
INDUSTRY OVERVIEW

The information and statistics set out in this section and other sections of this document were extracted from the report prepared by Frost & Sullivan, which was commissioned by us, and from various official government publications and other publicly available publications. We engaged Frost & Sullivan to prepare the F&S Report, an independent industry report, in connection with the [REDACTED]. The information from official government sources has not been independently verified by us, the Sole Sponsor, the [REDACTED], the [REDACTED], the [REDACTED], or any of our or 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

We have commissioned Frost & Sullivan, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on the IT solutions market in Macau and Greater Bay Area. The report prepared by Frost & Sullivan for us is referred to in this document as the Frost & Sullivan Report. We agreed to pay Frost & Sullivan a fee of HK\$690,000 which we believe reflects market rates for reports of this type.

Founded in 1961, Frost & Sullivan has 40 offices with more than 2,000 industry consultants, market research analysts, technology analysts and economists globally. Frost & Sullivan’s services include technology research, independent market research, economic research, corporate best practices advising, training, client research, competitive intelligence and corporate strategy.

We have included certain information from the Frost & Sullivan Report in this document because we believe this information facilitates an understanding of the IT solutions market in Macau and Greater Bay Area for the prospective [REDACTED]. The Frost & Sullivan Report includes information of the IT solutions market in Macau and Greater Bay Area as well as other economic data, which have been quoted in the document. Frost & Sullivan’s independent research consists of both primary and secondary research obtained from various sources in respect of the IT solutions market in Macau and Greater Bay Area. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan’s own research database. Projected data were obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the Frost & Sullivan Report, various official government publications and other publications.

In compiling and preparing the research, Frost & Sullivan assumed that the social, economic and political environments in the relevant markets are likely to remain stable in the forecast period, which ensures the steady development of IT solutions market in Macau and Greater Bay Area.

OVERVIEW OF MACROECONOMIC ENVIRONMENT IN MACAU

Nominal GDP

In 2015 and 2016, with the implementation of anti-corruption initiatives by the Chinese central government, the gaming and tourism performance was affected, leading to the slowdown in nominal GDP growth in Macau. The nominal GDP in Macau slightly increased from MOP360.3 billion in 2016 to MOP445.5 billion in 2019. The Macau economy has been affected by the COVID-19 outbreak as it hindered economic activities and tourist visits, with gaming, tourism and retail industries facing the biggest impact. According to the International Monetary Fund (IMF), Macau’s GDP dropped by 54.1% in 2020.

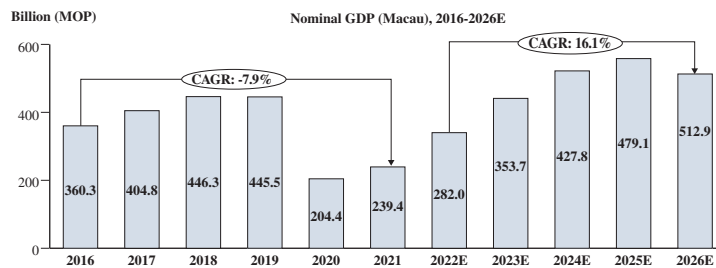
However, the COVID-19 outbreak has gradually subsided in Macau and the border controls have been easing accordingly. In fact, the PRC is to resume issuing tourist visas for visitors to Macau and Zhuhai has begun issuing tourist visas since 12 August 2020, including individual and

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group tours, for Chinese residents to travel to Macau. It is expected that the resumption of tourist visas could be expanded to the rest of the PRC since the second quarter of 2020, which effectively allows for the revival of the gambling industry whose revenue had been dropping since January 2020 due to the COVID 19 outbreak.

With the easing of border controls in Macau, the number of tourists in Macau are already showing signs of improvement and according to Macau Statistic and Census Service, the visitor arrival in Macau increased from 5.9 million in 2020 to 7.7 million in 2021. As such, the GDP in Macau is expected to rebound in the near future as the number of tourist visits are expected to significantly improve. The outbreak of COVID-19 is expected to cause a short-term economic slowdown but may not affect the markets in Macau and the PRC in the long-run.

With the growing demand for goods and services as well as recovery of tourism and gaming industries, it is expected that the nominal GDP in Macau will recover in 2022 and in the near future at a CAGR of 16.1% from 2022 to 2026.

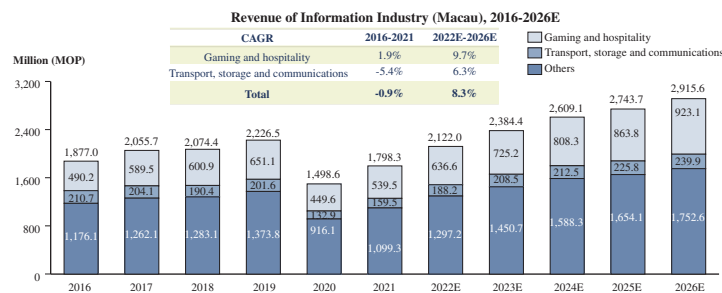


Source: IMF, Frost & Sullivan

Revenue of Information Industry

Revenue of information industry refers to the business receipt of IT related services, including (i) consultancy services related to the installation of computer hardware, (ii) software implementation services, (iii) data processing services, (iv) maintenance and repair services of machinery and equipment, such as computers, other computer and related services. IT solutions is the subset of information industry.

The information industry in Macau has experienced an increase in revenue from MOP1,877.0 million in 2016 to MOP2,226.5 million in 2019. The growth was primarily driven by rising adoption of information technologies in business activities and expanding investment in digital related products and services. Two major downstream industries include gaming and hospitality industry and transport, storage and communications industry, taking up shares of approximately 30.0% and 8.9% respectively by the end of 2021. The drop in 2020 was due to the slowdown in economic growth amid the impact of COVID-19. Despite the negative impact of COVID-19 in 2020, information industry in Macau is expected to grow with a CAGR of approximately 8.3% to attain MOP2,915.6 million in 2026. Gaming and hospitality industry and transport, storage and communications industry are projected to rise at CAGRs of approximately 9.7% and 6.3% respectively from 2022 to 2026.



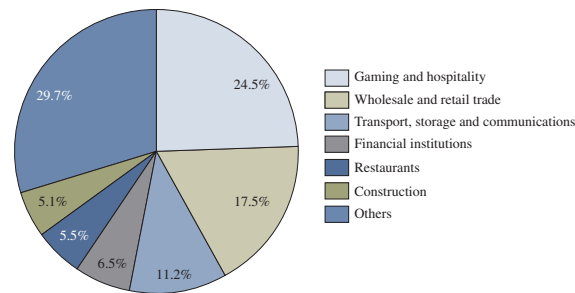
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Source: *Statistics and Census Service of Macau, Frost & Sullivan*

Note: The figure in 2020 is the latest available data and actual figure in 2021 would be released by Statistics and Census Service of Macau in November 2022.

Revenue of information industry in Macau can be further categorised by downstream sectors such as gaming and hospitality sector (24.5%), wholesale and retail sector (17.5%), transport, storage and communications sector (11.2%), financial institutions (6.5%), restaurants (5.5%), construction sector (5.1%) and others (29.7%).

Breakdown of Information Industry by Sector (Macau), 2020



Notes:

1. Others include manufacturing sector, advertising and conference & exhibition organising services sector, industrial sector, etc.;
2. The revenue of information industry from government/public institutions is included in the sectors of hospitality, transport, communication, construction and others.
3. The figure in 2020 is the latest available data and actual figure in 2021 would be released by Statistics and Census Service of Macau in November 2022.

