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## INDUSTRY OVERVIEW

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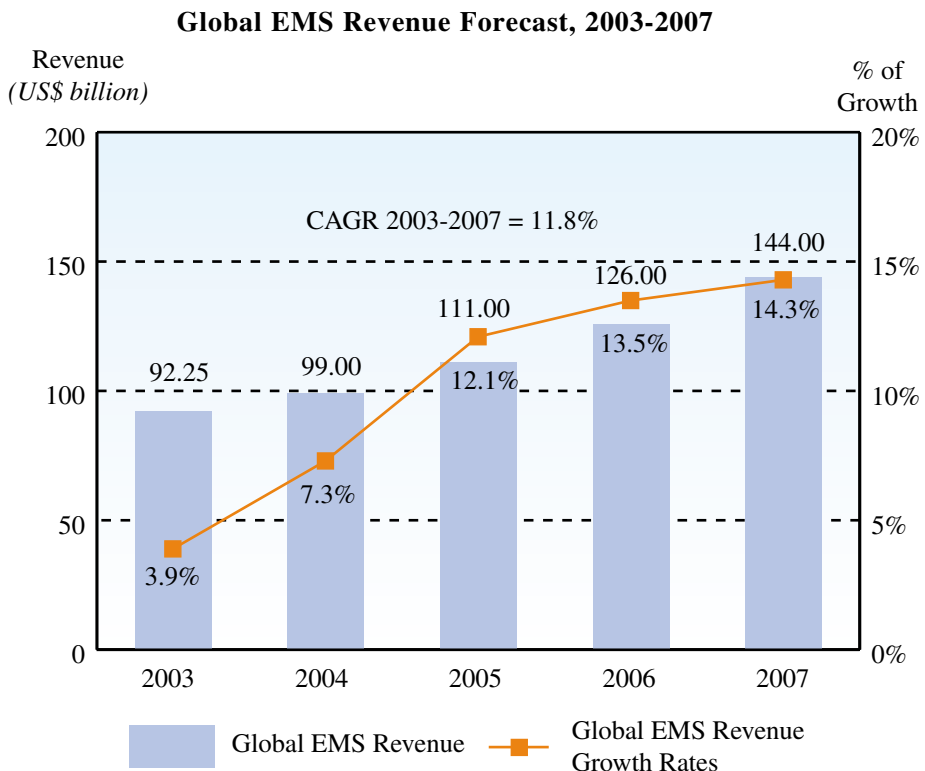
*The information and statistics set out in this section have been extracted from various published sources. No independent verification has been carried out on such information and statistics. Reasonable care has been exercised by the Directors in the exercise of extracting and repeating such information. The information may not be consistent with each other or with other information compiled for our industry.*

### ELECTRONIC MANUFACTURING SERVICES INDUSTRY

The EMS industry is comprised of companies that manufacture electronic products and their components for consumer electronic product manufacturers in the electronics industry.

### GLOBAL EMS GROWTH

According to IDC, the total EMS revenue is estimated to reach US\$92.25 billion in 2003 with a 3.9% year-on-year growth. IDC forecasts the CAGR of the total EMS revenue for the period 2003 to 2007 to be 11.8%. The following chart sets out the global EMS revenue growth rates from 2003 to 2007 as forecasted by IDC:



Source: The figures represent forecast estimates made by IDC, January 2004.

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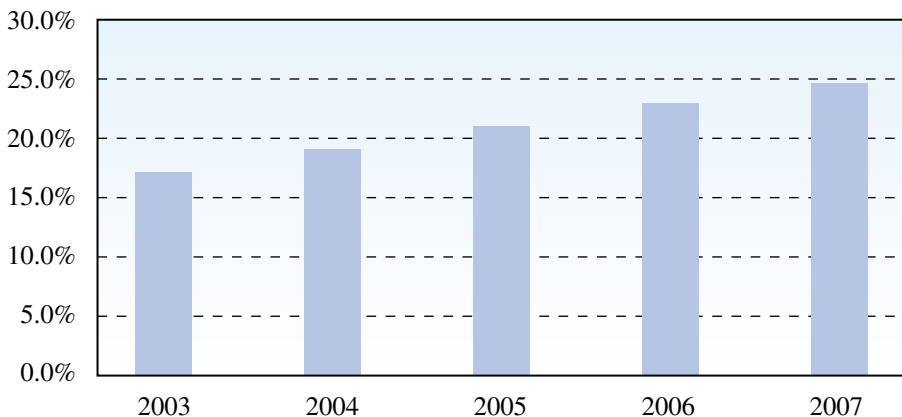
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IDC forecasts that the global EMS revenue is expected to increase to US\$144.0 billion by 2007. The growth will be driven by an accelerating move to outsourced production coupled with successful product diversification by the EMS providers and an increase in value-added services.

