
INDUSTRY OVERVIEW

The information that appears in this section has been prepared by Frost & Sullivan and reflects its estimate of market condition based on publicly available sources and trade opinion surveys, and is prepared primarily as a market research tool. References to Frost & Sullivan should not be considered as the opinion of Frost & Sullivan as to the value of any security or the advisability of investing in the Company. Our Directors believe that the sources of information contained in this section are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. Our Directors have no reason to believe that such information is false or misleading or that any material fact has been omitted that would render such information false or misleading.

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Our Group had commissioned Frost & Sullivan to provide information on the global electronics market and the electronics manufacturing service market in the PRC. We had agreed to pay a fee of RMB560,000 to Frost & Sullivan for the report. Our Directors are of the view that the payment does not affect the fairness of the views and conclusions presented in the Frost & Sullivan Report, company reports, independent research reports and data based on its own research database.

RESEARCH METHODOLOGY

In compiling and preparing the Frost & Sullivan Report, Frost & Sullivan conducted primary research including interviews with industry experts and participants and secondary research which involved reviewing the statistics published by the government official statistics, industry publications, annual reports and data based on its own database. Frost & Sullivan presented the figures for various market size projections from historical data analysis plotted against macroeconomic data, as well as data with respect to the related industry drivers and integration of expert opinions. Frost & Sullivan assumed that in the PRC: (1) the economy is likely to maintain steady growth in the next decade; (2) the social, economic and political environment is likely to remain stable in the forecast period, which ensures the stable and healthy development of electronics manufacturing service industry; and (3) there will be no wars or large scale disasters during the forecast period.

ABOUT FROST & SULLIVAN

Frost & Sullivan is an independent global consulting firm founded in 1961. It offers industry research, market strategies and provides growth consulting and corporate training in various industries. The Frost & Sullivan Report includes information on data of the global electronic products market and the PRC electronics manufacturing service market.

OVERVIEW OF ELECTRONIC PRODUCTS MARKET IN THE PRC

Definition and Classification of Electronic Products

An electronic product is a manufactured or assembled product which contains or functions as part of an electronic circuit. According to various application areas, electronic products can be categorized as following:

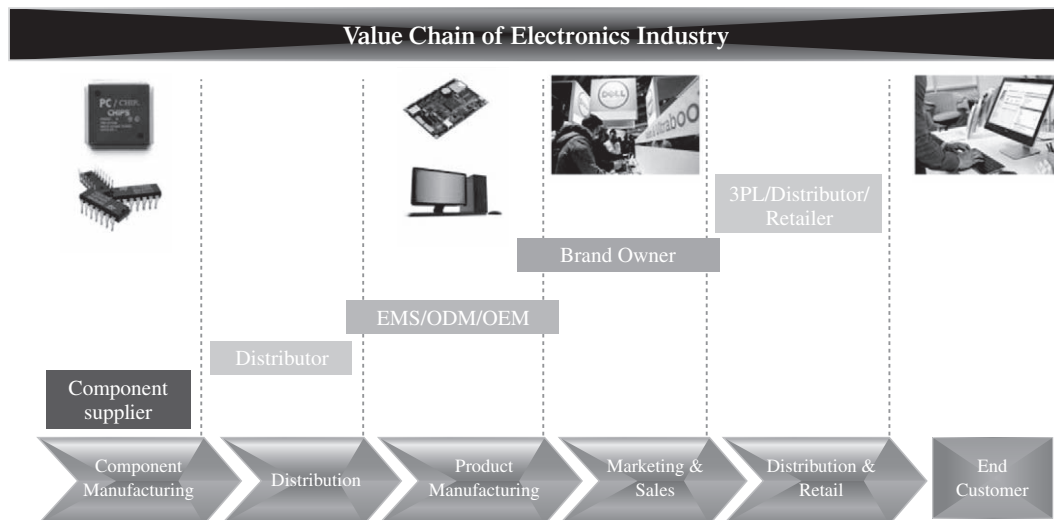
- *Computer and storage:* Computer and storage products generally include computers and related accessories and parts such as keyboards, mice, storage devices, and etc.
- *Telecommunications:* Telecommunication products generally refer to various devices that enable communication between different parties over distance, such as mobile phones, telephones, radios, transmission equipment, and etc.
- *Automotive electronics:* Automotive electronics refer to electrically-driven components used in vehicles and are generally categorized into four systems, namely body control system, power-train system, safety system and infotainment system.
- *Consumer electronics:* Consumer electronics refer to electronic products intended for purchase and use by consumers, rather than for industrial purposes, such as DVDs and MP3 players, stereo components, cameras, smart devices, and etc.

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- **Industrial electronics:** Industrial electronics refer to electronic products intended for industrial use, such as process control systems, analytical instruments, test & measuring instruments, and etc. ATM and mPOS are also included in this category.
- **Medical electronics:** Medical electronics are electronic instruments and equipment used for medical applications such as diagnosis, therapy, research, anesthesia control, cardiac control, surgery, and etc.
- **PV modules:** A photovoltaic (PV) module is a packaged, connect assembly of typically 6x10 photovoltaic solar cells. PV modules constitute the photovoltaic array of a photovoltaic system that generates and supplies solar electricity in commercial and residential applications.