Source: *Statistics and Census Service of Macau, Frost & Sullivan*

OVERVIEW OF IT SOLUTIONS MARKET IN MACAU AND GREATER BAY AREA

Definition and Classification

IT solutions involve the design, supply, integration, operation and maintenance of IT systems. IT solutions could be primarily categorised into two segments, namely (i) enterprise IT solutions and (ii) distribution of hardware and software. Enterprise IT solutions could be further grouped as (i) professional IT services, (ii) managed services and (iii) IT maintenance and consultancy services.

- **Professional IT services:** IT infrastructure and system encompasses the design, supply, building, integration and optimisation of backbone network and IT systems. It includes the supply and integration of hardware and software with different platforms, storage systems, security systems, software, networking equipment and backup solution.
- **Managed services:** Managed services refer to the IT operation management services, including cloud services, the monitoring of customers' cybersecurity environment and system network connectivity. Under the engagement of relevant managed services, IT solutions providers will tackle issues and problems arise in relation to threats to cybersecurity environment or any anomalies in network connection in the IT system.
- **IT maintenance and consultancy services:** IT maintenance and consultancy services generally refers to the provision of 24/7 hotline and service desk for hardware, software and systems and applications to keep IT systems in working condition, identify and resolve errors and defects.

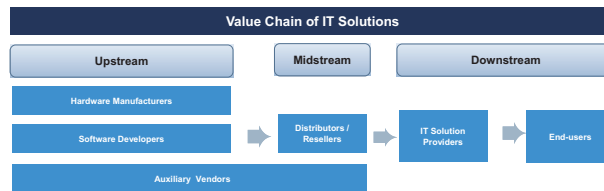
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Value Chain and Business Model Analysis

The IT solutions industry consists of hardware manufacturers and software developers. Hardware manufacturers source the raw materials for the production of components and equipment while software developers conceive, specify, design, programme, document, test and maintain the applications. Entering partnership with the hardware manufacturers and software developers, the distributors or resellers resume the responsibility of sales and distribution, and resell the products to IT solution providers. Sometimes, the IT solution providers source the hardware/software directly from the vendors.

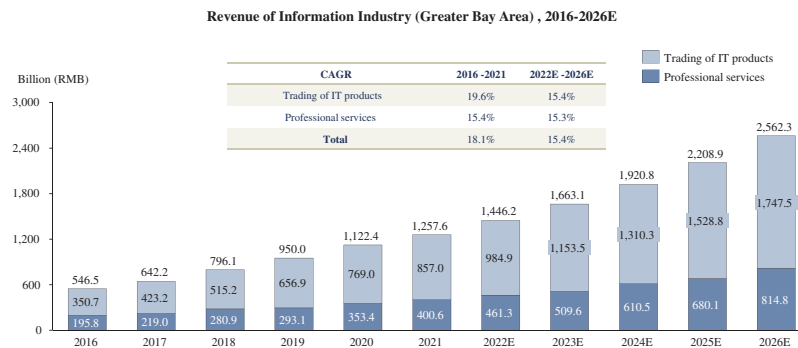
As an IT solution provider and authorised distributor, the Group introduces IT products and services, and provides related IT solutions to the local markets, including Macau and Hong Kong, and provides IT solution services covering procurement and integration, managed services and maintenance services to the end users in Macau. The Group also distributes the IT products to other IT solutions providers and resellers.

It is an industry norm that the international brands of hardware and software products do not directly involve in the sales process with the end users in Macau and Hong Kong, but instead through intermediate authorised distributors who would further promote the products through local networks. It is also common for the IT solution provider to also be an authorised distributor in Macau and Hong Kong, which allows the distributor to cross sell to the customers with operations in both Macau and Hong Kong.



Source: Frost & Sullivan

Revenue of Information Industry in Greater Bay Area recorded a strong increase from RMB546.5 billion in 2016 to RMB1,257.6 billion in 2021, at a CAGR of 18.1%. Supported by the continuing rising demand and expected investment in IT solution services in the next five years, revenue of information industry in Greater Bay Area is expected to increase at a CAGR of approximately 15.4% from RMB1,446.2 billion in 2022 to RMB2,562.3 billion in 2026.

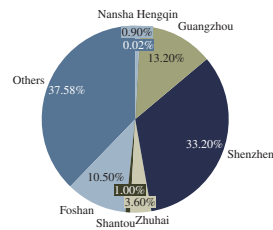


Source: Ministry of Industry and Information Technology of the People's Republic of China, State Council of the PRC, Frost & Sullivan

Shenzhen is the largest local market of IT solutions industry in the Greater Bay Area, with the market share of 33.2% in terms of revenue in 2021, followed by 13.2% of Guangzhou and 10.5% of Foshan. In particular, Nansha and Hengqin accounted for the market shares of 0.9% and 0.02% respectively in terms of revenue in the overall IT solutions market in Greater Bay Area in 2021.

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Market Share of Major Cities in the Overall IT Solutions Industry (Greater Bay Area), 2021

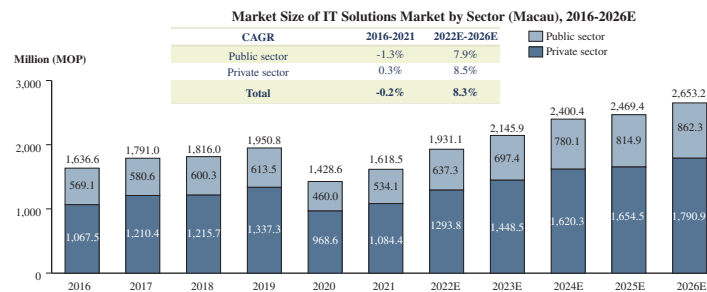


Source: Frost & Sullivan

Market Size of Macau IT Solutions Market by Sector

IT solutions involve the design, supply, integration, operation and maintenance of IT systems. Driven by rising application of information technology and digitalisation among all industries in Macau, IT solutions market has increased from MOP1,636.6 million in 2016 to MOP1,950.8 million in 2019. The drop in 2020 was due to the slowdown of the economic activities during the COVID-19 outbreak. With rising government expenditure on information and communications technology, public sector increased from MOP569.1 million in 2016 to MOP613.5 million in 2019. Private sector also shown a rapid growth from MOP1,067.5 million in 2016 to MOP1,337.3 million in 2019.

In 2020, IT solutions market in Macau is negatively affected by the outbreak of COVID-19 due to the suspension or delay of some projects. However, the market will recover afterwards as Macau continues to expedite the business innovation and digital transformation. The market size of IT solutions market is anticipated to rise at a CAGR of approximately 8.3%, from MOP1,931.1 million in 2022 to MOP2,653.2 million in 2026. Public sector and private sector are forecasted to grow with CAGRs of approximately 7.9% and 8.5% respectively from 2022 to 2026.



