TRADE DEVELOPMENTS

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Handheld Electronic Products Market in Japan

香港貿易發展局
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Preface

Miniaturisation has become one of the major trends of electronic products in world markets. Trendy electronic products are often made compact in size without compromising their functions. This report examines the handheld electronic (HHE) products market in Japan. Handheld electronics refer to portable consumer electronic products. While most agree that Japan is the home country of most prominent international brands of HHE products, there remain ample opportunities for Hong Kong companies to sell electronic parts and components as well as finished HHE products to Japan.

This report is devoted to analysing four categories of HHE products – (i) wireless communication equipment (particularly cellular phones), (ii) palm-size PCs, (iii) digital cameras and camcorders, and (iv) portable MP3/MD/CD/stereo cassette players. While Japanese manufacturers are generally understood to be strong in high-tech electronic products, a market condition that might deter smaller-sized, prospective overseas electronics companies from targeting Japan's handheld electronics market, there is always some exception. For instance, a special characteristic of Japan's MP3 player market is that an initially unknown manufacturer could come up with products that readily competed alongside those by major manufacturers.

While the number of cellular phone subscriptions in Japan rose to about 61 million in 2000, sales of cellular phones reached 47.8 million units. Cellular phones are most often sold to consumers by cellular phone service carriers rather than by manufacturers. As such, it would be difficult currently for Hong Kong companies to sell completely assembled cellular phones in Japan's market. A feasible route to penetrating Japan's market would be selling parts and components of cellular phones to Japanese manufacturers.

Personal Digital Assistants (PDAs) are gaining in popularity. Apart from acting as a schedule organiser combining such features as calculator, dictionary and address book, PDAs carry additional functions, particularly Internet connectivity.

Improved image quality and compactness in design has fuelled the demand for digital cameras and camcorders. Sales of digital cameras reached three million units in 2000, while that of camcorders amounted to 1.45 million units. The handiness of MD and MP3 players has made them the favourites of Japanese consumers, thus leading to a massive reduction in the prices of CD players. In 2000, 2.96 million units of portable MD players and 2.35 million units of CD players were sold.

Japan's HHE product markets offer good opportunities for overseas suppliers of both electronic parts and components as well as finished HHE products. Currently, Japanese electronics giants produce a wide range of HHE products, and they have started to produce in overseas countries, especially in China. According to a recent survey by Nihon Keizai Shimbun Inc. and Nikkei Research Inc., about 49% of the respondents, all of which are Japanese manutacturers, plan to boost their overseas production within the next three years. Around 71% of these firms are targeting China as the principal location for setting up plants. As such, Hong Kong companies will be in an advantageous position to supply parts and components to Japanese plants on the Chinese mainland, given its geographic proximity as well as its familiarity with the Chinese business environment.

For Hong Kong SMEs wishing to sell finished HHE products to Japan, they may approach Japanese manufacturers, trading firms and retailers for either OEM or ODM projects. More and more Japanese retailers are interested in developing private labels in collaboration with overseas suppliers. For HHE products, there are basically five categories of retailers – household electrical appliance discount stores, general discount/large-scale supermarkets, department stores, small-scale retailers associated with home appliance manufacturers and PC specialty stores. Among these outlets, household electrical appliance discount stores are performing better, and they are more willing to take products from other Asian countries.

When exploring the Japanese HHE products market, it is advisable that special attention should be paid to product design, colour and packaging. Although it may not be necessary to develop products specifically for the Japanese market, it is still important to understand the preferences of Japanese consumers, such as the size and function of the products. Apart from taking note of product trends in the Japanese market, it will be crucial to bear in mind the business practices of Japanese buyers, and to understand the legal regulations and industrial standards required by Japanese authorities.