Value Chain of Electronic Products Industry

The electronics industry is generally comprised of three groups of players: brand owners, contract manufacturers and component suppliers. Brand owners subcontract and outsource a considerable amount of their manufacturing activities and use a range of suppliers for parts and components. Contract manufacturers are also classified as electronic manufacturing service providers (EMS), original equipment manufacturers (OEM) and original design manufacturers (ODM), depending on their activities.



Source: Frost & Sullivan

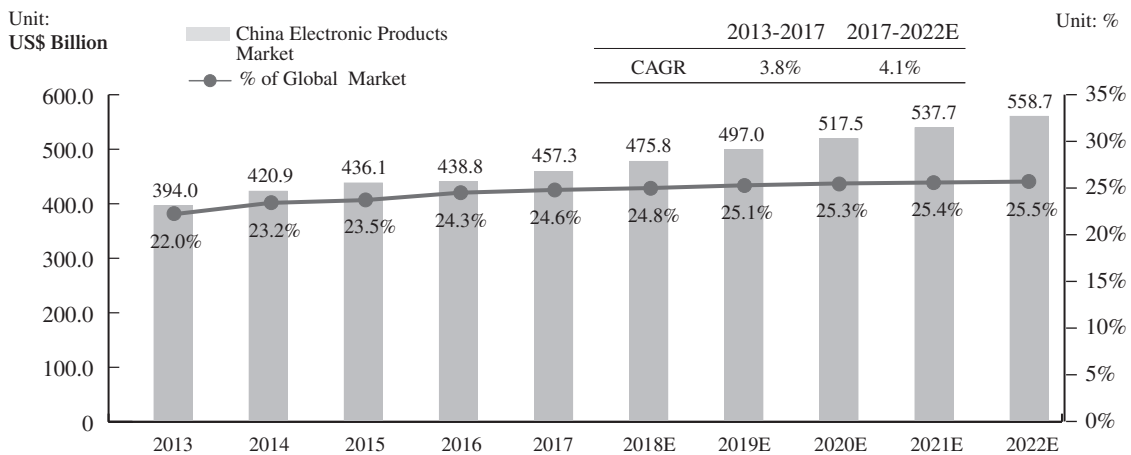
Market Size of Electronic Products Market

China has overtaken the U.S. as the world's largest electronic products market in terms of sales value since 2015. Sales value of electronic products market in China has grown from US\$394.0 billion in 2013 to US\$457.3 billion in 2017 with a CAGR of 3.8%. Meanwhile, the percentage of China's share in global market increased from 22.0% to 24.6% from 2013 to 2017.

It is forecast that sales value of electronics products market in China will reach US\$558.7 billion in 2022 with a CAGR of 4.1% from 2017 to 2022, and till then China will account for 25.5% of the entire global market in terms of sales value.

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Sales Value of Electronic Products Market in China, 2013-2022E



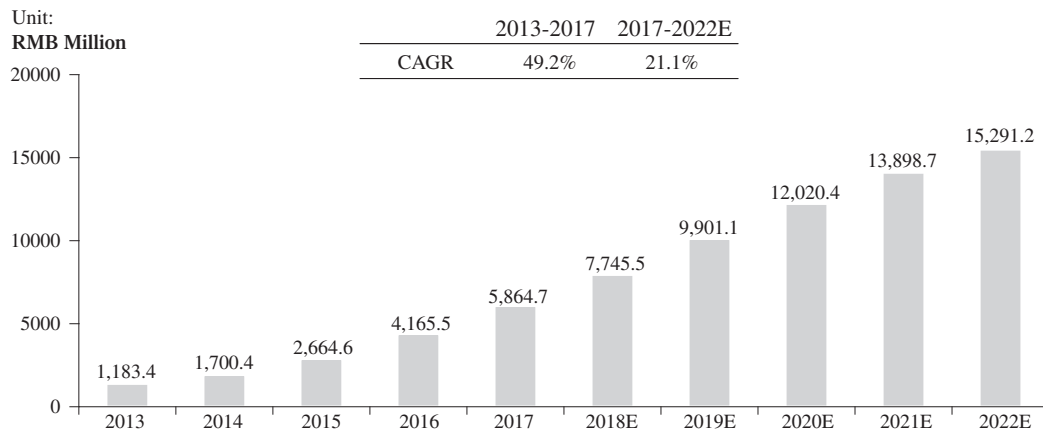
Source: Yearbook of World Electronics Data, Frost & Sullivan

Market Demand Analysis for Selected Electronic Products

mPOS

The sales of mPOS terminal in China had grown to RMB5,864.7 million in 2017, with a CAGR of 49.2% from 2013 to 2017. The market growth is primarily fuelled by the increasing adoption of mPOS solution due to lower cost and convenience, and also driven by government policy (“Notice on Promoting E-commerce Development” (關於推動電子商務發展有關工作的通知) released in 2016). The sales of mPOS terminal in China is expected to reach RMB15,291.2 million in 2022, representing a CAGR of 21.1% from 2017 to 2022.