### Growing Outsourcing Trends

According to TFI, the worldwide electronics manufacturing outsourcing penetration rate is expected to increase from around 17% in 2003 to almost 25% in 2007. The following chart sets out TFI's forecast of outsourcing penetration rates from 2003 to 2007.

**Forecast of Electronics Manufacturing Outsourcing Penetration Rates**



*Source:* Electronics Manufacturing Outsourcing Report, TFI, Fourth Quarter 2003.

*Note:* Electronics manufacturing outsourcing penetration rate is the ratio of EMS revenue to cost of goods sold (less service and software related cost of goods sold) of electronics products brand owners.

The Directors believe that the factors driving electronics products brand owners to continue to favour a manufacturing outsourcing strategy include:

- **Access to leading manufacturing technologies** — electronics products brand owners can gain access to the EMS providers' expertise and capabilities in the area of advanced process and test technologies.
- **Accelerate time-to-market and time-to-volume** — electronics products brand owners can significantly improve product development cycles and accelerate the time-to-market and time-to-volume of manufacturing by utilising the expertise and manufacturing infrastructure of EMS providers, including their design and development capabilities.
- **Reduce product cost and capital investment** — with their better utilisation of manufacturing capacity, access to leading edge procurement and inventory management capabilities, proficiency in purchasing materials, and focus on improving the entire supply chain, EMS providers enable electronics products brand owners to reduce their production cost.

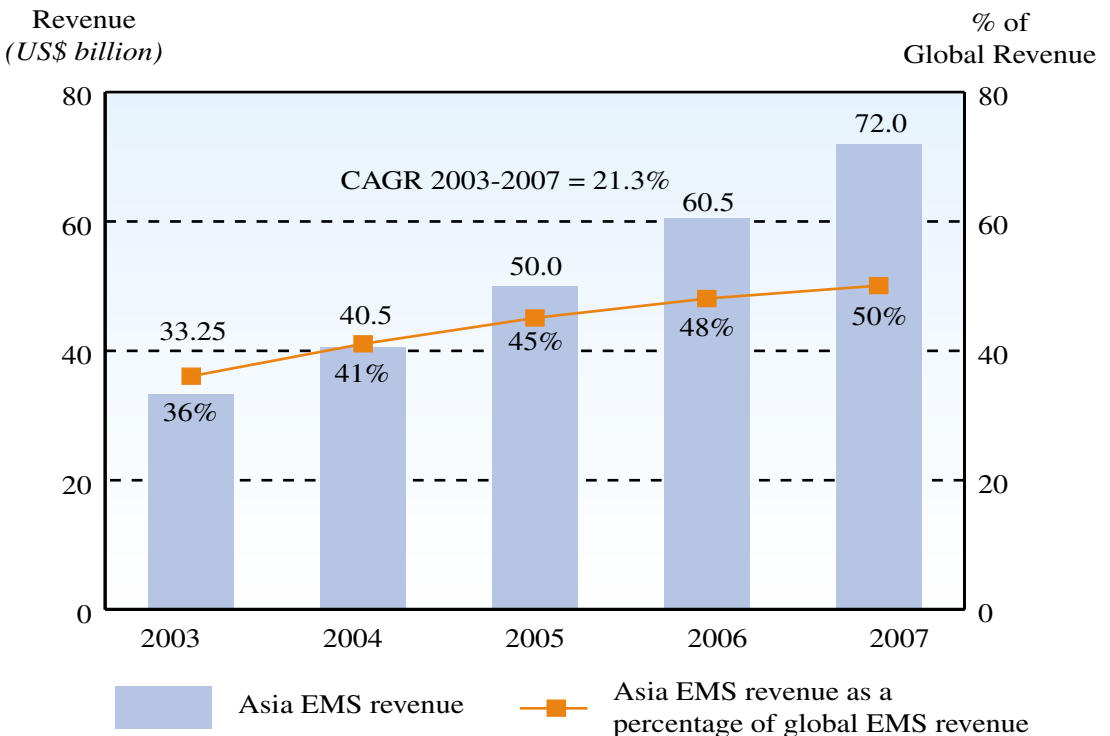
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- **Focus on core competence** — EMS providers enable electronics products brand owners to focus on their core activities, such as sales and marketing, and research and development.
- **Improve access to global markets** — electronics products brand owners with global supply chains can leverage off EMS providers with global networks to satisfy their manufacturing and distribution requirements.