CONTENTS

I. Market Overview

With the rapid development of information technology (IT), more and more handheld electronic (HHE) products are being introduced into the market. Consumers in Japan are generally receptive to HHE products as Japanese electronics manufacturers are the major suppliers domestically and in the global market. This report will examine four categories of HHE products in Japan:

- Wireless communication equipment
- Palm-size PCs (such as PDAs)
- Digital Still Picture Cameras and Camcorders
- Portable CD/MD/Stereo Cassette players

1. Market Size

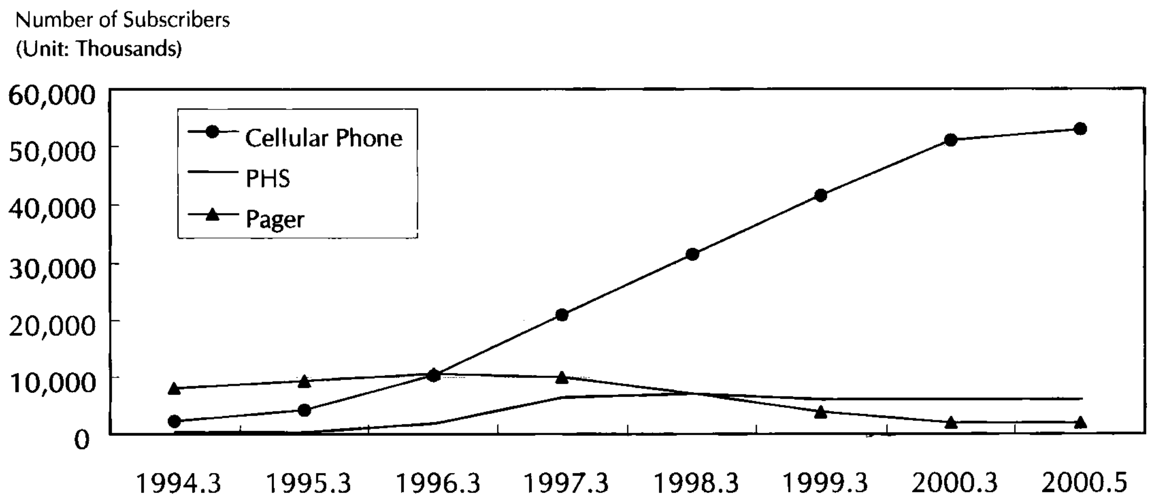
a) Wireless Communication Equipment

Japan's cellular phone system can be broadly divided into two: the ordinary cellular phone system and the "Personal Handy System" (referred as PHS below), a unique network system of wireless communication. Despite weaker signals, PHS allows communication with smaller-sized handsets and antenna equipment, lower energy consumption, and lower usage rates than ordinary cell phones. Additionally, transmission is faster and telephone charges are lower.

The cellular phone market experienced extraordinary growth in the second half of the 1990s. The introduction of the COAM (Customer Owned And Maintained) system in April 1994, together with the improvement in size and weight of cellular phones, has had a great impact on the market. The number of subscriptions reached 58.1 million at the end of April 2000, with the arrival of a new transmission technology "cdmaOne" and Internet service "i-mode."

PHS services began in July 1995. At that time, the prices of PHS phones, and subscription and telephone charges of PHS were far cheaper than those of cellular phones. Some PHS carriers sold the phones almost for free in order to entice subscriptions. As a result, subscribers totalled six million as early as in 1996. The Statistics Centre of the Management and Co-ordination Agency (Somucho) announced that around 36% of Japan's total population owned cellular phones or PHS phones by the end of 1998. Most were PHS subscribers. However, a drastic reduction in the hardware price of cellular phones as well as the expansion of network coverage led to a gradual shift from PHS phones to cellular phones. Against this backdrop, all PHS carriers ran into grave problems, which accelerated industry consolidation. The leading PHS carrier, DDI Pocket, merged nine subsidiaries into one company. NTT Personal came under the fold of NTT DoCoMo, while Astel Tokyo Corporation (ASTEL) was merged with Tokyo Telecommunications Network Co. Inc. to form Tokyo Denwa ASTEL.