Sales of mPOS Terminal in China, 2013-2022E



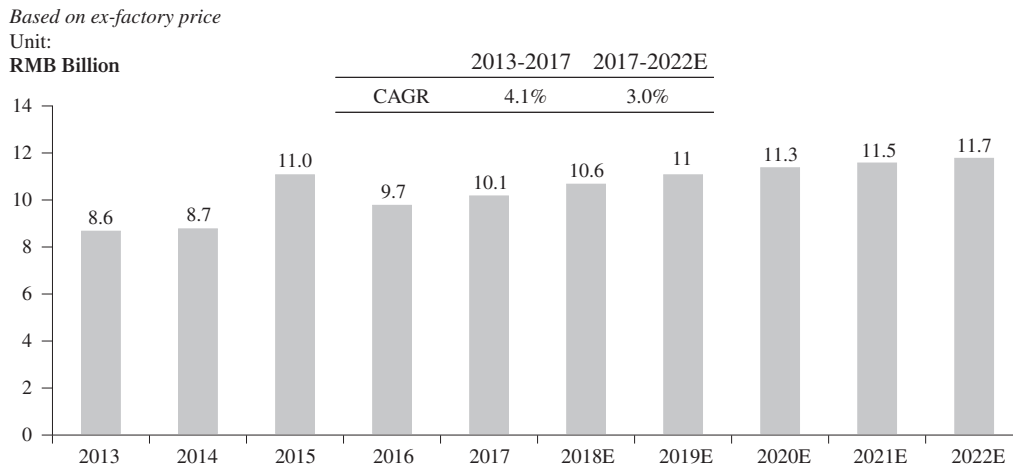
Source: Frost & Sullivan

ATMs

The sales of ATMs in China has experienced a stable growth during the period from RMB8.6 billion in 2013 to RMB10.1 billion in 2017, representing a CAGR of 4.1% during the period. The PRC ATM markets are expected to grow to RMB11.7 billion in 2022 with a CAGR of 3.0% from 2017 to 2022.

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Sales of ATMs in China, 2013-2022E

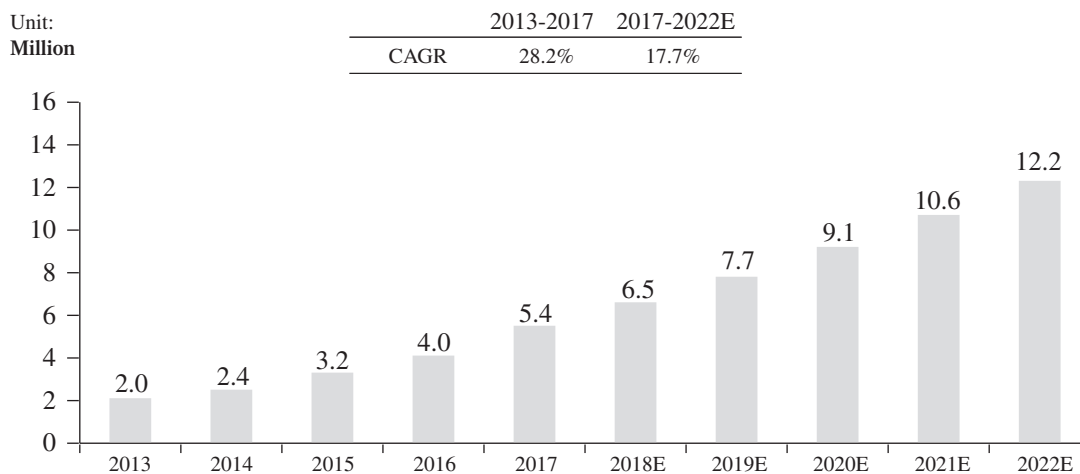


Source: Frost & Sullivan

Sweeping Robots

Nowadays, with the development of technology advancement, more smarter home appliances bring more convenience to people's lives and help people to save time and energy. At present, as consumers' awareness of sweeping robots increases and the technology is increasingly mature, the market demand of sweeping robots gradually increases. The shipment of sweeping robots in China grew from 2.0 million in 2013 to 5.4 million in 2017 at a CAGR of 28.2%. In the next five years, the shipment of sweeping robots in China is estimated to grow at a CAGR of 17.7% to reach 12.2 million by 2022.

