storage, transmission, searching and utilisation of information, along with information service. The software and IT services industry is a national strategic emerging industry in China. The PRC government has launched a series of policies to support the growth of this industry in terms of, among others, taxation, research funding, import and export preferential treatment, talent cultivation, intellectual property protection, market development and investment.

#### *Market Size of Software and IT Service Industry in China*

The market size of software and IT service industry in China, as measured by revenue, has experienced strong growth in recent years, primarily driven by technology innovations, industry demand and favourable government policies. According to the Frost & Sullivan Report, the market size of software and IT service industry in China in terms of revenue increased from RMB3.7 trillion in 2014 to RMB7.2 trillion in 2019, representing a CAGR of 14.2%, and is expected to reach RMB13.0 trillion in 2024, representing a CAGR of 12.5% from 2019. The following chart shows the historical and projected total revenue of software and IT service industry in China from 2014 to 2024:

Total Revenue of Software and IT Service Industry in China (2014–2024E)



Source: Frost & Sullivan

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### *Talent Supply Shortage of the Software and IT Service Industry*

According to the Frost & Sullivan Report, the total number of employees in software and IT service industry in China increased from approximately 5.5 million in 2014 to approximately 6.7 million in 2019, representing a CAGR of 4.0%, and is projected to reach approximately 8.6 million in 2024, representing a CAGR of 5.1% from 2019.

According to “The Guidelines for the Planning of Talent Development in Manufacturing” (“*製造業人才發展規劃指南*”), there will be a significant supply-demand gap of talent for the software and IT service industry due to the anticipated rapid growth of the new-generation information technology industry in China over the next ten years. It is estimated that the supply-demand gap of talent will be 7.5 million persons in 2020, which is expected to further increase to 9.5 million persons in 2025, when the total demand is projected to reach 20.0 million persons. The significant supply-demand gap of talent for the industry signals a growing and urgent demand of students who intend to receive higher education to meet such job requirements in China.

### **Private Higher IT Education Industry in China**

According to Frost & Sullivan, private higher IT education is defined as the full-time formal higher education programmes of IT majors provided by private higher education institutions, and the growth of China’s software and IT service industry has created demands for talent who has in-depth understanding and solid practical skills on emerging technologies, such as Internet of Things and artificial intelligence. Such demands are expected to guide private higher education institutions on their curriculum arrangement and talent cultivation goals in relation to private higher IT education. Moreover, private higher education institutions are creating new majors and academic programmes to cultivate talent who meets the knowledge requirements of emerging technologies.

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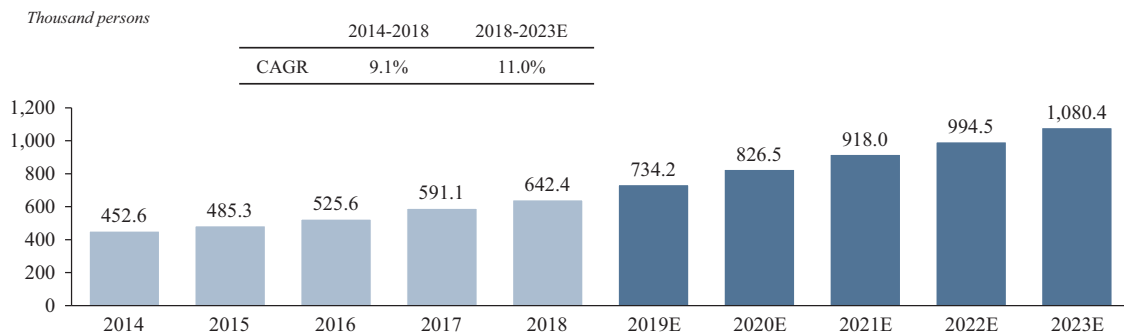
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### *Market Size of Private Higher IT Education Industry in China*

According to Frost & Sullivan, the market size of China's private higher IT education industry is measured by total student enrolments in IT majors at private higher education institutions in China, which increased from approximately 452.6 thousand in 2014 to approximately 642.4 thousand in 2018, representing a CAGR of 9.1% from 2014 to 2018. Driven by the promising development of China's IT industry in the future, the total number of student enrolments in IT majors is expected to continue to grow, reaching approximately 1,080.4 thousand in 2023, representing a CAGR of 11.0% from 2018 to 2023. The following chart shows the historical and projected total number of student enrolments in IT majors at private higher education institutions from 2014 to 2023:

Total Number of Student Enrolments in IT Majors in Private Higher Education in China (2014-2023E)



Source: Frost & Sullivan

### *Market Drivers of Private Higher IT Education Industry in China*

According to the Frost & Sullivan Report, the growth of China's private higher IT education industry is driven primarily by the following factors:

- **Rapid growth of IT-related industries:** IT-related industries witnessed rapid growth in past years. Specifically, for the software and IT service industry in China, its market size in terms of revenue increased from RMB3.7 trillion in 2014 to RMB7.2 trillion in 2019, representing a CAGR of 14.2% in the same period. The rapid growth stimulates the demand for IT talent, especially the demand for talent with higher education background. Meanwhile, attractive salary provided in IT-related industries also attracts more students to choose IT-related higher education.
- **Emergence of new technologies:** Thanks to the continuous technology advancement in IT-related industries, an increasing amount of new technologies emerge, such as artificial intelligence, Internet of Things and 5G, which may significantly re-shape the landscapes of many industries, and continue to develop. The emergence of those new technologies creates the huge demand for talent with solid educational background and professional skills in such fields.