Number of Subscribers of Cellular Phones, PHS phones and Pagers



Source: Ministry of Post and Telecommunication (MPT)

Number of Subscribers of Cellular Phones, PHS phones and Pagers by Carriers (May 2000)

	Carrier	Number of Subscribers
Cellular Phone	NTT DoCoMo Group	30,391,000
	J-Phone Group	8,587,500
	DDI Cellular Group	6,283,400
	IDO	3,937,200
	TU-KA Cellular	3,638,300
PHS	DDI Pocket	3,231,400
	NTT DoCoMo	1,483,000
	ASTEL Group	973,700
Pager	NTT DoCoMo	1,401,000
	Other	447,200

Source: MPT, Telecommunication Carriers Association (TCA), 2001

Pagers, often called Pocket Bell in Japan, recorded their fourth consecutive year of decline in number of users in 2000. As of May 2000, the number of subscribers had fallen to 1.8 million, about one-sixth of the 1996 levels. Pagers were initially well received by the younger generation, however, they have been superseded by cellular and PHS phones. The decline in subscriptions has forced pager service providers to either downsize or leave the business. For instance, Tokyo Tele-message, one of the major providers, went bankrupt in 1999.

Annual Domestic Shipment Value of Cellular Phones

Billion Yen

	Cellular Phones	Pagers
1989	-	33.5
1990	-	51.9
1991	-	58.8
1992	147.2	96.2
1993	175.8	95.2
1994	282.5	106.9
1995*	393.8	94.3
1996	776.9	58.2
1997	850.6	20.7
1998	981.0	15.8
1999	1,079.3	4.7

Source: MITI, "Indices of Industrial Production", 2000

b) Palm-size PCs (PDA, electronic notebooks, electronic dictionaries and accessories)

During the first half of the 1990s, electronic notebooks with schedule organiser, dictionary, calculator and address book functions became very popular among business people. In 1996, the total domestic shipment in Japan was over one million units. To differentiate the products, manufacturers have added functions like digital voice recorder, digital still picture camera and e-mail capability to conventional electronic notebooks. A multi-function electronic notebook as such is now called a Personal Digital Assistant (PDA). In 2000, Japan's domestic shipment of PDAs rose by 53% to 1.32 million units from 1999, following the success of PDA manufacturers in adopting Palm OS operating systems such as Palm Computing and Handspring KK. The growth in sales of PDAs is expected to continue. According to the Yano Research Institute, one of Japan's specialised market research companies, the domestic shipment value of PDAs, together with other electronic notebooks, will exceed 339 billion yen by 2010.

c) *Digital Cameras and Camcorders*

Digital cameras first appeared in Japan in 1995 using Charged Coupled Devices (CCDs) to record images, rather than film rolls used in traditional cameras. Convenience is the major advantage of digital cameras as photos can be easily displayed on a computer monitor, and the camera can record more than 100 pictures at one time. In the early days, digital cameras' pixel density, by far the most important indicator of the quality and functionality of digital cameras, was around 250,000. Now, the pixel density of many advanced models has already surpassed the three million-pixel mark, making the quality of digital camera pictures not much different from those taken by traditional film cameras. Furthermore, advanced models now attract consumers with their enhanced Internet functionality.

Helping the sales of digital cameras in Japan is the popularity of personal computers and the use of the Internet. Exchanging digital pictures via the Internet has become a convenient tool of communication for both consumers and businesses in Japan. It is estimated that sales of digital cameras in Japan reached three million units in 2000, doubling from 1999. There are around 100 different models of digital cameras in the market and the majority have less than a 1% market share. According to Nikkei's Company Ranking and Surveys, five major makers account for about 97% of the total market share. They include FUJIFILM (27.6%), Sony (18.1%), Olympus Optical (16.9%), Canon (8.7%) and Casio (6.9%).

On the back of improved image quality and smaller size, demand for camcorders has grown quickly. The number of camcorders shipped domestically rose by 5.6% to 1.45 million units in 2000. Like the digital still picture camera market, the rapid expansion of Japan's camcorders market has been helped by the lower prices of computers, printers and other peripherals.

d) Portable Mini Disc Players / Portable CD Players / Portable Stereo Cassette Players

Sales of portable audio players (including portable Mini Disc (MD) players, portable CD players, and portable stereo cassette players) have recently become stagnant in Japan. Generally, the increase in domestic shipments of MD players has offset the decrease in portable stereo cassette players like Sony's "Walkman". This trend is related to the shifting consumer preference to record music digitally with MD, which comes with higher sound quality. Obviously, the analogue music cassette tapes, which are of lower sound quality, have become obsolete.