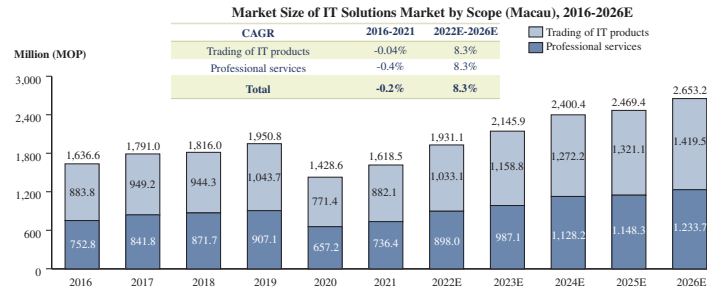
Source: Frost & Sullivan

Market Size of Macau IT Solutions Market by Scope

The growth of IT solutions market in Macau was primarily supported by the rapid development of professional services including supply and installation, managed services and maintenance MOP752.8 million in 2016 to MOP907.1 million in 2019. Meanwhile, trading and distribution of IT products, taking up a larger share of total IT solutions market, also witnessed a growth from MOP883.8 million in 2016 to MOP1,043.7 million in 2019.

Going forward, driven by the rising investment in digitalisation of enterprises and demand for relevant products and services, trading of IT products and professional services are projected to rise at CAGRs approximately 8.3% and 8.3% respectively from 2022 to 2026, reaching MOP1,419.5 million and MOP1,233.7 million respectively by the end of 2026.

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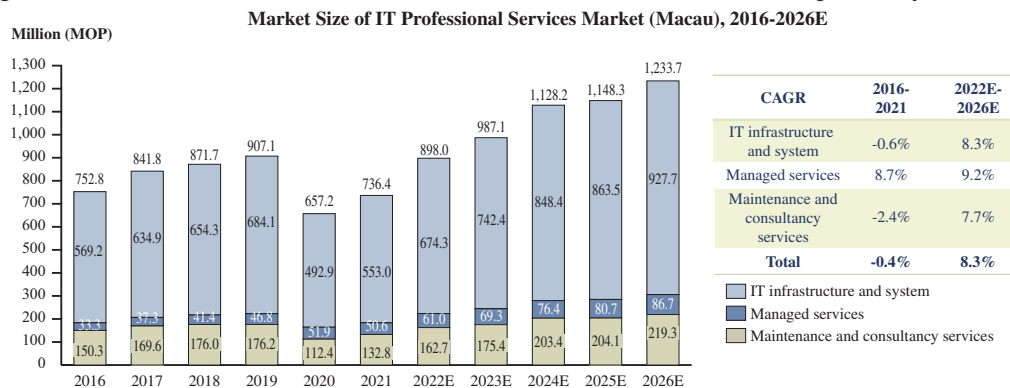


Source: Frost & Sullivan

Market Size of Enterprise IT Solutions in Macau

Professional IT services, accounting for the largest share of the Enterprise IT solutions market in Macau, decreased from MOP569.2 million in 2016 to MOP553.0 million in 2021 with a CAGR of approximately -0.6%. During the same period, managed services segment registered the largest CAGR of approximately 8.7% and IT infrastructure and consultancy services segment attained MOP132.8 million by the end of 2021 with a CAGR of approximately -2.4%, from 2016 to 2021.

Looking forward, supported by the continuous investment in digitalisation and IT infrastructure, enterprise IT solutions are projected to have a rapid growth from 2022 to 2026. Professional IT solutions, managed services, and IT infrastructure and consultancy services are expected to rise at CAGRs of approximately 8.3%, 9.2% and 7.7% respectively from 2022 to 2026, reaching MOP927.7 million, MOP86.7 million and MOP219.3 million respectively in 2026.



Source: Frost & Sullivan

In compiling the growth of the information industry market from 2022 to 2026 and recovery of IT solutions market after 2020, save for the foreseeable impact resulted from COVID-19 outbreak, Frost & Sullivan consider the IT solutions industry and gaming and hospitality industry in Macau remain positive in the long run based on the following reasons:

- The IT solutions projects in Macau that are currently in the pipeline to be launched in the following years will unlikely be affected. There is a steady demand from upgrade, replacement and maintenance of IT systems
- The IT solutions industry in Macau will benefit from the COVID-19 outbreak as people spend more time on internet. Remote working tools and online teaching platforms, particularly videoconferencing software, has seen a significant increase in demand as a result of the border control and other preventive measures. Online demand streaming services and the mobile gaming industry also experienced record usage levels. The increased popularity of online applications would expedite the digitalization of enterprises and create more growth opportunities for IT solutions providers.

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- Although some of the construction sites in Macau had been suspended for around two weeks in February 2020 in compliance with the Macau government's initial policy to combat the COVID-19 outbreak, there has been no significant delay or postponement to the project schedules of certain large-scale construction projects such as the extension of Sands Cotai and the Londoner Macao and the extension of Galaxy Macao Phase 3 and Phase 4, despite the current economic conditions. For example, Grand Lisboa Palace, the only self-operated entertainment place of the group located in Taipa and with an investment of approximately HK\$36 billion, was opened in 2021.
- The outbreak of COVID-19 is expected to bring limited impacts to the gaming and hospitality sector in Macau in the long run due to the fact that the effect of the COVID-19 pandemic has gradually subsided in Macau following the gradual relaxation of the border control and the resumption of business activities. According to the DSEC, the gross gaming revenue in Macau increased from MOP3,317 million in second quarter of 2020 to MOP5,077 million in third quarter of 2020. The growth continued and the gross gaming revenue in Macau further increased from MOP21,836 million in fourth quarter of 2020 to MOP25,381 million in second quarter of 2021, as a result of the rising number of visitor arrivals during the same period. While the gross gaming revenue decreased to MOP18,765 million in the third quarter of 2021, it recovered to MOP19,076 million in the fourth quarter of 2021, as a result of the continued increase in number of visitor arrivals as certain travel restrictions are gradually lifted. The gross gaming revenue and other visitor spending will respond positively. The COVID-19 outbreak has gradually subsided in Macau and the border controls have been easing accordingly. In fact, the PRC is to resume issuing tourist visas for visitors to Macau and Zhuhai has begun issuing tourist visas since 12 August 2020, including individual and group tours, for Chinese residents to travel to Macau. The visitor arrivals increased from 49,740 in second quarter of 2020 to 750,204 in third quarter of 2020, reached 1,738,428 in first quarter of 2021. With the relaxation of border control, visitor arrivals in Macau increased from 1,738,428 in the first quarter of 2021 to 1,827,699 in the third quarter of 2021, representing a year-on-year uplift of 143.6%. The average occupancy rate of guest rooms in Macau increased from 44.9% in the first quarter of 2021 to 50.5% in the third quarter of 2021, representing a year-on-year uplift of 50.5%. The increase in visitor arrival and average occupancy rate of guest rooms in Macau indicates the recovery of the tourism industry in Macau. The resumption of gaming and hospitality sector would drive the growth of IT solutions industry in Macau.
- Ahead of the re-tendering of Macau's casino licenses, Macau's Legislative Assembly has published the draft bill on amendments to gaming law at which it provided clarity on many key issues. These included confirmation that up to six concessions would be granted following the upcoming re-tendering for casino licenses and that each concession would be for 10 years with the possibility of extending by up to three years under exceptional circumstances. Among further details contained in the draft bill are new rules around the future of junkets that dedicated junket rooms in Macau's casinos and revenue share arrangements between junkets and casino concessionaires will be prohibited under the gaming law amendments. As the maximum number of concessions remains unchanged in the draft bill, the demand for IT solutions in the gaming and hospitality sector in Macau is expected to continue in the near future due to (i) the demand for IT infrastructure is stable and is directly correlated to scale of gaming and hospitality facilities instead of gaming revenue, (ii) the diversification of economy as stated in the draft bill would further promote the development of other hospitality sectors, which would drive the overall demand for IT solutions.