### EMS MARKET IN ASIA

The move toward low-cost manufacturing and the low capacity utilisation rates throughout the EMS industry have precipitated a massive two-year industry restructuring. Most EMS manufacturers have reduced their capacity in high-cost regions such as the US and Western Europe while increasing capacity in low-cost regions such as China, Mexico and Eastern Europe. IDC breaks down the EMS industry into three main regions: the Americas, Europe, and Asia. According to IDC, Asia is expected to experience the strongest increase from 2003 to 2007, with a 21.3% CAGR. EMS revenue in Asia is expected to grow from US\$33.25 billion in 2003 to US\$72.0 billion in 2007, which would account for 50% of the global EMS industry revenue. Estimated growth in the Asia EMS revenue from 2003 to 2007 is shown in the chart below:

**Asia EMS Revenue Forecast, 2003-2007**



Source: The figures represent forecast estimates made by IDC, January 2004.

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### EMS MARKET IN CHINA

TFI predicts that China's overall GDP growth is estimated to be above 8% for 2004. The key seaboard cities, such as Shenzhen, are expected to enjoy considerably faster growth. Rapid growth is driving an internal consumer and enterprise market for electronics that will continue to drive electronics manufacturing in China for internal consumption as well as export.

China has contributed substantially in the growth of outsourcing. The following chart sets out China's share in the global EMS revenue:



Source: The figures represent forecast estimates made by IDC, January 2004.

IDC estimates that China will enjoy a CAGR in EMS revenue of 28.8% from 2003 to 2007. By 2007, 38% of the world's outsourced electronics and 76% of the outsourced electronics in Asia will be manufactured in China.

The advantages of China are mainly associated with its low-cost advantages. The country offers lower wages and overall cost of production than any other country in the world at this point in time, offering similar level of infrastructure. It is generally estimated that the land and labour costs of China are about one tenth of those in the United States. The Chinese worker's hourly rate is around US\$1.00 fully loaded (with meals, medicine, dormitory rooms provided for all workers), and showing minimal wage inflation due to an almost limitless labour supply. For the same reasons, China can also offer supply chains and logistics services at a lower cost. IDC also regards the skill of the labour force of China to be on par with some developed nations.