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- **Government support for IT-related industries:** The PRC government has promulgated a series of policies to support the development of IT-related industries, including but not limited to, “The Outline of National Informatisation Development Strategy” (國家信息化發展戰略綱要), “The Development Plan on the Software and IT Service Industry (2016-2020) (軟件和信息技術服務業發展規劃(2016-2020)), “Made in China 2025” (中國製造 2025), “Notice of the State Council on Issuing the Development Plan on the New Generation of Artificial Intelligence” (國務院關於印發新一代人工智能發展規劃的通知). These policies are expected to promote the development of IT-related industries, which in turn creates the demand for talent.

### COMPETITIVE LANDSCAPE OF PRIVATE HIGHER EDUCATION IN CHINA

#### Competitive Landscape of Private Higher Education Industry in China, Liaoning, Guangdong and Sichuan Provinces

According to Frost & Sullivan, China’s private higher education market is highly fragmented, as the total number of private higher education institutions reached 749 in 2018, but the top five market players only occupy a combined market share of 8.7% in the same year in terms of student enrolments.

In the 2018/2019 school year, our Group ranked twelfth in terms of student enrolments among all private higher education groups in China, with a total number of student enrolments of approximately 34.1 thousand. If we exclude independent colleges from the ranking, our Group ranked eighth in terms of student enrolments among all private higher education groups. Independent colleges are private higher education institutions that are jointly established by public universities and individuals or private entities and are affiliated with the sponsoring public universities. They are different from other private higher education institutions in many material aspects: (i) the operation and student admission of independent colleges are under the name of the sponsoring public university; (ii) some independent colleges are located on the campus of their corresponding sponsoring public universities and use the teachers and other teaching resources of their corresponding sponsoring public universities; (iii) when students graduate, degrees awarded bear the name of their corresponding sponsoring public universities; and (iv) independent colleges normally pay a certain portion of their tuition fee income to the sponsoring public university for the use of the brand and the resources. For the reasons above, in addition to rankings among all private higher education institutions, we also present our rankings after excluding independent colleges to provide investors with more information with respect to our competitive position in the private higher education industry in China.

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Moreover, in the 2018/2019 school year, the initial employment rates of graduates of full-time formal higher education programmes provided by Dalian University and Chengdu University were higher than their respective local average initial employment rates of graduates of full-time formal higher education programmes in Liaoning province and Sichuan province. The following table compares the initial employment rate of our graduates and the average level of higher education graduates in the 2018/2019 school year in Liaoning, Guangdong and Sichuan provinces:

### Initial Employment Rate of Higher Education Graduates in Liaoning, Guangdong and Sichuan Provinces

Province	Initial Employment Rate
Liaoning	<b><u>Dalian University</u></b> <span style="float: right;"><b><u>92.73%</u></b></span>
	Average level <span style="float: right;">91.95%</span>
Guangdong	<b><u>Foshan University</u></b> <span style="float: right;"><b><u>92.42%</u></b></span>
	Average level <span style="float: right;">94.58%</span>
Sichuan	<b><u>Chengdu University</u></b> <span style="float: right;"><b><u>97.19%</u></b></span>
	Average level <span style="float: right;">88.28%</span>

*Source: Frost & Sullivan*

In addition, the competitiveness of our students is demonstrated by their average monthly salary after graduation. In the 2017/2018 school year, the average monthly salary of graduates of full-time formal higher education programmes provided by each of Dalian University, Foshan University and Chengdu University were significantly higher than the average monthly salary of graduates of all the full-time formal higher education programmes in Liaoning, Guangdong and Sichuan provinces, respectively. The following table compares the average monthly salary of our graduates and the average level of higher education graduates in the 2017/2018 school year in Liaoning, Guangdong and Sichuan provinces:

### Average Monthly Salary of Higher Education Graduates in Liaoning, Guangdong and Sichuan Provinces

Province	Average Monthly Salary
Liaoning	<b><u>Dalian University</u></b> <span style="float: right;"><b><u>5,211</u></b></span>
	Average level <span style="float: right;">4,600</span>
Guangdong	<b><u>Foshan University</u></b> <span style="float: right;"><b><u>4,528</u></b></span>
	Average level <span style="float: right;">4,071</span>
Sichuan	<b><u>Chengdu University</u></b> <span style="float: right;"><b><u>5,045</u></b></span>
	Average level <span style="float: right;">4,453</span>