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Market Drivers

Integration of smart technology into gaming and hospitality sector — Market participants in gaming and hospitality industry in Macau are always seeking new service features and value-added services due to the intensifying competitions and changing needs from customers. In particular, advanced surveillance technology and video analytics are deployed to monitor their casinos, where contain more than one hundred tables and thousands of slot machines. The surveillance cameras, facial recognition technology, digitally enabled poker chips and baccarat tables track the data of customer demographic and uses algorithms that process the way customers behave at the betting table to determine their appetite for risk. On the other hand, hotels are updating their room facilities with smart home devices, such as AV system, custom designed mobile applications. To enable such features, IT solutions, such as IT infrastructure integration and implementation, are required. The use of smart technology would lead to the upgrade of IT infrastructure, enhancement of other IT systems and IT constancy services. Therefore, the integration of smart technology into gaming and hospitality sector in Macau is expected to drive the demand for IT solutions.

Outsourcing of IT solutions — In order to enhance operation efficiency, organisations tend to adopt cloud-based technology to store data which could be accessed by all employees. The deployment of IoT services generates an increasing amount of data on a day-to-day basis, creating needs for data storage and data storage on cloud. The cloud service solution providers provide organisations with other value-added services such as professional data protection and cybersecurity. Moreover, the physical size reduction and growing performance of the servers have allowed a larger number of servers to be housed in the same amount of space. The third-party service providers therefore could enjoy economies of scale to offer higher performance cloud service with lower cost compared to operating cloud servers by organisations themselves. As a result, the outsourcing of IT solutions services is becoming the mainstream in the industry, which supports the growth of IT solutions.

Development Trend

Development of 5G network — 5G network is the most crucial component for the development of smart city. It could provide high speed, low latency experience for the users and enable the efficient operation of different smart technologies, such as urban management, transportation management, etc. As at September 2020, the first phase of 5G mobile network development by a major telecommunications company in Macau has completed and full indoor-to-outdoor 5G signal coverage was achieved by the end of 2020. According to the Government announcement made on November 2021, the Macau SAR government will issue the first 5G licenses in 2022. With the increasing popularity of 5G technology across different industries in Macau, the average data flow will experience a tremendous surge which requires higher processing capacity in data centre. As a result, the demand for IT solutions in Macau for setting up data centres and related maintenance service is expected to rise with the development of 5G network.

Advancement and popularisation of data analytics — Cloud computing involves networking of large groups of remote servers with internet-based computing, which allows sharing of processing resources and data to computers and other devices, data storage and online access to services. Storage of the data requires terabytes of spaces and the cloud computing solution is one of the most effective technologies to provide data storage and computing power. The arrival of big data has reshaped the analysis of data, especially the data could be used for business performance enhancement.

Increased infrastructure requirements for emerging technology adoption — One of the key drivers for IT solutions is the increased infrastructure requirements for emerging technology adoption, namely cloud and big data, and the integration of these applications into environments, IoT-connected devices and data analytics. IoT refers to the network of physical objects embedded

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with electronics, sensors and software with network connectivity. Organisations are adopting IoT into their business operation in order to collect and analyse relevant data for better cost control and higher efficiency.

Increased data exposure — With the adoption of emerging technology, the rise of information exchanged via the internet increases the data exposure. This has heightened data sensitivity and increased cyber threats in a number of industries, namely gambling, financial services and telecommunication. Developing a security infrastructure, recognising threats and vulnerabilities and risk mitigation, are becoming the key agenda for the organisations. System backup, firewalls, multi-factor authentication and data encryption are common security measures adopted by the organisations. Specifically, end-to-end security solutions, from risk assessment, gap remediation, proactive risk management, active monitoring and surveillance to incident response, are highly desired.

Market Opportunities

Supportive governmental policies in promoting smart city — The Macau Government has been actively promoting the development of smart city for several years. According to “Government of Macau SAR Five Years Development Plan (2016-2020)” published in 2016, “Technology Innovation and Smart City Working Group” has been set up to establish a comprehensive and hierarchical system to assist higher institution and research institutes to develop Macau into a smart city. In 2017, Macau Government has entered into a strategic partnership framework agreement with Alibaba Group, under which Alibaba will support Macau’s transformation into a smart city by using cloud computing technologies in order to benefit both residents and tourists visiting the city. In April 2020, the Macau Government issued “Policy Address 2020” which emphasises the development of smart city by strengthening the 5G network, developing data centre and establishing digital infrastructure. The overall direction aims to integrate smart technologies into urban management, government services, medical services, transportation management, tourism, custom services by utilising the advanced information technology. Therefore, the overall smart city development will boost the demand for IT solution services in Macau.

Implementation of IoT network — According to the “Outline of Development Plan for Guangdong-Hong Kong-Macao Greater Bay Area” 《粵港澳大灣區發展規劃綱要》, the plan aims to build up a smart urban agglomeration. In order to facilitate the development of smart city within the Greater Bay Area, Macau Government has invested extensive resources to conduct R&D works over the years. In July 2018, the University of Macau (UM) received the approval of the Ministry of Science and Technology for the establishment of the nation’s first state key laboratory in IoT for smart city. The UM Lab aims at developing IoT technologies by solving current scientific and technical issues of IoT for smart city development. As the national level research institution is located in Macau, the latest IoT technologies is expected to be firstly implemented in Macau. As a result, along with the development of 5G network and supportive governmental policies, the rapid development of IoT in Macau will directly drive the demand for IT solutions in coming years.

Development of Fin-tech and e-commerce services — In May 2020, People’s Bank of China, China Banking and Insurance Regulatory Commission, China Securities Regulatory Commission and State Administration of Foreign Exchange issued “Opinions on Financial Support for The Construction of The Guangdong-Hong Kong-Macao Greater Bay Area” 《關於金融支持粵港澳大灣區建設的意見》 which has stated the development direction and emphasised the cooperation of financial institutions within Greater Bay Area. In response to the development goal, Macau Government will provide financial incentives to local SMEs and help them develop e-Commerce and cross-border e-Commerce business, as well as popularising digital payment system. In addition, the Macau Government aims at developing local financial industry by (i) establishing the PRC and Portuguese-speaking countries financial service platform, (ii) strengthening financial infrastructures, and (iii) improving local financial laws and regulations. On the other hand, Zhuhai

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Science and Technology Innovation Bureau has issued “Measures for the Administration of Zhuhai-Hong Kong-Macao Science and Technology Innovation Cooperation Projects in Zhuhai City” 《珠海市珠港澳科技創新合作項目管理辦法》 in 2020 which encourages the cooperation of research institutes and technology companies in Zhuhai, Macau and Hong Kong, by providing financial subsidy, up to RMB2.0 million per company. The enhanced cooperation of financial institutions and supportive government policies would translate into growth opportunities for IT solutions providers in the Greater Bay Area, including Hong Kong and Macau as well.

A General Plan for Building a Guangdong-Macau In-Depth Cooperation Zone in Hengqin

A general plan for building a Guangdong-Macau in-depth cooperation zone in Hengqin was issued by the Communist Party of China Central Committee and the State Council on 5 June 2021. The building of the cooperation zone is a major arrangement to enrich the practice of “one country, two systems,” and will be an important driving force for Macau’s long-term development. The cooperation zone would be divided into “first line” and “second line”. The line between Hengqin and the Macau is set as the “first line”; the line between Hengqin and other areas within the customs territory of the PRC is set as the “second line”. The cooperation zone will be classified and managed in different regions. The Hengqin campus of the University of Macau and the Macau jurisdiction of the Hengqin port are managed by the Macau Government as authorized by the Standing Committee of the National People’s Congress. These regions are subject to the system and regulations that has been practised in Macau, and are separated from other regions by physical fences. Guangdong province and Macau would jointly build and manage a shared area to implement special policies for eligible market entities.