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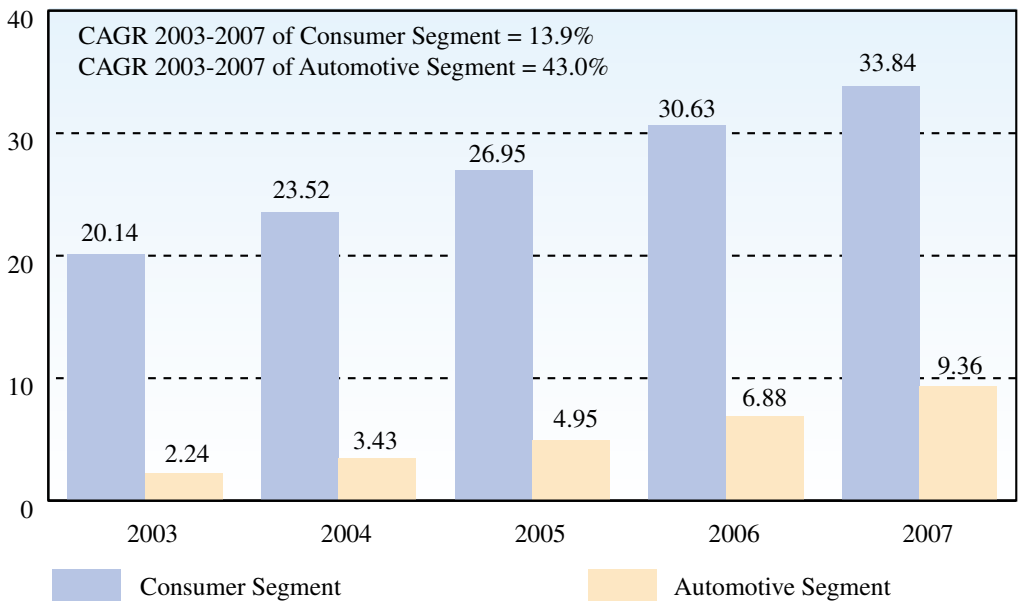
### EMS MARKET BY PRODUCT SEGMENT

IDC breaks down the EMS industry into nine segments including computers, consumer, networking, peripherals, servers and storage, telecommunications, automotive, medical, and other. IDC has separated the traditional product segments, including computers, networking, peripherals, servers and storage, and telecommunications, from the emerging segments, including consumer, automotive, medical and other, in a comparison. According to IDC, apart from the peripherals segment, all the other four segments in the traditional segments are expected to decline as a percentage of industry revenue from 2002 through 2007. IDC expects that the traditional segments will lose a combined 13% from 2002 to 2007, from a total share of 65% to 52%.

In this era of restructuring, retooling, and diversifying in the EMS industry, most EMS manufacturers have at least explored the idea of diversifying into additional product areas if they have not already begun to make the shift. IDC considers the three segments of consumer, automotive and medical to be emerging areas of growth for the EMS industry. All three segments are expected to increase as a percentage of industry revenue from 2002 through 2007, for a total 16% increase. In particular, the consumer segment is expected to increase as a percentage of industry revenue from 19% to 24%, while the automotive segment is expected to increase as a percentage of industry revenue from 2% to 7%.

#### Worldwide EMS Revenue of the Consumer Segment and the Automotive Segment, 2003-2007

Revenue  
(US\$ billion)



Source: The figures represent forecast estimates made by IDC, September 2003.

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As is shown in the above chart, IDC anticipates that the consumer segment is expected to show a CAGR of 13.9% from 2003 to 2007. The consumer segment includes audio players, digital camcorders, digital cameras, digital recorders, digital television, DVD players, gaming devices, handsets/mobile phones, information appliances, pagers, set-top boxes, single-use cameras and smart handheld devices.

The automotive segment is expected to have the greatest increase among the nine categories defined by IDC over the four-year forecast period with a 43.0% CAGR.