*Source: Frost & Sullivan*

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### Competitive Landscape of Private Higher IT Education Industry in China, Liaoning, Guangdong and Sichuan Provinces

Our three universities offered a total of 26 IT majors and had a total of approximately 16.0 thousand students enrolled in the IT majors for the 2019/2020 school year. According to the Frost & Sullivan Report, in the 2018/2019 school year, our Group ranked the first in terms of the number of IT majors and the second in terms of the number of students enrolled in IT majors among all private higher education service providers in China. After excluding independent colleges from the ranking, our Group ranked the first in terms of the number of students enrolled in IT majors among all private higher education institutions in the 2018/2019 school year, according to the Frost & Sullivan Report. Our independent industry consultant, Frost & Sullivan, is of the view that the ranking of our Group based on the student enrolments of IT majors in China is an acceptable industry benchmark for performance evaluation for the following reasons: (i) the “IT majors” is a well-defined industry term, which refers to electronic information discipline for undergraduate and junior college education and computer discipline for undergraduate education; (ii) the Group is an education service provider that focuses on providing IT higher education services; and (iii) the student enrolments of IT majors can fairly evaluate the enrolment capacity of IT higher education service providers and the capability of such providers to admit students. The following table illustrates the top five players in terms of student enrolments of IT majors during the 2018/2019 school year in China’s private higher IT education industry:

Top Five Private Higher Education Groups by Student Enrolments of IT Majors in China

Ranking	Private Higher Education Group	Student Enrolments of IT Majors (in thousands)
1	Company A (A private higher education service provider that operates multiple private higher education institutions in multiple provinces and offers undergraduate programmes and junior college diploma programmes with a wide range of course offerings)	17.4
<u>2</u>	<u><b>Our Group</b></u>	<u><b>15.4</b></u>
3	Company C (A private higher education service provider that operates multiple private higher education institutions mainly in Southwestern China and offers undergraduate programmes and junior college diploma programmes with a wide range of course offerings)	10.5
4	Company D (A private higher education service provider that operates two higher education institutions in central China and offers undergraduate programmes and junior college diploma programmes with a wide range of course offerings)	8.3
5	Company E (A private higher education service provider that operates multiple private higher education institutions in multiple provinces and offers undergraduate programmes and junior college diploma programmes with a wide range of course offerings)	8.3

*Source: Frost & Sullivan*

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In terms of student enrolments of IT majors, Dalian University ranked the first in Liaoning province, Chengdu University ranked the third in Sichuan province, and Foshan University ranked the fifth in Guangdong province in the 2018/2019 school year. The following tables illustrate the ranking of our universities in terms of student enrolments of IT majors during the 2018/2019 school year in Liaoning, Guangdong and Sichuan provinces:

### Leading Players in terms of Student Enrolments of IT Majors in Liaoning, Guangdong and Sichuan Provinces

Province	Ranking	Private Higher Education Institution	Student Enrolments of IT Majors (in thousands)
Liaoning	<u>1</u>	<u>Dalian University</u>	<u>7.1</u>
	2	Institution A	2.5
	3	Institution B	2.3
Guangdong	1	Institution C	7.1
	2	Institution D	4.8
	3	Institution E	4.4
	4	Institution F	4.0
	<u>5</u>	<u>Foshan University</u>	<u>3.9</u>
Sichuan	1	Institution G	8.0
	2	<u>Institution H</u>	<u>5.2</u>
	<u>3</u>	<u>Chengdu University</u>	<u>4.3</u>

Source: Frost & Sullivan

### Entry Barriers of Private Higher Education Industry in China

According to the Frost & Sullivan Report, entry barriers of private higher education in China include the following:

- **Approval of the government:** The lengthy and complicated process in obtaining and maintaining a series of approvals, licences and permits from relevant PRC government to establish a private school becomes a natural barrier for new entrants.
- **Sufficient initial capital and durative investment:** The establishment of a new school requires large capital investment for the construction of teaching facilities and continued investment to support the operation and expansion. The new entrants must have sufficient capital and be able to afford the intensive initial investment and the durative additional investment.
- **Land resource and relevant facilities:** With the tight supply of available land resource and the rising rental cost, the availability of land resource for school facilities has become one of the entry barriers for new entrants to established new schools.

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- **Qualified teachers:** Teachers with practical industry experience and know-how are in great demand in the private higher education institutions. New entrants who are not able to access such resources would face challenge to catch up with the existing competitors in the market.
- **Brand awareness and student resources:** Students have strong preference to attend a school with long operating history and well-established reputation, which makes it difficult for new entrants to enrol sufficient students.
- **Operational experience and management capability:** The operation of higher education institutions involve the management of a large amount of people with a complex sets of roles, which foster a highly complex system. Without operational and management experience, new entrants could encounter great challenge in achieving larger scales and realise scale economy.