According to the plan, the total area of the cooperation zone will be about 106 square km. The plan defines the strategic position of the zone as a new platform to boost Macau’s economic diversification, a new space that provides convenience to Macau residents’ life and employment, a new model to enrich the practice of “one country, two systems,” as well as a new high ground for building the Guangdong-Hong Kong-Macau Greater Bay Area. The plan sets the goal for the cooperation zone to fully demonstrate the strong vitality and strength of “one country, two systems” by 2035.

In particular, the cooperation zone will develop new industries, namely Sci-tech research and development and high-end manufacturing, to promote Macau’s economic diversification. Traditional Chinese medicine and other industries including culture and tourism, conventions and exhibitions, and finance will be promoted. Preferential policies concerning corporate income tax will be improved, and measures will be rolled out to attract talent from home and abroad. The plan also stressed building an integrated new system with Macau featuring high-level opening-up. Under the system, declaration procedures for outbound and inbound goods between Macau and the cooperation zone will be further simplified. Inbound and outbound travel will also become highly convenient. Innovative measures will be introduced in terms of cross-border financial management. A highly convenient mechanism for market access will be established, and efforts will also be made to facilitate the safe and orderly flow of internet data across the border. Macau residents are encouraged to live and work in the cooperation zone. Cooperation between the zone and Macau society will be strengthened in areas concerning people’s livelihood and infrastructure connectivity will also be boosted.

Enterprises that are conducive to Macau’s economic diversification, including IT solutions, will be eligible for a reduced Corporate Income Tax (CIT) rate of 15%. On the other hand, Guangdong province will launch a pilot program to recognize professional qualifications issued by the Macau SAR to ensure a smooth flow of talent in the region. The province plans to collaborate with the Macau SAR’s established professional qualification and evaluation organizations. The agreement was reached at a recent meeting of the Guangdong-Macau cooperation task force on

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labor and social security affairs. Three accords, including reciprocity on social security systems and professional qualifications, were signed. Guangdong also aims to introduce advanced vocational skill standards and training courses from Macau and other places overseas.

The Guangdong-Macau In-depth Cooperation Zone planned for neighbouring Hengqin will focus on four sectors to facilitate the industrial diversifications of Macau from gaming, including technology and high-end manufacturing, traditional Chinese medicine, tourism and MICE, and finance. Research and development of integrated circuits, electronic components, new energy, big data, artificial intelligence, Internet of Things, biomedical engineering will be harboured in the Cooperation Zone, which aims to develop high-end manufacturing. The Cooperation Zone will become “an important stop” for the innovation and technology drive in the Guangdong-Hong Kong-Macau Greater Bay Area. As the central government has previously designated Hengqin to be developed as the International Leisure Tourism Island, the general plan also underscores the development of tourism and MICE as one of the major sectors for the Cooperation Zone. Multiple-entry visas between Macau and Zhuhai will be approved for foreign staff and professional visitors of the MICE events to be held concurrently in Macau and Hengqin to facilitate more cross-border MICE events. For the development of the financial industry, the Cooperation Zone will become a financial service platform between China and Portuguese-speaking Countries, and support Macau firms to set up businesses of wealth management, bonds and leasing in the Zone with lower thresholds. The development of the aforementioned industries would, therefore, increase the number of enterprises in the Cooperation Zone, which in turn increase the demand for IT solutions in the near future.

It is expected that the building of the Guangdong-Macau in-depth cooperation zone in Hengqin would support the economic growth of Macau and the development of enterprises, which in turn increase the demand for IT solutions in Macau.

Market Challenges

Rising labour wages — Labour wages are the major cost items in innovation and maintenance of IT solutions. The rising costs of staff in the IT industry in Macau, which attributable to the growing competition for talent, has led to higher operation cost. Together with the strong outlook of Macau IT solutions industry and the difficulty of talent recruitment and retention, particularly for local talent, the mismatch between demand and supply of IT professionals would further increase the labour wages. As salaries rise, the results of operations will be materially and adversely affected if IT solutions providers are not able to increase revenue correspondingly to offset higher cost.

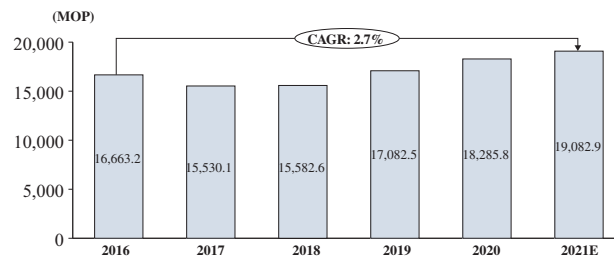
Increased competition arising from rapid technological change — The IT solutions industry is highlighted by rapid technological innovation, evolving industry standard and short product life cycle, and changing client requirements. Accordingly, response to rapidly changing technologies and continual improvement of market know-how is the key competition focus. Failure to catch up with industry trends would render the services to be obsolete and uncompetitive. Increased competition is seen in the IT solutions industry in Greater Bay Area and Macau.

Cost Analysis

The IT solutions industry has a relatively younger target audience and shorter product life-cycle, which makes the market more competitive and ever-evolving. The core competency of market participants lies in their research and development capability to create products that can lead the market or to keep up with the current trend. Human capital is the driving engine behind the research and development progress of an IT solution company, thus employee compensation is used as a critical factor to evaluate the cost structure of the IT solutions market. The average monthly salary of employees in IT solutions industry in Macau grew from MOP16,663.2 in 2016 to MOP19,082.9 in 2021 at a CAGR of 2.7%.

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Average Monthly Salary of Employees in IT Solutions Industry (Macau), 2016-2021E

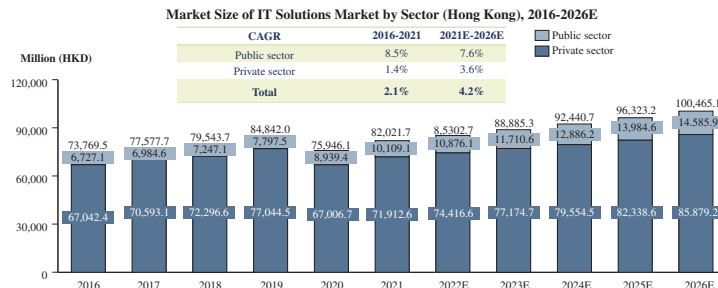


Source: DSEC, Frost & Sullivan

Market Size of Hong Kong IT Solutions Market by Sector

Driven by the technological advancements and continuous investment from both public and private sectors, IT solutions market in Hong Kong rose at a CAGR of approximately 2.1%, from HK\$73,769.5 million in 2016 to HK\$82,021.7 million in 2021. Public sector recorded a significant growth at a CAGR of approximately 8.5% from 2016 to 2021, primarily driven by the increasing government expenditure in information and communications technology and initiatives such as the “Smart City Blueprint”. Similarly, private sector rose steadily from HK\$67,042.4 million in 2016 to HK\$71,912.6 million in 2021, representing a CAGR of approximately 1.4%.