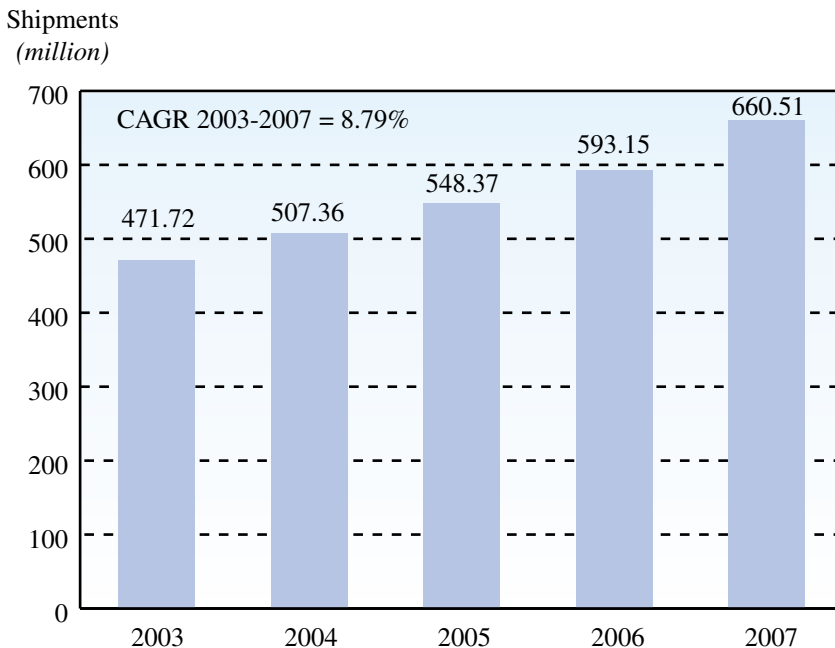
### KEY PRODUCTS

#### Mobile Phone Accessories

##### *Mobile Phones*

IDC predicts that the worldwide mobile phone market will enjoy long-term expansion through 2007 and beyond. The new mobile phone technologies, the rollout of 3G services worldwide and new content provided by wireless service providers all have positive impacts on the mobile phone market. IDC anticipates that the mobile phone industry will have an overall growth rate of 9% through 2007. The following chart shows the worldwide mobile phone shipments and revenue from 2003 to 2007 as forecasted by IDC.

**Worldwide Mobile Phone Shipments\*, 2003-2007**



Source: The figures represent forecast estimates made by IDC, September 2003.

\* Shipments refer to the total number of units shipped by a vendor into all distribution channels within a specific calendar year.

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The growth in revenue in the mobile phone industry as shown in the chart above has a positive effect on the mobile phone accessories business, including Bluetooth™ enabled mobile phone accessories , snap-on cameras, snap-on flash lights and others.

### **Bluetooth™-Enabled Mobile Device**

IDC predicts strong growth in the Bluetooth™-enabled mobile device market. It is expected that the worldwide shipment of Bluetooth™-enabled mobile devices shipment in 2003 will be greater than 44 million. IDC expects that by 2007, the end of its forecast period, the worldwide shipment of Bluetooth™-enabled devices will increase to 433 million and the CAGR in revenue from 2003 to 2007 will be 75.9%. IDC has suggested the following drivers for the sustained growth:

- Lower chipset costs. IDC expects decreasing chipset costs to drive Bluetooth™ penetration into a broader range of mass-market mobile devices;
- Improved usage models. IDC expects redesigned user interfaces and streamlined connection processes to make the technology more accessible to consumers and enterprises; and
- Improved public awareness. IDC expects increased consumer and enterprise demand to occur due to increased vendor efforts to educate the buying public on the benefits of Bluetooth™.

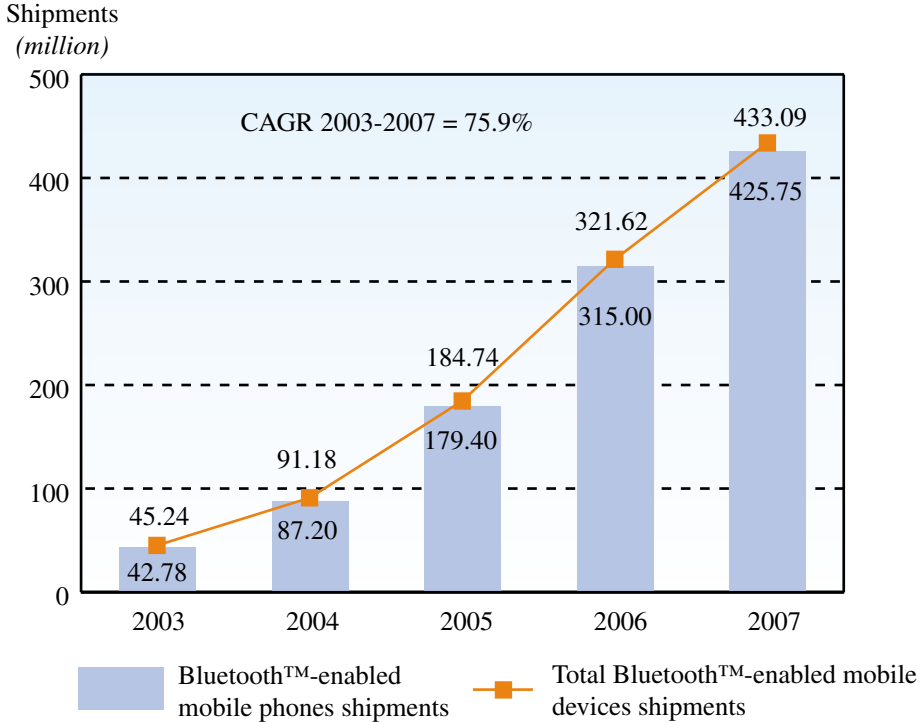
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The following chart shows the worldwide Bluetooth™-enabled mobile device shipments from 2003 to 2007 as forecasted by IDC:

### Worldwide Bluetooth™-Enabled Mobile Device Shipments\*, 2003-2007



Source: The figures represent forecast estimates made by IDC, June 2003.

\* Shipments refer to the total number of units shipped by a vendor into all distribution channels within a specific calendar year.

## Image Sensors for Camera Phones

### Camera Phones

As sensors and components decrease in cost and size, camera phones become indistinguishable, in terms of design, cost, and performance, from non-camera-enabled mobile phones. As camera phones are positioned to deliver benefits to wireless operators, device vendors and the end user over their non-camera-enabled peers, IDC expects that digital capture technology will become a standard inclusion throughout most of the major mobile phone vendor product lines over the next several years. The CAGR of the worldwide camera phone shipment from 2003 to 2007 is anticipated to be 51.4%.



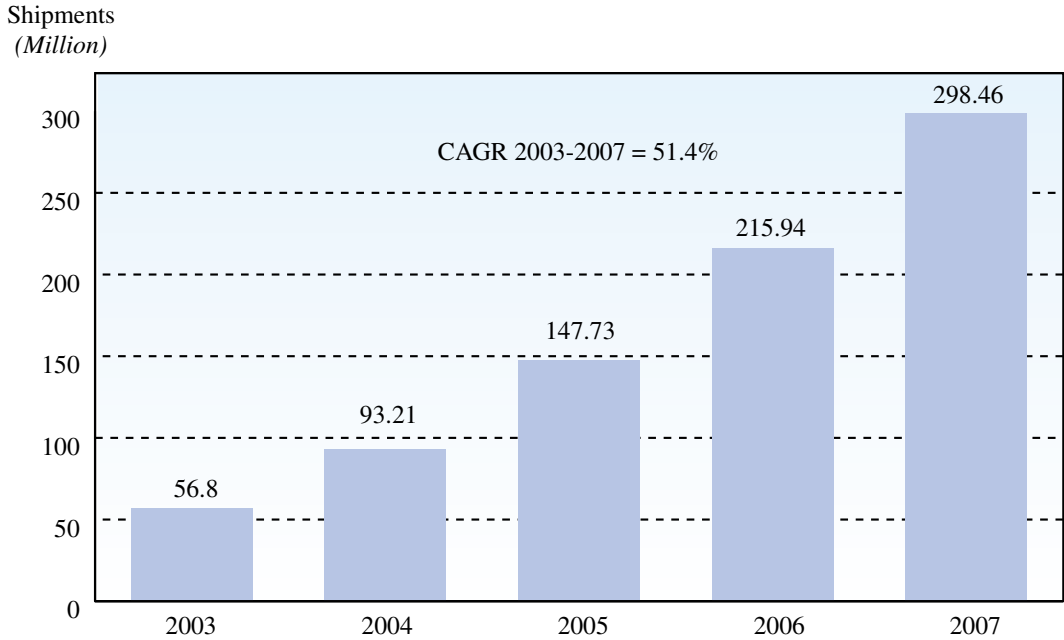
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The following chart presents IDC's forecast from 2003 to 2007 for worldwide camera phone shipments.

### Worldwide Camera Phone Shipments\*, 2003-2007



Source: The figures represent forecast estimates made by IDC, September 2003.

\* Shipments refer to the total number of units shipped by a vendor into all distribution channels within a specific calendar year.