### CHINA'S CONTINUING EDUCATION MARKET

#### China's Continuing Higher Education Market

In China, continuing higher education primarily refers to post-secondary learning activities and programmes which are provided by higher education institutions to adult students who intend to be awarded higher education degrees or to participate in non-degree trainings.

China's continuing higher education industry comprises of two segments, namely continuing formal higher education (高等學歷繼續教育) and continuing non-formal higher education (高等非學歷繼續教育). Continuing formal higher education primarily includes adult higher education and web-based higher education, and students enrolled in these education programmes will be awarded bachelor's degrees or junior college diplomas after graduation. Continuing non-formal higher education primarily includes postgraduate courses (研究生課程進修班), self-taught examination preparation courses (自考助學班), and in-service trainings (進修及培訓) for certificates of vocational qualifications or job-related qualifications.

#### Market Size of Continuing Higher Education in China

According to the Frost & Sullivan Report, the student enrolment of continuing formal higher education in China slightly increased from 12.8 million in 2014 to 14.2 million in 2018, representing a CAGR of 2.6% from 2014 to 2018. The student enrolment of continuing formal education in China is expected to increase to 18.2 million by 2023, representing a CAGR of 5.1% from 2018 to 2023, jointly driven by the anticipated increase in the student enrolment of adult higher education programmes and web-based higher education programmes (網絡高等教育項目).



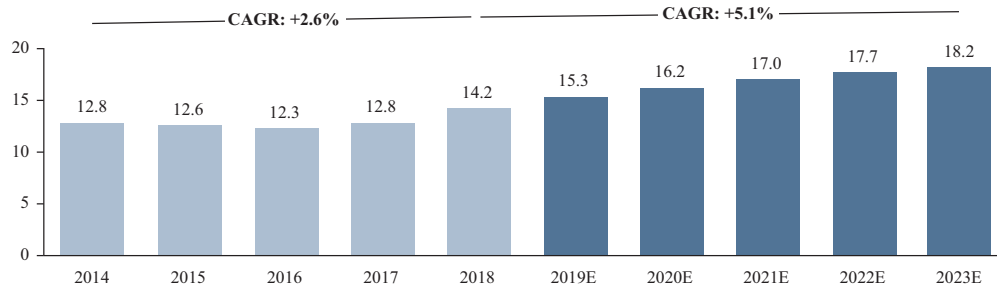
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### Student Enrolments of Continuing Formal Higher Education in China (2014–2023E)

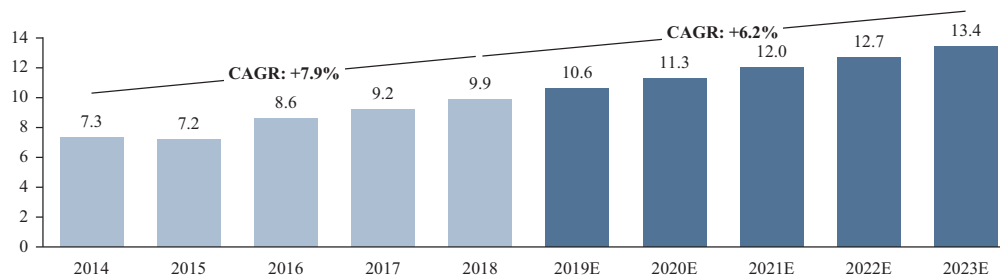
Unit: Million



Driven by the increase in the student enrolment of in-service training, the student enrolment of continuing non-formal higher education in China increased from 7.3 million in 2014 to 9.9 million in 2018, representing a CAGR of 7.9% during the same period. Given that more and more people is expected to choose in-service training to obtain certificates of vocational or job-related qualifications, the students enrolment of continuing non-formal higher education in China is expected to further increase to 13.4 million by 2023, representing a CAGR of 6.2% from 2018 to 2023.

### Student Enrolments of Continuing Non-formal Higher Education in China (2014–2023E)

Unit: Million



### Competitive Landscape of Continuing Higher Education in China

According to the Frost & Sullivan Report, a large number of higher education institutions are providing continuing higher education services in China, and the continuing higher education industry in China is highly fragmented with no dominant player.

### Market Drivers of Continuing Higher Education in China

According to the Frost & Sullivan Report, the growth of China's continuing higher education market is primarily driven by the following factors:

- **People's increasing emphasis on their education levels:** It is widely recognised that higher education brings more and better job opportunities. For students who are unable to receive higher

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education through traditional means such as attending the national college entrance examination, continuing higher education provides them with easier access to higher education. To improve their education levels and job prospects, more and more adults choose to pursue continuing higher education in China.