Shipment of Sweeping Robots in China, 2013-2022E



Source: Frost & Sullivan

OVERVIEW OF EMS MARKET IN THE PRC

Introduction of EMS

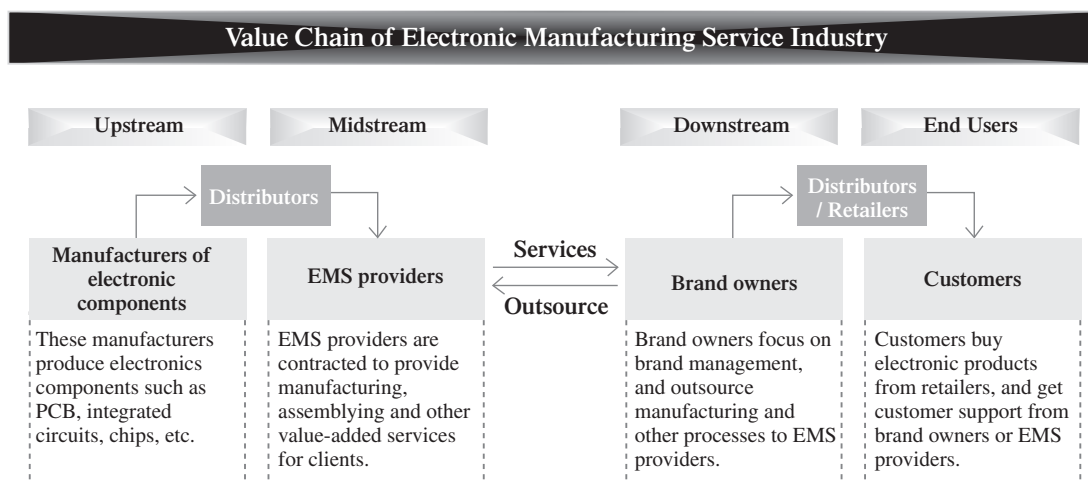
Electronic manufacturing services (EMS) providers are contract manufacturers that offer one-stop and integrated services ranging from product design and development, product manufacturing, supply chain management, logistics, after-sale services and other related services to brand owners. In general, products manufactured by EMS providers are sold under a client's brand name. There are circumstances where customers are the only suppliers of certain raw materials, such as specific models of electronic parts and components. Hence, EMS providers under these circumstances have to purchase such materials from customers, and they have stable supplier base for specific models.

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Introduction of PCBA

Printed Circuit Board (PCB) is the most basic component of the electronic products. Printed Circuit Board Assembly (PCBA) is the process of soldering or assembly of electronic components to a PCB. A circuit board prior to assembly of electronic components is known as PCB. PCBAs are normally sold as stand-alone products to downstream users for onward production of various kinds of electronic products for different industries, including banking and finance, smart devices, telecommunications and new energy devices industries, etc.

Value Chain of EMS Industry



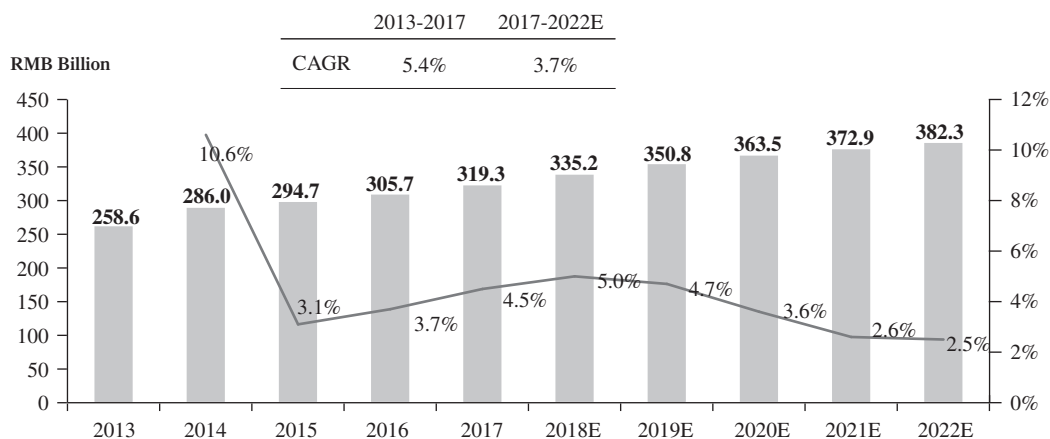
Source: Frost & Sullivan

Market Size of PCBA Industry in the PRC

Supported by government policies such as “Electronic Information Manufacturing 12th Five-year Plan” (電子信息製造業“十二五”發展規劃) released by Ministry of Industry and Information Technology (中國工業和信息化部), the development of cloud computing, Internet of Things and big data industry, and the rising trend of export, the market size of PCBA industry in the PRC experienced an upward trend in general from RMB258.6 billion in 2013 to RMB319.3 billion in 2017 with a CAGR of 5.4%.

With the deepening of China’s informationization construction (信息化建設) and continuously increasing demand from downstream industries, the market size of China PCBA industry by revenue is expected to increase from RMB319.3 billion in 2017 to RMB382.3 billion in 2022 with a CAGR of 3.7%. China PCBA industry is getting increasingly fledged after the rapid development period. China PCBA industry is transmitting its focus from low-end products to high-end products, facing the pressure from reforming dilemma and rising cost.