It is estimated that both public sector and private sector will grow continuously from 2022 to 2026, with the development of 5G technology, cloud computing and AI, and the cooperation among market participants in the Greater Bay Area. Accordingly, public sector and private sector are estimated to attain CAGRs of approximately 7.6% and 3.6% respectively from 2022 to 2026.



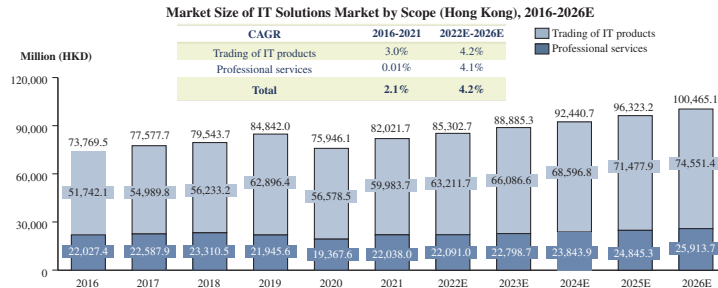
Source: Frost & Sullivan

Market Size of Hong Kong IT Solutions Market by Scope

Trading of IT products grew steadily from HK\$51,742.1 million in 2016 to HK\$59,983.7 million in 2021, representing a CAGR of approximately 2.1%. Despite a slight decline in 2019 due to the social unrest in Hong Kong, professional services, including IT infrastructure and system, managed services, IT maintenance and consultancy services, have witnessed an overall growth from HK\$22,027.4 million in 2016 to HK\$21,945.6 million in 2019.

Due to the outbreak of COVID-19, both trading activities and enterprise IT solutions have experienced temporary disruptions and fell to HK\$56,578.5 million and HK\$19,367.6 million respectively by the end of 2020. However, supported by the strong demand for digitalisation and technological advancement, trading of IT products and enterprise IT solutions are forecasted to rise at CAGRs of approximately 4.2% and 4.1% respectively from 2022 to 2026, reaching HK\$74,551.4 million and HK\$25,913.7 million in 2026.

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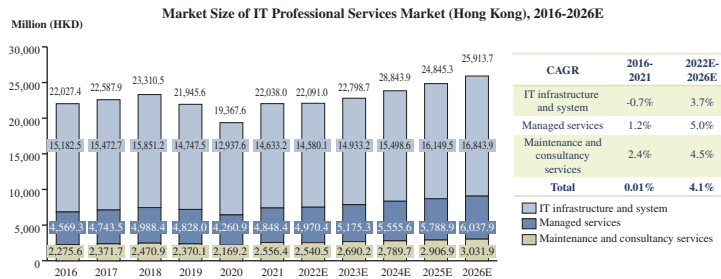


Source: Frost & Sullivan

Market Size of Enterprise IT Solutions in Hong Kong

With a relatively higher adoption and demand of digitalisation and IT in business activities, the enterprise IT solutions market is mainly driven by the development of managed services and IT maintenance and consultancy services. From 2016 to 2021, managed services and IT maintenance and consultancy services has achieved CAGRs of approximately 1.2% and 2.4% respectively, attaining HK\$4,848.4 million and HK\$2,556.4 million respectively in 2021.

Despite the temporary impact of COVID-19 in 2020, the demand for enterprise IT solutions is expected to grow steadily during the period from 2022 to 2026. Professional IT services managed services and IT maintenance and consultancy services are projected to achieve HK\$16,843.9 million, HK\$6,037.9 million and HK\$3,031.9 million respectively by the end of 2026, representing CAGRs of approximately 3.7%, 5.0% and 4.5% respectively from 2022 to 2026.



Source: Frost & Sullivan

COMPETITIVE LANDSCAPE OF IT SOLUTIONS MARKET IN MACAU

Overview of competition

The IT solutions market in Macau is competitive, with approximately 200 market participants in 2021. The IT solutions market in Macau is relatively concentrated with the top five players contributing to approximately 76.3% of the entire market in terms of revenue. The Group recorded the revenue of approximately MOP417.6 million for the provision of IT solutions, accounting for approximately 25.8% of the market share in Macau.

Engaged in both provision of enterprise IT solutions and distribution and resale of hardware and software, the Group is able to distinguish itself from other IT solution providers who only provide logistics services for the distribution of IT products or only provide enterprise IT solutions services. The in-depth knowledge of the industry and technicalities on the vendors’ products as well as experience in the local market allows the Group (i) to help the vendors to penetrate the local market; (ii) to assure the customer’s understanding about the products; (iii) to be at the better position to collect customers’ requirements and provide customised and total solutions.

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Ranking and market share of IT solutions market by revenue (Macau), 2021

Rank	Market participant	Listing status	Estimated revenue in 2021 (MOP million)	Estimated market share in 2021 (%)
1	The Group	Private	417.6	25.8%
2	NetCraft Information Technology (Macau) Co. Ltd	Private	295.5	18.3%
3	Mega DataTech Ltd	Subsidiary of a Listed Company (8033.HK)	185.2	11.4%
4	China Telecom Corporation Limited	Listed (0728.HK)	182.3	11.3%
5	JOS Macau	Subsidiary of a Listed Company (1310.HK)	154.4	9.5%
Subtotal			1,235.0	76.3%
<i>Total</i>			1,618.5	100%

Notes:

- (i) NetCraft Information Technology (Macau) Co. Ltd is an IT solution provider in Macau, specializing in offering corporate solutions from the areas of network infrastructure and information security.
- (ii) Mega DataTech Ltd is a system Integration services providers in Macau.
- (iii) China Telecom Corporation Limited is an integrated intelligent information services operator in the world, providing wire line & mobile telecommunications services, Internet access services, information services and other value-added telecommunications services primarily in the PRC.
- (iv) JOS Macau is an IT solutions providers in Macau, with a focus on installation and implementation, hardware and system maintenance and managed services.

Source: Frost & Sullivan

Factors of competition

Talent acquisition and management — Talents in a company determine its product development capability and thus how well the company can differentiate itself from the market competitors. A successful factor of the IT solutions industry lies in the recruitment of best-in-class talents who can create innovative solution to lead the market. With the enhanced mobility of labour force and the intense demand for top talents, it is also important for companies to manage and retain the talents they have recruited. This can be done by providing favourable employment terms and creating an embracing culture to attract the talents.

Investment and funding securement — IT solutions industry is rapidly evolving market and the short life cycle of products created intense competition on the R&D capability of companies. Maintaining market position, companies will need to invest continuously to create innovative products and upgrade it’s hardware for better solution provision. While allocating sufficient resources on R&D at company’s own cost may not be possible, there are various approaches to capture funding, such as PE and angel investors, bank financing and government subsidies. Successful companies are often able to leverage external capital resources.

Agility and market responsiveness — Innovation is the cornerstone of IT solutions industry. Market leaders are often companies that can create novel products to change market paradigm; on the contrary, companies that fail to keep up with the technology will be eliminated from the free market. Agility to response to market changes is thus a key success factor to surviving in the IT solutions industry. This may require companies monitor closely change in service demand of customers and continuously upgrade their solution.

Integration to bigger initiatives — The world is more connected due to globalisation and business operation is no longer fixed to the market where the company has operation in. Increased partnership and collaboration between international and local players also enhance accessibility of company to different economy and reduce the barrier of not having sufficient understanding of local demand. Expanding consumer base and potential revenue, companies will need to create products for bigger market and participate in government-initiated developmental plan, such as the greater bay area initiatives.