- ***Job requirements on education background and professional skills:*** With the rapid economic growth of China, almost all industries have witnessed significant development and upgrading in past decades. The development and upgrading of industries in China lead to new and higher requirements for professional talent. Education background and professional skills have become critical job requirements. Continuing higher education provides students without higher education background with opportunities to pursue degrees to meet those job requirements. In addition, for working professionals, continuing higher education provides them with opportunities to improve their competitiveness in job markets by honing their professional skills or obtaining relevant certificates and qualifications.
- ***Advancements of technologies:*** The advancement of Internet-related technologies facilitate the development of continuing higher education in China. Web-based higher education eliminates the constraints of traditional offline education in respect of location and time schedule, and allows students to receive distance higher education via the Internet. Due to the convenience that web-based higher education provides, students can utilise their time after work to receive higher education, rather than taking offline full-time courses. In addition, web-based higher education provides students with nationwide higher education resources, which offer students more choices on choosing courses.

### **China's IT and Internet Technology Vocational Training Market**

Apart from continuing higher education, there are various other types of continuing education in China, among which, IT and internet technology vocational training is one of the most thriving markets driven by rapid growth of the IT-related industries and demand for talents with IT skills. IT and internet technology vocational trainings usually focus on training topics including, among others, programming language training, software development training, and computer design training. The IT and internet technology vocational training market discussed in this document refers to standard training services provided to individual customers and does not include customised IT and internet technology vocational training services provided to institutional customers.

### ***Market Size of IT and Internet Technology Vocational Training Market***

According to the Frost & Sullivan Report, the market size of IT and internet technology vocational training services grew from RMB21.3 billion in 2014 to RMB42.1 billion in 2019, representing a CAGR of 14.6%. As the Chinese government is vigorously promoting IT-related industries such as artificial intelligence and big data, the demand for IT talents is expected to increase. The market size is forecasted to grow from RMB42.1 billion in 2019 to RMB72.0 billion in 2024, representing a CAGR of 11.3%.

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### *Market Drivers of IT and Internet Technology Vocational Training in China*

According to the Frost & Sullivan Report, the growth of China's IT and internet technology vocational training market is primarily driven by the following factors:

- ***Growing information technology and internet technology industry in China:*** China's information technology and internet technology industry has experienced solid growth over the past several years. The rapid growth has created significant demand for professional IT talents with sufficient practical knowledge and technical skills.
- ***Rapid industrial innovation and upgrades:*** The rapid development of new information and internet technologies, along with emerging platforms and trends, such as mobile internet, cloud computing and big data, makes it difficult for professionals and university curricula to stay abreast of the latest technology developments, which incentivised students and employed working professionals to obtain additional trainings on a regular basis.
- ***Enhancement of the requirement on employee skills:*** As an intelligence-intensive industry, the information technology and internet technology industry generally requires employees in this industry to have a higher level of expertise. The rapid-evolving nature of this industry also requires employees to constantly obtain new skills. As a result, demand for information technology and internet technology trainings arises.
- ***Growing number of graduates of higher education:*** The continuing growth in the number of higher education graduates has enlarged the population base for professional education. Moreover, the increasing number of graduates have also increased the peer pressure in seeking an ideal job, which further motivates graduates to obtain continuing vocational trainings.

### *Competitive Landscape of IT and Internet Technology Vocational Training Market in China*

According to the Frost & Sullivan Report, China's IT and internet technology vocational training market is highly fragmented with no dominate players in this market. Leading market participants mainly rely on their nationwide learning center network to generate most of their revenues from offline face-to-face courses. In recent years, more market players are offering training services through online channels and tap into online education market to achieve further market penetration and expand their revenue sources.

We acquired 90.91% of the equity interest of Tianjin Ruidao in March 2020. According to the Frost & Sullivan Report, Tianjin Ruidao was ranked the seventh among all IT and internet technology vocational training providers in China in terms of revenue generated from tuition fees for offering IT and internet technology vocational training services in 2019.

The IT and internet technology vocational training markets are highly fragmented in the regions where the seven training schools of Tianjin Ruidao are located. Both leading industry participants with national presence

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and local players compete in these local markets. The following table illustrates the sizes of the addressable market of the provinces where the seven training schools of Tianjin Ruidao are located and each school's market share in the corresponding provinces:

Training school	Location	Addressable Market <sup>(1)</sup> (RMB Billion)	Market Share	Ranking in terms of revenue in 2019	Ranking in terms of student enrolments in 2019	Number of market players
Tianjin Binhai Newtown Neusoft Ruidao Software Talent Vocational Training School . . . . .	Tianjin	1.1	1.2%	4	4	>280
Shenyang Neusoft Software Talent Training Centre . . . . .	Liaoning	1.0	3.7%	1	1	>250
Dalian Neusoft Software Talent Training Centre . . . . .	Liaoning	1.0	2.0%	2	2	>250
Nanjing Neusoft Talent Training Centre . . . . .	Jiangsu	6.0	0.2%	6	6	>1,500
Qingdao West Coast New District Neusoft Ruidao Software Talent Training School . . . . .	Shandong	3.3	0.4%	5	5	>820
Guangzhou Neusoft Software Talent Vocational Training School . . . . .	Guangdong	7.2	0.2%	5	5	>1,400
Qinhuangdao Neusoft Venture School . . . . .	Hebei	0.2	0.4%	outside top ten	outside top ten	>200

*Note:*

(1) The addressable market represents the size of IT and internet technology vocational training market in 2019 in the provinces where our training schools are located.