Market Size of China PCBA Industry by Revenue, 2013-2022E



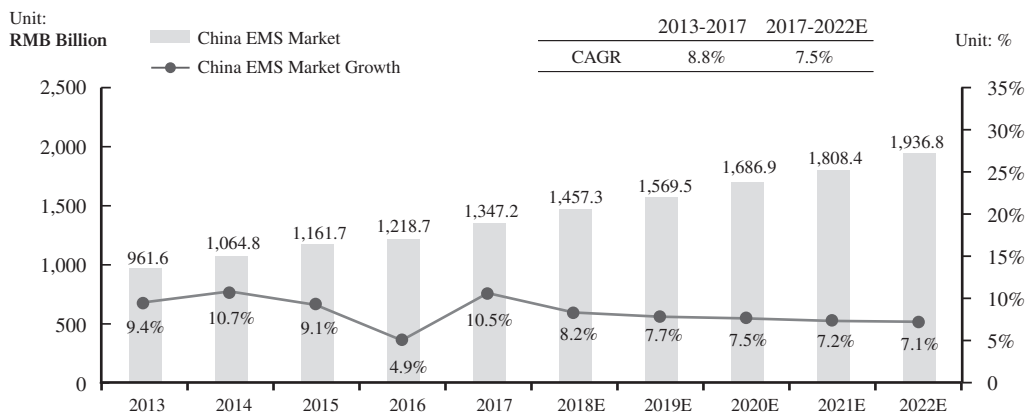
Source: Institute of Printed Circuits, World Electronic Circuits Council, Frost & Sullivan

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Market Size of EMS Industry in the PRC

In recent years, growing demand from players along the value chain of electronic manufacturing service industry and the continuous increasing penetration of EMS have driven the EMS market in China. Sales value of EMS in the PRC has reached RMB1,347.2 billion in 2017, with a CAGR of 8.8% from 2013 to 2017. The accelerated growth of EMS market during 2013 to 2014 is mainly due to the recovery of global electronics market, however, the growth of EMS market experienced a drop in 2016 due to the downturn happened to the global electronics product markets. Going forward, the market size of electronic manufacturing service industry is expected to continue stable growth in the coming years, estimated to reach RMB1,936.8 billion in 2022 at a CAGR of 7.5%. This is mainly attributed to booming domestic demand for electronics products, advances in manufacturing technology, favorable policies and the lift of national planning 'Made in the PRC 2025 (中國製造2025)'. In addition, the offering of more value-added services, such as logistics and supply chain management, would increase service fees charged by EMS providers and hence, the market size continues further growth.

Sales Value of EMS Industry in China, 2013-2022E



Source: Frost & Sullivan

Penetration rate of EMS describes the rate that EMS providers captured as a percentage of electronics cost of goods sold. Based on the increasing acceptance of outsourcing as a viable option for the industry, penetration rate of EMS in global market has kept increasing from 19.8% in 2013 to 21.9% in 2017, and is expected to reach 23.9% in 2022.

Market Driver of EMS Industry

Thriving demand in global electronic products market will encourage EMS growth: High demand from computer and storage, telecommunications, consumer electronics, automotive electronics, and military and aerospace fuels the EMS market in the PRC with great growth opportunities. The continuously expanding market of electronics industry indicates tremendous demand for electronic manufacturing services, therefore, electronic manufacturing service market will keep a sustained and steady growth.

Penetration of EMS will continue to increase: Electronic products continue to face challenges of shorter product lifecycles, fluctuating demand cycles, increasing pressures on quality, and line changeovers. To reduce cost, ensure product quality and stay ahead of innovation curve, brand owners will further rely on EMS providers in product design, manufacturing, supply chain management, and etc. As a result, the EMS market will keep a strong momentum with the increasing penetration of EMS.

Growing capabilities of EMS providers: To provide quality products and services to their customers, EMS providers have constantly ramped up their manufacturing capabilities, procurement power and global network. In addition, EMS providers have also enhanced their design capabilities to provide higher-margin design services. The growing capabilities of EMS providers will raise the reliance of brand owners on outsourcing, and drive up the growth of EMS market.

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The PRC government's policies encourage market growth: In 13th Five-year Plan (十三五規劃) and Made in the PRC 2025 (中國製造2025), the PRC government has emphasized on the importance of improving the innovation capabilities of manufacturing industries, and encourage investment in high-tech manufacturing industries such as new generation information technology, robotics, aerospace and renewable energy. These favourable policies will facilitate the development of electronic manufacturing industry in the PRC, and thus boost the growth of EMS market.

Offering of more value-added services encourages market growth: Since OEMs could free themselves to focus on core competencies, they increasingly outsource supply management to EMS providers. With effective supply management and logistics, EMS providers charge higher service fees for OEMs, and hence further increase the market size. In addition, repair and maintenance services for electronic components are also provided by EMS providers, and more revenues are generated accordingly.