In terms of product category, domestic shipments of portable CD players amounted to 2.15 million units in 2000. In the early 1990s, the widespread use of CDs fuelled the demand for portable CD players and CD stereo equipment including CD radio cassette players. According to the Economic Planning Agency, 60% of Japanese households owned fixed and portable CD players in 1999, and CD players and equipment became an obvious replacement for stereo cassette players. With more manufacturers attracted into the market in anticipation of continuing growth in demand, products of better quality and smaller size have replaced the old-fashioned, larger CD players. The introduction of lower-priced, portable CD players has attracted more buyers. As a result, portable CD players account for the largest segment of the audio market. However, demand for CD players has shifted quite rapidly to portable MD players over the last two years.

Domestic Shipment of Portable Audio Devices

('000 units)

	Portable MD players	Portable CD players	Portable stereo cassette players	Total
1993	-	1,465	3,800	5,265
1994	170	1,693	3,829	5,692
1995	409	2,115	4,101	6,625
1996	1,032	2,183	4,208	7,423
1997	1,528	2,097	3,640	7,265
1998	2,227	2,338	2,729	7,294
1999	2,658	2,198	2,644	7,500
2000	2,957	2,150	2,176	7,283

Source: JEITA, 2001

The portable MD player market is expected to grow at a rapid pace. The first MD system was developed by Sony and introduced in May 1991. Nationwide advertising campaigns by MD player manufacturers have steadily stimulated the demand for MD players. Domestic shipments of portable MD players in Japan reached 2.96 million units in 2000, an increase of 40% compared with the previous year.

The strong growth of portable MD players is attributed to three factors. First, innovative designs and miniaturisation of sizes have aroused consumers' interest in MD players. Second, prices of portable MD players have decreased substantially. Finally, larger multiple MD players, including the "Car MD" and "MD radio cassette" players are gaining prominence. The popularity of portable MDs also induces consumers to purchase other types of MD products. In 2000, domestic shipments of MD products in Japan amounted to 7.5 million units.

Percentage Ownership of Household Electrical Appliances in Japan

	Colour TV	VCR	CD Player	Stereo Set	Video Camera	PC	FAX
1984	99.2	18.7	0.0	58.0	8.8	0.0	0.0
1985	99.1	27.8	0.0	59.9	8.4	0.0	0.0
1986	98.9	33.5	0.0	60.5	8.5	0.0	0.0
1987	98.7	43.0	10.0	58.9	10.4	11.7	0.0
1988	99.0	53.0	16.1	58.9	11.3	9.7	0.0
1989	99.3	63.7	26.8	61.2	14.9	11.6	0.0
1990	99.4	66.8	34.3	59.3	15.6	10.6	0.0
1991	99.3	71.5	41.0	57.9	23.7	11.5	0.0
1992	99.0	63.8	47.5	61.0	26.0	12.2	5.5
1993	99.1	75.1	54.3	61.3	25.6	11.9	6.7
1994	99	72.5	53.8	60.1	29.9	13.9	7.6
1995	98.9	73.7	55.9	57.7	31.3	15.6	10.0
1996	99.1	73.8	56.8	58.2	32.3	17.3	12.9
1997	99.2	75.7	57.9	56.3	33.6	22.1	17.5
1998	99.2	76.8	59.9	55.2	35.0	25.2	22.2
1999	98.9	77.8	60.1	54.6	36.3	29.3	26.4
2000	99.1	78.5	61.8	55.5	37.9	38.6	32.9

Source: Economic Planning Agency, "Research on Consumption Trend", 2001

Domestic Shipment of MD Products (2000)

Category		Units ('000)
MD player	Fixed MD player	179
	Portable MD player	2,957
Multiple MD player	MD stereo set	2,563
	MD radio cassette player	1,755
Total		7,454

Source: JEITA, 2001

e) Parts and Components

There are two major categories of electronic parts and components. The first category consists of active parts such as semiconductors, LCD and Large Scale Integration (LSI). The other is general electronic devices, referring to passive parts (condensers and resistors), switch parts (speakers and mini motors) and connector parts (tuners and connectors).

As HHE products equipped with LCD devices have gained immense popularity in

Japan, sales of LCDs grew substantially from 1995 to 1999. However, the domestic shipment of LCDs for computers became sluggish in 2000, whereas the LCDs used in the new models of cellular phones were in short supply. As a result, total sales of LCDs remained subdued in 2000.