### CMOS and CCD Image Sensors

IDC estimates that global shipments of CMOS image sensors into camera mobile phones will reach 48 million in 2003. For the life of the camera phone market, CMOS has dominated, largely due to a lack of high-resolution requirements, the importance of power consumption management and smaller size, and a particular focus by third-party CMOS vendors to create packaged “modules” that bundle a lens, sensor and other functionality into a manufacturer-friendly package. In addition, vendors like OmniVision entered the market early and gained a foothold in price and volume long before other third-party CMOS vendors entered the market.

IDC expects CMOS to continue to dominate the camera phone market for a variety of competitive reasons, including the following:

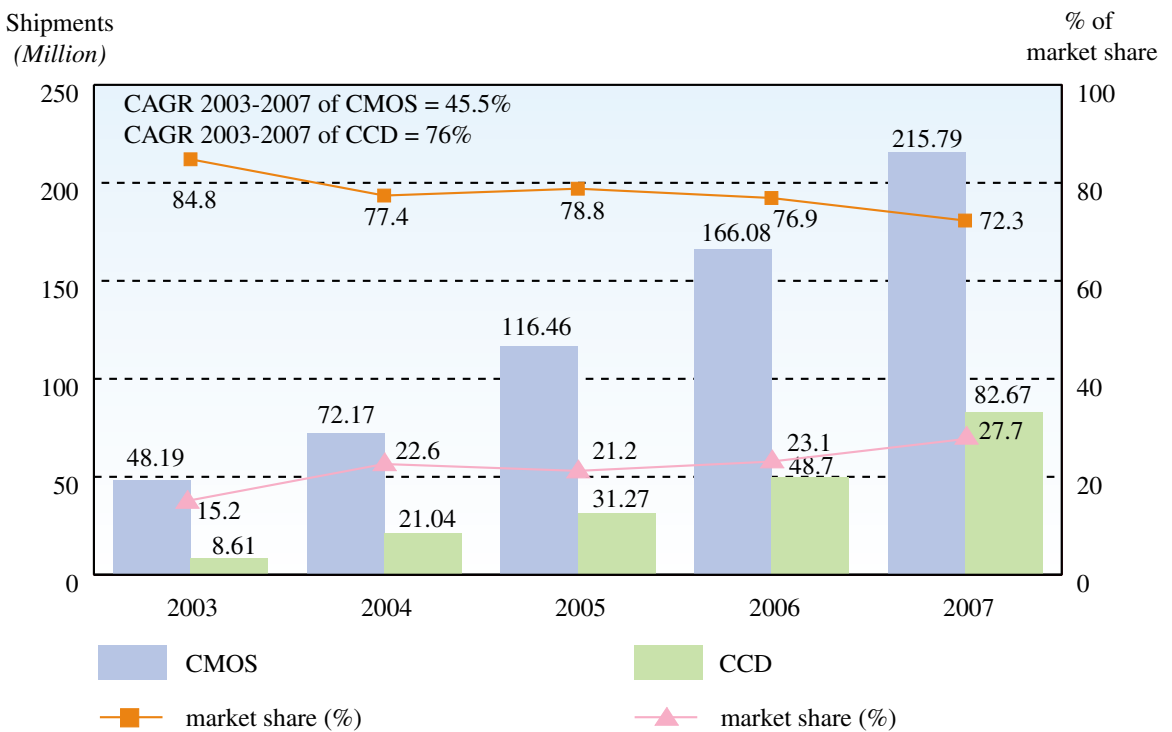
- Unlike the digital still camera market, CMOS technology has reached 1MP, 2MP, and even 3MP levels, well beyond what a current camera phone requires but providing for future requirements. This is unlike the situation in the digital still camera market, where CCDs are superior to CMOS in resolution terms. Both CCDs and CMOS are on an equal playing field in the camera phone market.

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- Camera phones are being manufactured by a growing number of regional vendors, compared with most digital cameras being designed and manufactured in Japan.
- CMOS image sensor modules offer a highly integrated, low-cost solution (hence their early adoption by camera phone vendors). While Japan is developing 1MP and 2MP CCDs for camera phones, CMOS has already reached those levels from the technology side.

The following chart presents IDC's forecast for worldwide sensor trends through 2007.

**Worldwide CMOS and CCD Image Sensor Shipments\* into Camera Phones, 2003-2007**



Source: The figures represent forecast estimates made by IDC, September 2003.