### CHINA'S IT VALUE-ADDED EDUCATIONAL SERVICE MARKET

According to the Frost & Sullivan Report, IT value-added service refers to a variety of value-added IT education-related services provided to various education institutions such as secondary vocational schools, junior colleges and universities (mainly to higher education institutions providing IT majors). IT value-added educational service providers generally offer comprehensive or specific solutions including, among others, hardware, software, curriculum resources, teaching resources, training courses, course instructors, and internship opportunities. Typical examples of IT value-added educational services include joint establishment of academic majors, smart education platform and teaching resources and practical training laboratory solutions. The revenues of IT value-added educational service providers usually come from service fees based on student enrolments, software licence fees, hardware procurement and installation fees, and curriculum resources fees.

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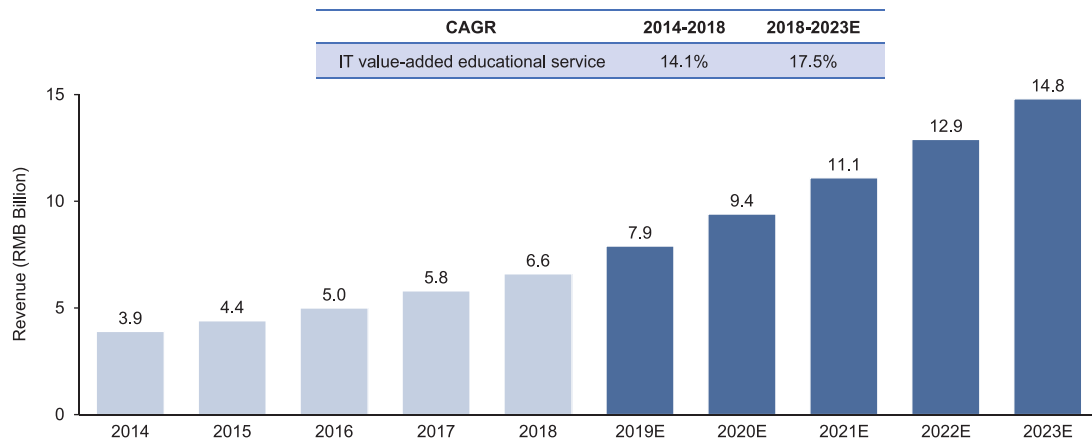
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### Market Size of IT Value-added Educational Service in China

According to the Frost & Sullivan Report, driven by IT industries' increasing demand for professional talents, more educational institutions are seeking for cooperation with IT value-added educational service providers so that their students can outperform students of their competitors in the job market. From 2014 to 2018, the market size grew from RMB3.9 billion to RMB6.6 billion, representing a CAGR of 14.1%. Given vigorous policy support from the Chinese government, more educational institutions will form partnerships with service providers in the future, which will drive the market to reach RMB14.8 billion in 2023, representing a CAGR of 17.5% from 2018 to 2023, according to the Frost & Sullivan Report.

Market Size of IT Value-added Educational Services (China), 2014 — 2023E



### Market Drivers of IT Value-added Educational Service in China

According to the Frost & Sullivan Report, the growth of China's IT value-added educational service market is primarily driven by the following factors:

- **Rapid growth of IT-related industries:** IT-related industries witnessed rapid growth in past years. Specifically, for the software and IT service industry in China, its market size in terms of revenue increased from RMB3.7 trillion in 2014 to RMB7.2 trillion in 2019, representing a CAGR of 14.2% in the same period. Meanwhile, as more vertical industries such as financial industry, pharmaceutical industry and manufacturing industry are embracing increased levels of digitisation, IT-related industries not only grow in terms of the number of companies, but also in its quality of service.
- **Government support for IT-related industries:** The PRC government has promulgated a series of policies to support the development of IT-related industries, including but not limited to, “The Outline of National Informatisation Development Strategy” (國家信息化發展戰略綱要), “The Development Plan on the Software and IT Service Industry (2016-2020) (軟件和信息技術服務業發展規劃(2016-2020))”, “Made in China 2025” (中國製造 2025), and “Notice of the State Council on Issuing the Development Plan on the New Generation of Artificial Intelligence” (國務院關於印發新

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一代人工智能發展規劃的通知)。These policies are expected to promote the development of IT-related industries, which in turn creates the demand for talent. In addition, solid IT infrastructure such as fibre network serves as foundation for China to vigorously develop internet data centers (IDC), which serve the growing need of secure data storage, transmission and analyses.