Market Trends of EMS Industry

Increasing consolidation and reorganization in the EMS industry: Profit margins have been further challenged by increasing price pressures from brand owners and overall price sensitivity of the electronics industry. Many companies have been forced to consolidate, reorganized, and exit less profitable markets in an attempt to remain viable. Competitive EMS providers have looked to improve internal manufacturing and operation for cost savings, and EMS providers that are unable to keep up with new advances face the threat of becoming obsolete.

Smart factories and increased automation are becoming common in the EMS market: Many EMS providers are automating and using robotics to lower labor costs and to create smart factories. Increasing automation will also support the hybrid regionalization strategy that will encourage EMS providers to return to a manufacturing model based on proximity to customers, as opposed to seeking low-cost manufacturing solutions.

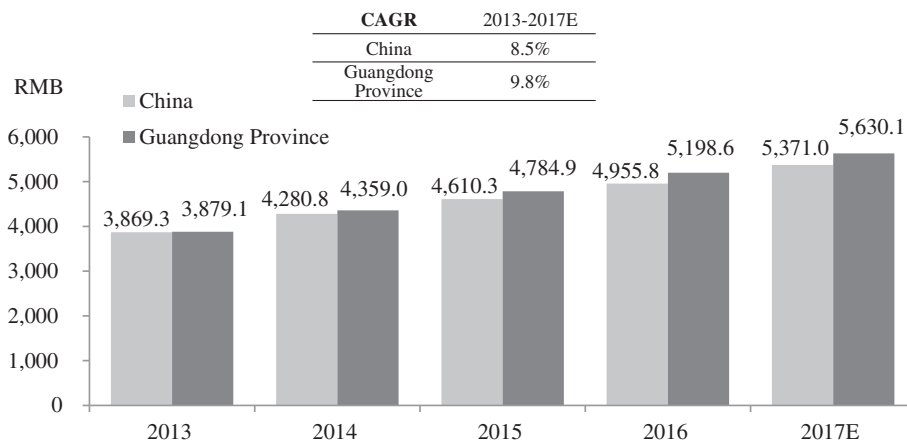
Shift toward integrated services provider: EMS providers are seeking increased penetration and responsibilities in design and new product introduction support. To differentiate from competitors, EMS providers should demonstrate their capabilities in offering integrated solutions which include supply chain management, inventory control, product lifecycle management, and etc. The focus in coming years will be on new manufacturing partnerships capable of providing competitive product/service value that goes beyond cheaper, faster, and simpler, and addresses a broader customer base.

Historical Price Trend of Wages of Manufacturing Workers and Raw Materials

The average monthly wage of employed persons in manufacturing industry in China had increased from RMB3,869.3 in 2013 to RMB5,371.0 in 2017, representing a CAGR of 8.5%. In Guangdong province, it increased from RMB3,879.1 to RMB5,630.1, representing a CAGR of 9.8% from 2013 to 2017.

In general, the increasing wage is attributed to the shortage of labor supply in the manufacturing industry and the effects of economic growth and inflation, and it has resulted in higher operation cost for manufacturers. The average salary of manufacturing workers in Guangdong province was generally higher than the national average.

Average Monthly Wage of Employed Persons in Manufacturing Industry, 2013-2017E

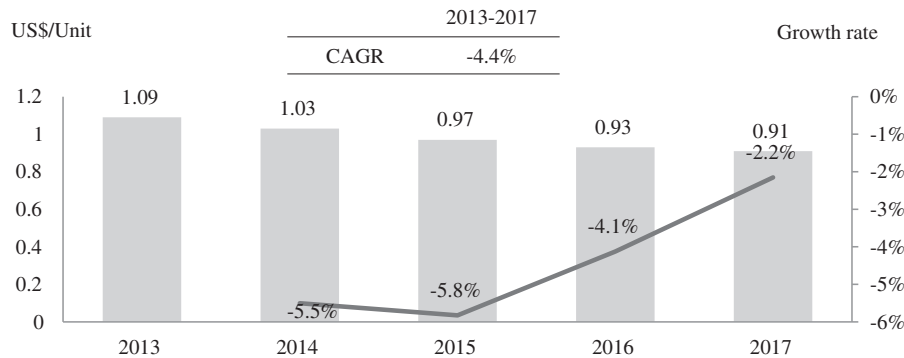


Source: National Bureau of Statistics of PRC, Frost & Sullivan

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The average price of electronic integrated circuits generally stabilized at around US\$0.9/unit to US\$1.1/unit mainly as a result of mature production technology. From 2013 to 2017, the price decreased from US\$1.09/unit to US\$0.91/unit, which was mainly due to the decreasing prices of raw materials and growing competition among manufacturers with new entrants to the market.