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Entry barriers

Talent acquisition and retention — The IT solution industry relies heavily on talents that can create value and products innovative solution to strengthen product development capability of a company. Larger companies often provide better employment package, more back up support as well as promising career prospect and development opportunity to attract and retain talents. They also allocate sufficient resources to culture talents with high loyalty and better fit the needs of the company. Start-up of the IT solution industry may face difficulty in forming and maintaining their team of talent, thus has a relatively weaker product development capability and could be slower in market response and product creation progress. With the high cost of talent development especially in highly technical industry, cultivating own talents may not be cost-effective approach to smaller companies as well. Talent acquisition and retention are thus the entry barrier in the IT solution industry. Apart from industry nature that poses new market entrance, regional difference also plays a role in recruiting talents. In a globalised market and the enhanced mobility of talent, companies are not only competing with market leaders within the local market, but also internal players in distance market. High personal income tax and lower salary make it more difficult for new companies in Macau to recruit top talents around the world.

Access to capital investment — Capital is the fuel to business growth, particularly the R&D focused IT solution industry. There are various way companies can have access to finance, including company’s own capital, PE and VC funds, bank financing, government subsidies and crowd-funding platforms, each poses different barriers for funding application. Start-up companies could be harder to secure capital funding from investors and banks as they lack a track record and credibility for profitable return. An alternative approach to PE and VC funding is equity crowd-funding. However, there might be issues related to the use of platform, such as regulatory compliance, accessibility and acceptance of people as well as intellectual property. Equality crowd-funding thus remain a minor source of funding nowadays. Difficulty in securing sustainable funding for daily business operation and R&D capability enhancement poses entrance barrier to IT solution companies.

COMPETITIVE LANDSCAPE OF IT SOLUTIONS MARKET IN HONG KONG

Overview of competition

The IT solutions market in Hong Kong is considered highly competitive and fragmented with over 1,000 establishments of various scales in 2021. The market in Hong Kong is shared by telecommunication companies, international vendors and other local IT solutions providers. The Group recorded revenue of approximately HK\$128.6 million in Hong Kong for the year ended 31 December 2021, representing a 0.2% share of the total industry revenue.

The development of IT solutions in Hong Kong is underpinned by innovative startups that may have the potential of transforming traditional products and business processes as well as the emergence of new market players in various industries, including telecommunication firms and Internet portals. At the same time, existing institutions in traditional industries are proactively pursuing the application of information and technology to enhance efficiency of their service delivery and bring benefits to consumers and enterprises.

The leading IT solutions providers generally enter strategic partnerships with the hardware manufacturers and software developers, thus enjoying flexibility in product selections and technical support.

Factors of competition

Flexible business model — In general, the competition in the IT solutions industry is highly vigorous, primarily due to the ever-changing market environment, ongoing technological innovation and various customers requirements. The IT solutions providers, therefore, have to keep abreast of the market pace and constantly formulate the strategies in business development and operational mode to sustain the market leadership.

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System compatibility and customisation — In addition, the capabilities of IT solutions to realise compatibility and support customisation is another competition focus. Customers usually request their systems to be compatible with other systems, and integrated platforms are in high demand. Together with consulting, technical and support, and managed services, efficiency of the IT infrastructure would be optimised.

Market know-how — Technical knowledge is taking more and more important role in the IT solutions industry, from design, building and integration to technical support. Technical knowledge, therefore, is highly preferred by the customers who optimise the IT resources to capitalise the chances arising from technological innovation.

Entry Barriers

Expertise and Knowledge — IT solutions are usually customised to meet specific needs. Understanding of clients requirements and technical knowledge are required to maintain the competitiveness. It takes time and effort for the new market entrants to accumulate market know-how of the target client groups. IT solutions providers with proven track record and expertise are preferred by the clients. Industry expertise, therefore, act as a major barrier for entry.

Brand awareness — Brand awareness among customers is another entry barrier in the IT solutions industry. The leading market participants have established reputation by timely delivery and quality of services. These well-know brands have become first choices for the clients, especially large corporations, when it comes to procurement of hardware equipment and software services. New market entrants who have limited market penetration and brand recognition might find it difficult to acquire clients.

Strategic Partnership — IT solutions providers are required to source various types of products from hardware manufacturers and software developers. The leading IT solutions providers generally enter strategic partnerships with the hardware manufacturers and software developers, thus enjoying flexibility in product selections, timely technical support and favourable credit terms. Strategic partnership with hardware manufacturers and software developers is the indistinguishable asset in the IT solutions industry in Hong Kong.

OVERVIEW OF IT SOLUTIONS MARKET IN NANSHA AND HENGQIN

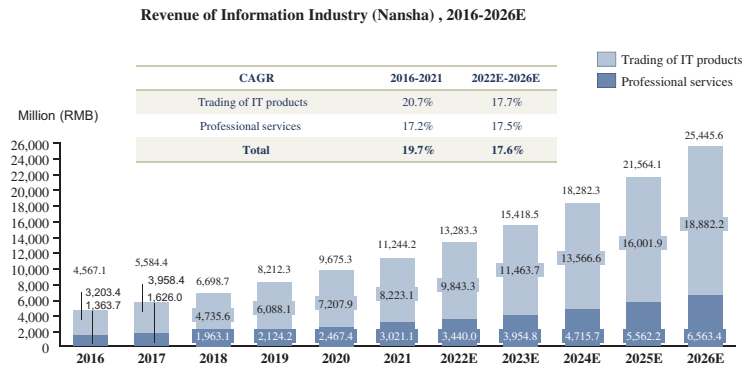
Overview of competition in Nansha and Hengqin

Revenue of information industry in Nansha increased from RMB4,567.1 million in 2016 to RMB11,244.2 million in 2021, at a CAGR of 19.7%. Located at the center of the Greater Bay Area, the Nansha New Area in Guangzhou plays an essential role to boost innovation and technology industry in the area, as well as deepen cooperation between Guangdong and Hong Kong and Macau to jointly develop logistics, tourism, financial-leasing and cross-border e-commerce industries in the years ahead. The establishment of Greater Bay Area has translated into growth opportunities for Nansha and the demand for IT solutions in Nansha.

The Nansha free trade zone is also Guangdong’s gateway in participating in the construction of the Belt and Road Initiative promoting technology innovation, advanced manufacturing, international trades, shipping logistics and marine manufacturing. In particular, the supportive policies of the free trade zone status of Nansha include pilot financial reform and innovation: a one-off cash award of RMB20 million will be given to those newly recognized the world’s top 500 enterprise or RMB10 million to those recognised the global top 1,000 enterprises or China’s top 500 enterprises. Up to RMB5 million of subsidy will be given to those being listed in any market in the PRC or overseas. Financial support will also be available to financial leasing enterprises in carrying out business in fields of aircrafts, vessels, vehicles and real estates. With the promotion of free trade zone, revenue of information industry in Nansha is expected to increase from RMB13,283.3 million in 2022 to RMB25,445.6 million in 2026 at a CAGR of 17.6%.

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According to the Development and Reform Bureau of Nansha District, as the operational plan for the “siege of cities and villages” in Nansha District and the annual “construction drawing” for the “14th Five-Year Plan” construction, this plan involves a total of 202 key projects with a total investment of RMB626.5 billion, with an annual planned investment of RMB91.1 billion. In Nansha, 59 major infrastructure projects are scheduled in 2021, involving a total investment of RMB266.2 billion and an annual investment of RMB27.4 billion. The projects include the construction of a three-dimensional transportation network with high-speed rail, intercity, subway, and high-speed roads as the main body, plan to build Metro Line 18 (the first section), and promote major transportation infrastructure such as the Guangzhou section of the Shenzhen-Mao Railway and the Wanqingsha branch of the Shenzhen-Zhongshan Passage.