Market Size of Electronic Components

(Billion yen)

	1994	1995	1996	1997	1998	1999
ICs	3,296	3,914	3,910	3,845	3,461	3,714
Semiconductors	741	878	849	918	890	951
LCDs	558	601	699	871	877	1,244
Electronic Tubes	736	799	750	754	617	473

Source: MITI "Production Trend Statistics", 2000

2. Customer Segmentation

In addition to the sales price, customers of HHE products look for better functions, performance and product design. As it becomes increasingly difficult for HHE product manufacturers to differentiate their products from those of others, the pricing of HHE products remains critical for driving sales.

a) Cellular Phones, PHS and Accessories

At the beginning, users of cellular phones were mostly business people and youth. Today, cellular phones are considered by most a necessity rather than a luxury. The total number of cellular phones and PHS subscribers has exceeded that of ordinary telephone lines in Japan. Cellular phones and PHS phones for business uses are often subscribed for under the name of corporations, especially those that employ many salespeople. Quite a number of business people have two wireless communication devices; one for business use as provided by the company, and another for private use.

Homemakers and students prefer PHS phones because of their lower product and service prices. But many among these user groups are shifting to cellular phones from PHS phones as price differentials have narrowed, not to mention that PHS communications networks are considered inferior to cell phone networks. In Japan, most cellular phones and PHS phones are sold by and under the names of carriers, not manufacturers.

Japanese consumers choose cellular phones or PHS phones for the combined considerations of communication cost, transmission speed, peripheral terminals and corporate services. There are many packages offered by a variety of carriers, including those with lower initial fixed charges and expensive calling charges to ones with higher fixed charges and lower running costs. Carriers consider that provision of Internet service is necessary to attract new subscribers as well as to retain existing users.

Many consumers, especially businesspeople, purchase different accessories to connect digital cellular phones to PDAs and notebook PCs. The more popular accessories include modem cards, connection units, terminal adapters, straps and spare batteries.

b) Palm-Size PCs and Accessories

The first PDA in Japan was the Zaurus, launched by Sharp in 1993. These PDAs were generally used like pocket notebooks for entering daily schedules and contact numbers. When Internet connectivity and other functions began to appear, an increasing number of businesspeople started to use PDAs. Today, PDAs offer even more diverse functions such as a music playback option in addition to Internet connectivity. As such, an increasing number of people buy them for entertainment. Compared with notebooks, PDAs are less expensive and more portable.

One of the best-selling PDAs in retail stores is the Zaurus MI-E1 by Sharp. Users can view videos with a Zaurus connected to a recorder, which can store TV or video programmes in a memory card. The Zaurus PDA can also play music programmes and connect to the Internet via a PHS card, available from NTT DoCoMo and other sources.

Next in popularity is Sony's Clie, which also has a music playback function. Special headphones are provided to enhance voice quality. Screen resolution is upgraded from the conventional 160x160 pixels to 320x320 pixels, making kanji and other text more legible. It uses the "jog dial" format that is familiar to Sony cellular phones, allowing the user to call up and select menu options with one hand.

Meanwhile, Compaq has continued to work on enhancing the performance of PDAs. Its iPAQ, released in April 2001, claims to be the PDA with the fastest speed in data processing. Also, it is easy to add memory cards and modem functions by replacing the back cover of the PDA.

Internet connectivity is an essential feature for the new generation of PDA products. In the past, cables were required to connect the PDA to a PHS or cellular phone. PDAs nowadays only require a PHS card. More recently, PDAs with built-in Internet connection functions have begun to appear.

IBM Japan's Workpad 31J has built-in PHS parts for connection to the Internet. It was originally sold for corporate use, but the company has now begun selling it to retail stores in response to mounting interest from individual consumers.

In early June 2001, Palm Computing released the m505. Users can watch videos from the PDA and load games or other programmes with a memory card. The company plans to offer content services for PDAs through the Internet.