- ***Discrepancy between supply and demand of IT talents:*** Given the rapid growth of IT-related industries, demand for IT talents quickly outruns the supply. IT companies prefer talent with practical experience, which a majority of fresh graduates lack. This is mainly due to educational institutions' focus on theoretical education instead of practical training. As a result, there are unmet demands for qualified IT talents in the market, which will in turn boost the need for IT value-added educational service.
- ***Government initiative for educational reform:*** In recent years, the PRC government has issued a series of policies and documents to initiate reform in vocational education. The PRC government encourages more cooperation between educational institutions and enterprises to nurture comprehensive talents that are well-adapted to the requirements of various jobs. In addition, the student enrolments in higher vocational colleges in China has increased by one million in 2019, reflecting the need for value-added educational service from the vocational educational institutions.

### Entry Barriers of IT Value-added Educational Service in China

According to the Frost & Sullivan Report, the entry barriers of China's IT value-added educational service market are primarily as follows:

- ***Accumulation in teaching resources:*** Current IT value-added educational service providers have accumulated large amounts of quality education resources after years of research and development. With data and information collected from past teaching experiences, these providers are able to continuously improve and complement their teaching resources offerings. In addition, their connection with industry-leading companies gives them abundant resources to update their case studies and real-life simulation programmes. It is difficult for new entrants to have the same level of education resources.
- ***Qualified teachers:*** IT value-added educational service requires dual-qualified teachers who have both adequate academic background and teaching skills and relevant industry experience and practical skills. Such dual-qualified teachers are scarce resources in the market and difficult to attract and retain. New entrants would face challenges in catching up with the trend of market development without adequate dual-qualified teachers.
- ***Offline campuses and delivery centres:*** Current IT value-added educational service providers still heavily rely on offline campuses and delivery centres, being the physical establishment of an education facility providing IT value-added educational services, to attract new students and expand their presence nationwide to build up their reputation. It requires a large amount of capital investment

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to establish and operate new campuses and delivery centres before they are able to make profits in a relatively longer period of time. New market entrants may have limited capital and experience to expand their network.

- **Client resources and sales network:** Current IT value-added educational service providers have already established steady partnerships with a number of educational institutions. These service providers have a thorough understanding of educational institutions' specific requirements and are able to provide customised services after years of cooperation. Existing established relationships with these educational institutions naturally make it difficult for competitors including new entrants to establish new relationship with these educational institutions.

### Competitive Landscape of IT Value-added Educational Service Market in China

Current IT value-added educational service providers in the market primarily include comprehensive IT education groups, IT training companies, internet companies, and traditional IT companies.

According to the Frost & Sullivan Report, Tianjin Ruidao ranked the fifth in terms of the revenue generated from providing IT value-added educational services in 2019 among all IT value-added educational service providers in China. The following tables illustrate the ranking of Tianjin Ruidao in the IT value-added educational service market in China:

<u>Ranking</u>	<u>Market participants</u>	<u>Revenue in 2019 (RMB Millions)</u>
1	Company A (A software and IT services group listed on the Hong Kong Stock Exchange)	200.0
2	Company B (An IT value-added educational service company that mainly serves the education industry)	150.0
3	Company C (An education services provider focusing on higher education and vocational education in China)	120.0
4	Company D (A comprehensive technology company providing IT product research and development, IT education resources and training, human resources services and IT business incubation services)	100.0
5	Tianjin Ruidao	96.3

Source: Frost & Sullivan

### Future Trends of IT Value-added Educational Service in China

According to the Frost & Sullivan Report, China's IT value-added educational service market is expected to be as follows:

- **Increasing support from smart education resources and platforms.** With IT infrastructure in higher education institutions being updated and improved, more institutions will embrace the support of

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smart education resources and platforms. By adopting education platforms and upload course content and resources, teachers can choose to hold live or recorded classes online, so students can freely choose when to start their classes. One class can be divided into several modules, with different learning points and theoretical focus in order to enhance students' enthusiasm for learning. With increasing support from smart education resources and platforms, teachers will be released from daily routines and may spend more time on course research and in-depth communication with students about course work and enhancing their skillset.