Source: Frost & Sullivan

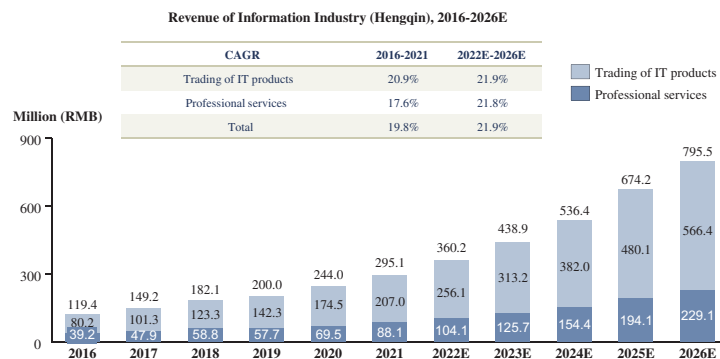
Hengqin is developing tourism, leisure, healthcare, commercial and financial services, culture, science, education, and hi-tech industries. It is a cultural and educational opening-up pilot zone and international business, service, recreational, and travel base. The free trade zone also advocates Macau’s economic diversification through non-gaming elements and strengthened regional cooperation. In 2020, supportive government policies are also launched to promote the growth information and technology industry, particularly artificial intelligence industry. Comprehensive assistance is provided in computing power, acquisition, purchasing, loan interest rates and applications, while capital and project matchmaking and market promotion services are also made available. A repository will be established for dynamic tracking of local AI enterprises in Hengqin. Under the supportive policies, AI enterprises may use the Hengqin Advanced Intelligent Computing Center, which has a computing power of up to 1.16 exa-operations per second (Eops). The center is open to the public for free throughout Oct 1 and after that local enterprises and institutions will receive a 50 percent discount and be subsidized half of any expenditure. This greatly reduces the high costs AI enterprises face for computing power. These supportive government policies would promote the AI industry and translate into growth opportunities for the related IT solutions. The revenue of Information Industry in Hengqin increased from RMB119.4 million in 2016 to RMB295.1 million in 2021, at a CAGR of 19.8%.

Hengqin is located at the entrance of the Greater Bay Area and the only place that is connected with the HK-Macau Road and the HK-Zhuhai-Macau Bridge at the same time. The development of Hengqin also represents the opportunity to promote Macau’s diversified economic development. To seize the opportunity of development, many enterprises have set up their offices in Hengqin. In particular, Alibaba and Zhuhai Hengqin New District reached strategic cooperation, and Alibaba Cloud helped build Hengqin Smart Island. Up to 2019, 45 Fortune 500 companies and 73 companies from the China Fortune 500 have settled in Hengqin, with a total investment of over RMB500 billion. Macau and Hengqin are increasingly integrated with many Macau enterprises, hotels, and government agencies launching expansion projects in Hengqin. In 2020, the Macau Trade and Investment Promotion Institute (IPIM) has received numerous applications recently from Macau enterprises for their development in Hengqin, covering comprehensive development,

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science and technology, and other projects, of which the investment is about RMB400 billion. This new development of Hengqin will create huge market demand for IT solutions. Digital-based experience is the crucial part of urban development infrastructure and serves as the key factor in attracting tourists. To enhance visitors’ digital experience, enterprises, and hotels in Hengqin New District would increase investment in IT infrastructure and digital services, which in turn drive the demand for IT solutions. The revenue of Information Industry in Hengqin is expected to reach RMB795.5 million in 2026, at a CAGR of 21.9% from 2022 to 2026.

In 2020, the number of qualified construction contractors in Zhuhai amounts to 510, at an annual growth rate of 26.6% and the gross value-added of the construction industry in the Zhuhai reaches RMB24.7 billion, at an annual growth rate of 8.9%. In 2020, the number of newly started construction projects in Zhuhai is 241, with investment of RMB91.6 billion. In 2020, the total investment of major construction projects in Zhuhai amounts to RMB195.6 billion. In particular, the investment of construction of Posto Fronteiriço de Hengqin and Integrated Transport Hub is RMB26.1 billion and it is expected to be completed by 2024. In addition, the investment in Hengqin Science City (Phrase 1) is RMB17.4 billion and is expected to be completed by 2022.



Source: Frost & Sullivan

COMPETITIVE LANDSCAPE OF IT SOLUTIONS MARKET IN NANSHA AND HENGQIN

As of 2021, there are a total number of over 4,000 market participants in the IT solutions industry in Greater Bay Area. With the large number of market participants in the industry, the overall IT solutions market is considered to be highly competitive and fragmented. The top players in the market are primarily Chinese multinational conglomerate which offer technology-based products and services covering all or most of the sectors and applications. With smaller scale and less resources, smaller market players tend to focus their resources on a particular segment in the supply chain and often become one of the subcontractors for the major market players in the industry.

With the growing demand from technology and high-end manufacturing, traditional Chinese medicine, tourism and MICE, and finance, the IT solutions industry in Hengqin is expected to grow accordingly and the number of IT solutions providers in Hengqin would increase accordingly. The preferential tax treatment for enterprises those are conducive to Macau’s economic diversification would increase the number of Macau-based enterprises in Hengqin. Going forward, the Macau-based IT solutions providers who have established relationship with those Macau-based enterprises would further expand their presence to Hengqin. The IT industry in Hengqin is expected to be increasingly competitive.

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The major market participants in Greater Bay Area usually have the coverage in Nansha and Hengqin. As estimated, there are over 500 market participants in Nansha and over 100 market participants in Hengqin. As estimated, the IT solutions market in Nansha and Hengqin account for approximately 0.9% and 0.02% of the overall Greater Bay Area market in terms of revenue.

Market share of IT solutions market by revenue (Nansha), 2021

Market participant	Estimated market share in 2021 (%)
廣州軟通動力信息技術有限公司	3.2%
廣東新禾道信息科技有限公司	2.6%
廣東遠大系統集成有限公司	2.1%

Notes:

- (i) 廣州軟通動力信息技術有限公司 is a software and IT services provider in Guangzhou, with offices in Changsha, Shenzhen and Foshan.
- (ii) 廣東新禾道信息科技有限公司 is a system integration services providers in Guangzhou, specializing in cloud computing, IoT and big data.
- (iii) 廣東遠大系統集成有限公司 is an IT solutions providers in Guangzhou, with a focus on implementation and system maintenance.

Market share of IT solutions market by revenue (Hengqin), 2021

Market participant	Estimated market share in 2021 (%)
珠海港信息技術股份有限公司	5.0%
珠海易雲科技有限公司	3.6%
珠海夢科軟件系統集成有限公司	2.9%

Notes:

- (i) 珠海港信息技術股份有限公司 is an IT services provider in Zhuhai, engaged in the provision of software development, system integration and consulting services.
- (ii) 珠海易雲科技有限公司 is an IT services providers in Zhuhai, with the focus on cyber security.
- (iii) 珠海夢科軟件系統集成有限公司 is a IT service providers in Zhuhai, specialising in enterprise management and e-commerce.

DIRECTORS' CONFIRMATION

Our Directors, after due and reasonable consideration, are of the view that there has been no adverse change in the market information since the date of the Frost & Sullivan Report which may qualify, contradict or have an impact on the information therein.