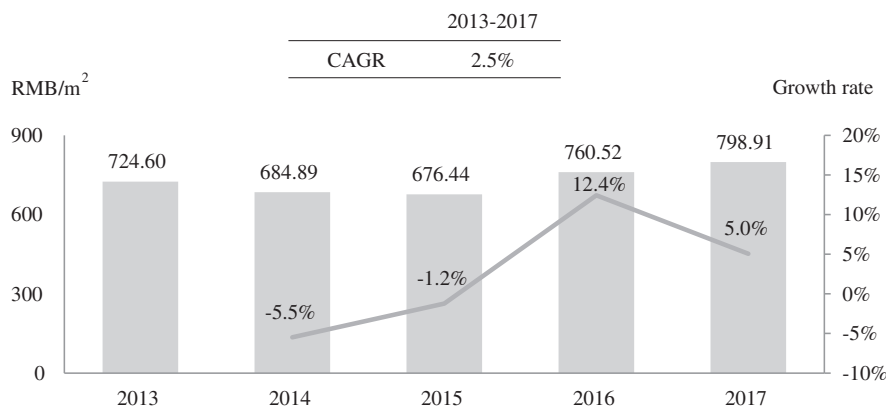
Average Price of Electronic Integrated Circuits, 2013-2017



Source: China Customs, Frost & Sullivan

The price of PCB experienced a downward trend from 2013 to 2015, mainly because of the fierce competition among PCB manufacturers and the decreasing raw material price. However, due to the short supply of copper foil and the rising cost of copper clad laminate, the price of PCB rebounded in 2016, and reached RMB798.91 per m² in 2017.

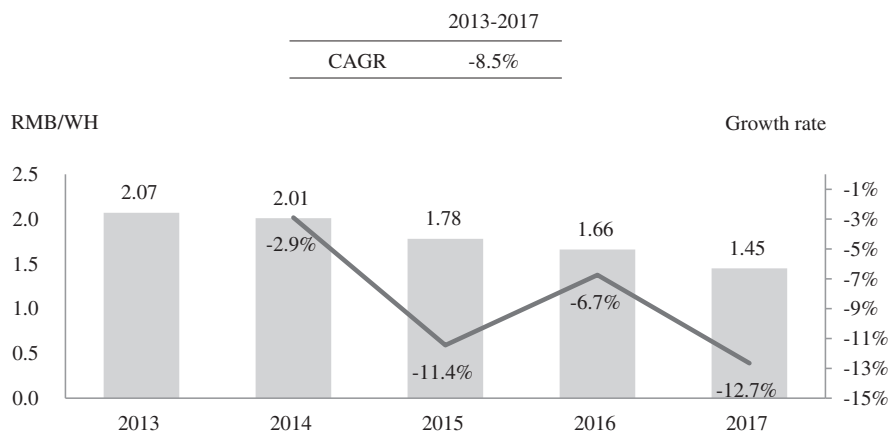
Average Price of PCB, 2013-2017



Source: Frost & Sullivan

Lithium battery is mainly applied in 3C products and automotive power. With the economics of scale, continuously increasing production volume and the slowing growth of downstream market, the price of lithium battery has kept decreased in the past few years from RMB2.07 per WH to RMB1.45 per WH.

Average Price of Lithium Battery, 2013-2017

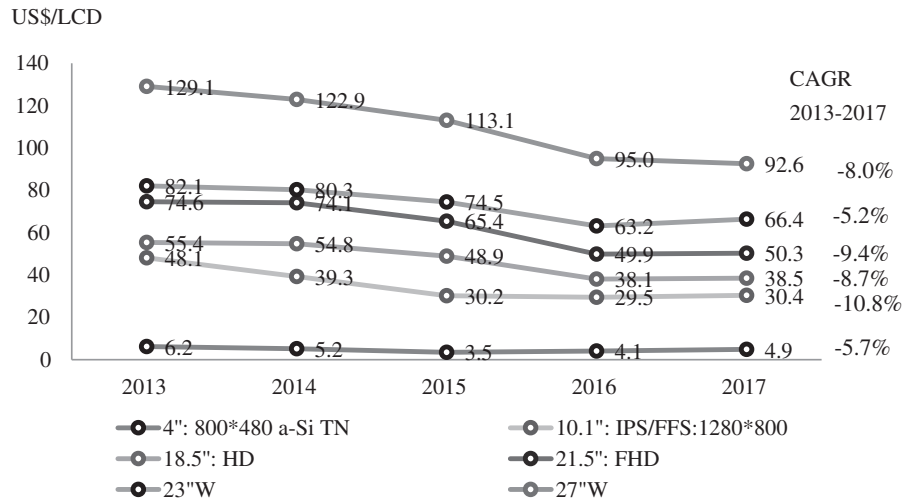


Source: Frost & Sullivan

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LCDs are used in a wide range of applications including computer monitors, televisions, instrument panels, aircraft cockpit displays, and indoor and outdoor signage. The average of price of liquid crystal display has shown a trend of decreasing due to the economics of scale and fierce competition. The following chart sets forth the average price of mainstream series of liquid crystal display.