\* Shipments refer to the total number of units shipped by a vendor into all distribution channels within a specific calendar year.

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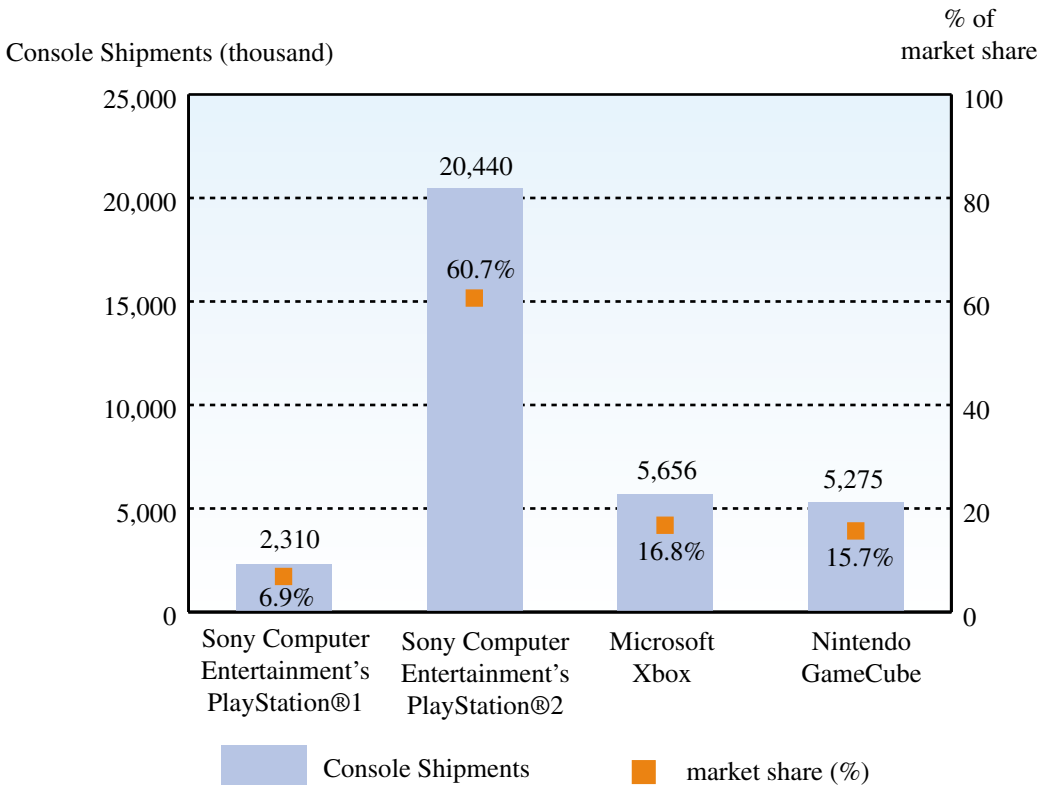
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### Videogame Console

Videogame consoles are videogame machines marketed primarily for stationary household consumption. Examples include Sony Computer Entertainment's PlayStation®2, Sony Computer Entertainment's PlayStation®1, Nintendo GameCube and Microsoft Xbox. Among the major platforms, Sony Computer Entertainment's PlayStation®2 assumes a market leading position. The following chart shows the worldwide videogame shipments by platform in 2003:

**Worldwide Videogame Console Shipments\* by Platform 2003**



Source: The figures represent forecast estimates made by IDC, November 2003.

\* Shipments refer to the total number of units shipped by a vendor into all distribution channels within a specific calendar year.

IDC predicts that Sony Computer Entertainment's PlayStation®2 will continue to increase its dominating market share in the videogame console market, increasing its share from 60.7% in 2003 to 66.4% in 2004 and to nearly 70% in 2005.

### EMS VERSUS ODM

For the most part, EMS providers and ODMs do not compete directly. ODMs do not have a high level of interest in pure manufacturing outsourced business. However, it is generally estimated that there is still about 20-30% overlap between EMS and ODM, especially in PC motherboards, notebooks and many other low-end PC-type products. IDC suggests that EMS providers must add ODM or contract design manufacturing capabilities to their operations in order to remain competitive.