There are three basic types of operating systems (OS) for PDAs in Japan. They include the unique OS used in Sharp's Zaurus; Pocket PC, an OS developed by Microsoft (US) for PDAs; and the most popular OS for PDAs in Japan, Palm OS developed by Palm (US).

c) Digital Still Picture Cameras, Digital Video Cameras and Accessories

Digital still picture cameras, digital video cameras, and related accessories such as a multimedia card, spare battery, connective cable, stand and remote controller are often regarded as peripheral products of PCs. Certainly, the widespread household ownership of computers helps the demand for digital cameras. Generally, the main users of digital still picture cameras are those in their 20s, while users of digital video cameras are young couples with children. Therefore, consumers basically are the younger generation, though the market is expanding gradually.

d) Portable CD Players, Portable Mini Disc Players, Portable Stereo Cassette Players and accessories

The major consumers of portable CD players, portable MD players and portable stereo cassette players are high school and university students aged between 15 and 24. In comparison, older people tend to prefer high-quality CD and MD systems.

The difference in consumer preference is due to their attitudes towards music appreciation. Younger people tend to favour immediate gratification of their quest for music while caring less about sound quality. Contrastingly, older consumers put more emphasis on sound effects. Understandably, younger people are the principal buyers of accessories such as headphones, batteries and stand-alone speakers.

3. Retail Outlets

Most HHEs are sold through retail outlets affiliated with major electronics and household electrical appliance manufacturers. Meanwhile, discount stores are getting a bigger slice of the market share.

a) Cellular phones, PHS and accessories

Most cellular phones, PHS phones and related accessories (replacement battery, battery charger and strap) are available at specialty chain stores managed by carriers such as DoCoMo Shop, independent specialty stores (for example, HIT Shop by Hikari Tsushin) and discount stores (such as Yodobashi Camera).

b) Palm-size PCs (PDA and electronic dictionary) and accessories

Almost all palm-size PCs and related accessories (replacement battery, battery charger, connecting cable, application software, portable keyboard and carrying case) are available at PC specialty stores like Sofmap. A few office supplies retailers, like Office Depot and Askul, have recently started offering PCs and related accessories, though their sales are not yet significant.

c) Digital Still Picture Cameras, Digital Video Cameras and accessories

Most digital still picture cameras, digital video cameras and accessories (replacement battery, battery charger, connecting cable, application software, storage device like a memory stick and flash card) are sold by discount stores. Traditional camera shops have become very insignificant in the retail market as they do not have sufficient bargaining power to secure good prices from manufacturers.

d) Portable CD/MD players and accessories

Same as the palm-size PCs and digital still picture cameras, discount stores are the most important retail channel for portable CD/MD players and accessories (replacement battery, battery charger, connecting cable, headphone and recording disk) in Japan. Price competition in the CD player market is so keen that independent small-scale retailers are being driven out of the market.

4. Import Trends

a) Cellular Phones

In Japan, the number of cellular phone subscribers has increased rapidly since 1995. Conversely, the number of PHS subscribers has shown a downward trend since 1996. In 2000, total imports of cellular phone products rose by 82.4% from the previous year to US$ 79 million.

The largest supplier of cellular phones to Japan is Finland, home country of the world's largest cellular phone manufacturer — Nokia. At the same time, imports from South Korea and Taiwan are on the rise, primarily due to the Original Equipment Manufacturing (OEM) or Original Design Manufacturing (ODM) projects of the international cellular giants as well as Japanese manufacturers in these countries.

Japan's Imports of Cellular Phones

(US$ million)

	1998	1999	2000
Finland	52.134	31.020	39.835
South Korea	0.050	0.101	27.025
Taiwan	0	0.043	3.613
Malaysia	0.005	2.025	3.243
UK	0.192	1.428	1.415
Total (including others)	63.303	43.523	79.382

Source: World Trade Atlas – Japan, 2001

b) Palm-size PCs

PDA

Import statistics for PDAs are included in the category of electronic calculators. In the past five years, imports in this category grew steadily. In 2000, Japan's total imports of electronic calculators amounted to US$ 103 million.

Japan's Imports of Electronic Calculators

(US$ million)

	1998	1999	2000
Chinese mainland	68.149	88.495	77.186
Malaysia	7.616	19.800	16.728
Thailand	10.982	8.301	2.931
Hong Kong	0.801	1.015	1.762
Taiwan	9.227	8.854	1.364
Total (including others)	101.649	133.970	102.981

Source: World Trade Atlas – Japan, 2001