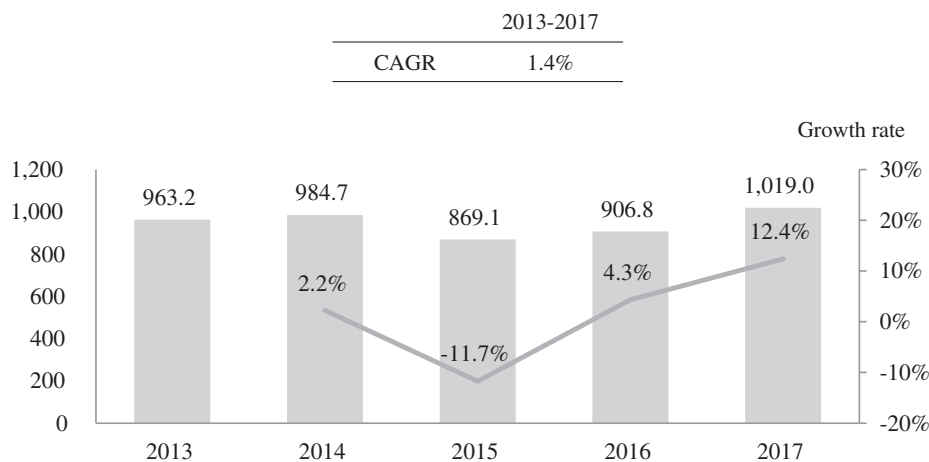
Average Price of Liquid Crystal Display (LCD), 2013-2017



Source: Wind, Frost & Sullivan

China plastic price index (中國塑料價格指數), released by Xinhua News Agency since 2007, is compiled according to the national general plastic market price to indicate the price fluctuations of plastic products in China. The annual average of China plastic price index has decreased from 963.2 in 2013 to 1,019.0 in 2017, representing a CAGR of 1.4% during this period. A notable decrease was seen in 2015, which was resulted from the decreasing prices of crude oil since July 2014, and the over-production in the previous years.

Average of China Plastic Price Index, 2013-2017

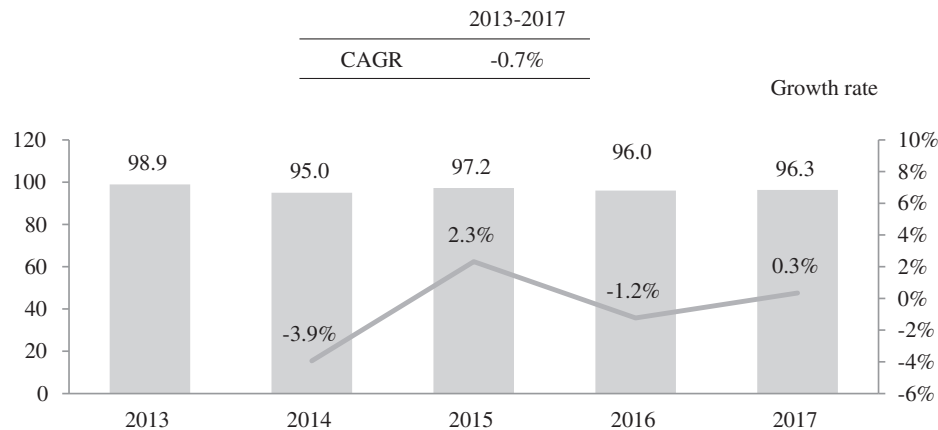


Source: Wind, Frost & Sullivan

Hcsindex — China Electronic Market Price Index ("Hcsindex"), authorized and instructed by Ministry of Information Industry, designs model and collects prices of electronic products on Chinese market to illustrate fluctuations of electronic market prices. The price index (Hcsindex) of electronic components has decreased from 98.9 in 2013 to 96.3 in 2017, representing a CAGR of -0.7% during the indicated period.

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Price Index of Electronic Components, 2013-2017



Source: Wind, Frost & Sullivan

COMPETITIVE LANDSCAPE OF EMS MARKET IN THE PRC

According to the Frost and Sullivan Report, we had a market share of 0.03% in the EMS market in the PRC in terms of revenue in 2017.

Entry Barrier Analysis of EMS Industry

Design and manufacturing capabilities: Due to the rapid advances in technology and faster replacement of electronic products, brand owners require higher design and manufacturing capabilities from EMS companies to provide reliable products that meet the needs from the market.

Contract manufacturer certifications: In order to become the contract manufacturer of large multinational companies, an EMS company usually needs a long period of time for acquiring related certifications in terms of production process, quality management, working environment, and etc. Besides, local EMS plants have to follow the regulatory requirements in the PRC such as Product Quality Law, Work Safety Law, Environmental Protection Law, and etc.

Supply chain management capabilities: An EMS provider usually covers a wide range of business from design, procurement, and manufacturing to logistics and after-sales services in various vertical markets around the globe. Therefore, a fully functioning and efficient supply chain system is necessary to deliver products and services to customers, and the capabilities to manage such complicated supply chain system is a major entry barrier for new EMS companies.

Large capital investment: To meet customers' requirement in terms of manufacturing capabilities, an EMS company has to invest a lot in fixed assets such as the establishment of plants and SMT lines, the purchases of testing and packaging equipment and etc. In addition, EMS company needs sufficient working capital to ensure procurement and daily operation. Therefore, large capital investment is another entry barrier for EMS companies.