- ***Further integration of enterprises and educational institutions in joint establishment of academic majors.*** As Chinese economy is transforming from investment-oriented to consumption-oriented, it poses new challenges and opportunities to current IT enterprises and students. IT enterprises demand for students who possess both solid academic knowledge and industry know-how of turning knowledge into applications to adapt to the ever-changing market environment. Given these demands, IT value-added educational service providers can serve as liaisons between IT enterprises and educational institutions to communicate and engage in joint establishment of academic majors which can better prepare students for solving future problems, smoothen their learning curve during their work, and bring in more updated industry practice. With increasing demands for IT talents driven by the prosperous digital economy, service providers in the future will have deeper understanding of requirements of both IT enterprises and education institutions, and engage in further integration of cooperative partnerships.
- ***More constructions of practical training laboratory.*** Practical training or internships in IT laboratories has become a prevalent practice for talent cultivation, especially in junior colleges. Compared to normal classes, IT laboratories immerse students in a fast-paced environment and with several tasks provided by IT enterprises, testing their knowledge mastery and reaction capability. Students learn to solve practical problems from real work and prepare themselves for future problems that are alike. IT companies can use this opportunity to acquire additional help for short-term projects and scout for desired talents, saving time and cost and increasing effectivity as compared to doing a career fair. Seeing the great potential and benefits of IT laboratories, more educational institutions will cooperate with service providers to construct such laboratories to train their students.
- ***Merging between online training and offline training model.*** Since online-to-offline training combines the adaptability and convenience of online training and brand-building function of offline training, there will be more service providers adopting this blended delivery method. Students can use educational platforms provided by service providers to study various courses and conduct case studies, and practise these cases and scenarios in IT laboratories offline. Meanwhile, service providers are able to collect and analyse data for better teaching and service quality, which will also facilitate their future course design and student fostering plans.
- ***Detailed and tailored courses setting and design based on the type of educational institutions.*** Given IT value-added educational service providers cooperate with a wide range of educational institutions with different academic focus, in the future, service providers will seek for more detailed



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and customized cooperation plans and course designs for different types of educational institutions. For example, the proportion of IT laboratory practice will vary among junior colleges, universities and secondary vocational schools, as well as the scope and depth of core courses of their majors. Differentiating the service content among different educational institutions will help service providers get deeper understanding of the cooperation, and expand their market presence.

### **IMPACT OF COVID-19**

According to Frost & Sullivan, the impacts of the COVID-19 on China's higher education market, private higher education market, private higher IT education market, software and IT service industry, continuing education market and IT value-added educational service market are as follows.

#### **Impact of COVID-19 on higher education market, private higher education market, private higher IT education market in China**

During the first quarter of 2020, due to the COVID-19 outbreak, almost all higher education institutions chose to deliver their courses for formal higher education programmes via online platforms, as an alternative form of face-to-face courses. As the number of newly confirmed cases continued to decrease in China, higher education institutions have started to re-open campuses and allow students to return since April 2020. After the National College Entrance Examination in July 2020, higher education institutions have begun their student admission activities for the fall semester of 2020/2021 school year, and it is expected that the student admission for the 2020/2021 school year will proceed as planned across the country. In addition, in an effort to mitigate the negative impacts of COVID-19 outbreak on employment, the PRC government and the MOE introduced plans for expanding student enrolments of higher education. As a result, the student enrolments of China's higher education market, the private higher education market and the private higher IT education market will continue to grow in the forecast period, and the impacts of COVID-19 outbreak on the abovementioned markets will be insignificant.

#### **Impact of COVID-19 on software and IT service industry in China**

Due to the COVID-19 outbreak, the software and IT service industry in China experienced a negative growth in the first four months of 2020. However, as the number of newly confirmed cases continued to decrease in the PRC, many businesses have started to re-open in accordance with government guidance and various restrictive measures on travel and social distancing were gradually lifted for the residents within the country. The growth rate of the software and IT service industry in China turned to positive in May 2020, and the growth momentum is expected to maintain for the rest of the year and the forecast period.

#### **Impact of COVID-19 on continuing education market in China**

Higher education institutions move their continuing higher education courses online during the COVID-19 outbreak in China, and the student enrolments of those courses were not significantly affected. As a result, the impacts of COVID-19 outbreak on the continuing higher education market will be insignificant. Due to the

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government guidance on closing offline tutoring centres, China's IT and internet technology vocational training market witnessed a decline in the first half of 2020. Despite many institutions move their courses online, the student enrolments of IT and internet technology vocational training courses decreased due to declining marketing activities and less willingness of individual customers to take online courses. However, with the re-opening of offline training centres, the IT and internet technology vocational training market is expected to recover from the COVID-19 outbreak in the second half of 2020.

### **Impact of COVID-19 on IT value-added educational service market in China**

The impacts of COVID-19 outbreak on the IT value-added educational service market will be insignificant due to the following reasons: (i) IT value-added educational services are mainly provided to higher education institutions providing IT majors and the student enrolments of higher IT education is expected to continue to grow; (ii) more higher education institutions tend to procure IT value-added educational services to improve their students' practical skills and employment results given the increasing competition in job markets due to COVID-19 outbreak; and (iii) IT value-added educational service providers are able to deliver their services via online platforms.