DIGITIMES Research: ICT Report – 4Q 2007

Taiwan digital cameras

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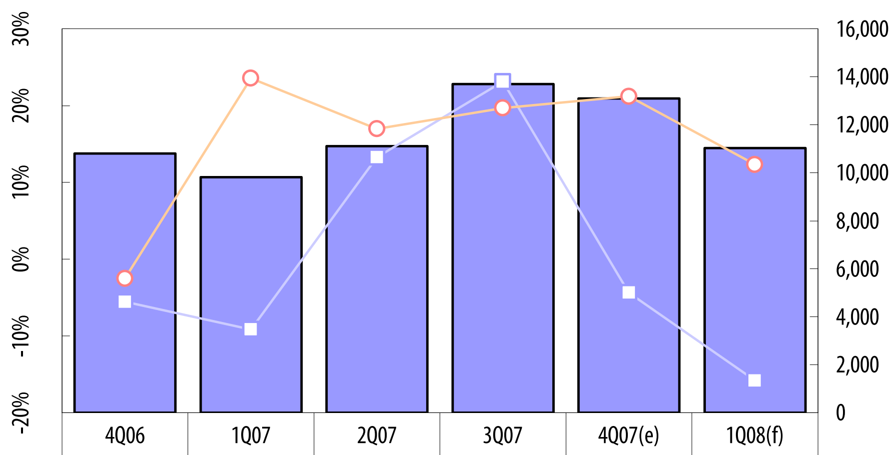
English edition: Rodney Chan, DIGITIMES, March 2008
NOTE: Unless otherwise indicated, figures and tables refer to output from Taiwan makers.

Introduction

New orders from Nikon and Fujifilm helped Taiwan makers weather the seasonal downturn during the fourth quarter better than they did during the same period in 2006. In general, orders from old and new clients were strong, resulting in significant on-year shipment growth.

In the first quarter of 2008, Samsung Electronics will continue raising its in-house production. Hewlett Packard (HP) will still be adjusting its digital camera strategies. With both vendors holding off their orders for Taiwan amid seasonal effects, shipments are expected to go down sharply on quarter.

Chart 1: Taiwan DSC shipments, 1Q07-1Q08 (k units)



	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
Shipments	10,805	9,818	11,121	13,692	13,097	11,028
Q/Q	-5.5%	-9.1%	13.3%	23.1%	-4.3%	-15.8%
Y/Y	-2.5%	23.6%	17.0%	19.7%	21.2%	12.3%

Source: Digitimes Research, January 2008

Shipment breakdown

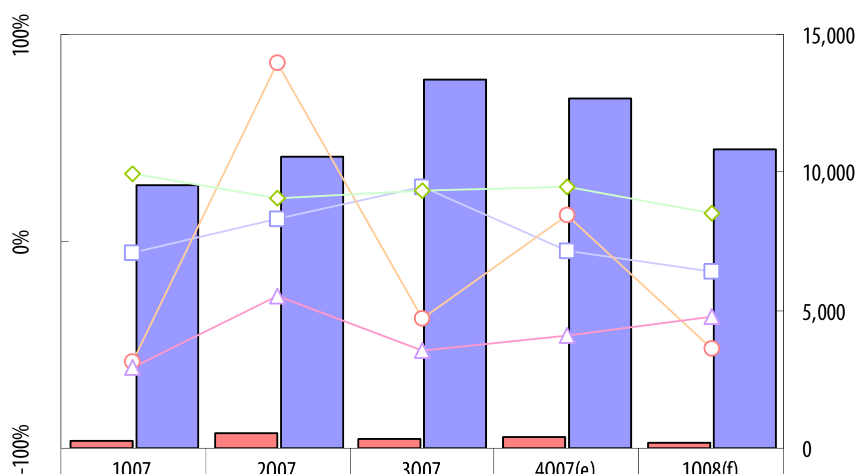
Image sensors: CCD and CMOS

Despite weaker-than-expected sales of its CMOS models, Kodak still increased its CMOS-based orders slightly in the fourth quarter. The CMOS segment was also buoyed by shipments to other channel brands that had been delayed from the third quarter because of panel shortages.

In the CCD segment, the relatively strong demand from Nikon and Fujifilm were unable to cancel out the seasonality that was preventing other vendors from increasing their orders. Overall shipments went down sequentially in the fourth quarter.

In the first quarter, the CCD segment will see Fujifilm increase orders, while shipments fulfilling Casio's first ODM orders for Taiwan will be delivered. But seasonality will still drive down overall CCD shipments. For the CMOS segment, shipments to Kodak will have stopped by the end of the first quarter. Orders from channel brands will also decrease.

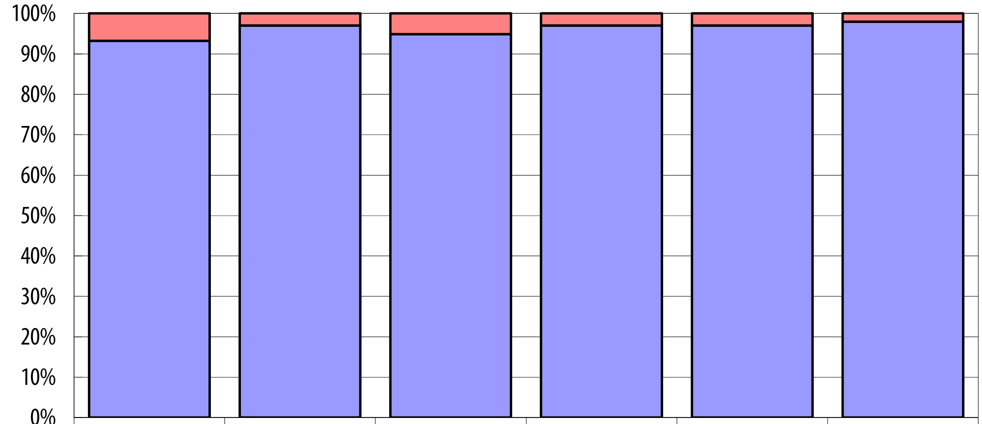
Chart 2: CCD- and CMOS-based shipments, 1Q07-1Q08 (k units)



	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
CCD	9,512	10,551	13,337	12,697	10,834
CMOS	306	570	355	400	194
CCD Q/Q	-5.5%	10.9%	26.4%	-4.8%	-14.7%
CMOS Q/Q	-58.4%	86.3%	-37.7%	12.7%	-51.5%
CCD Y/Y	32.7%	20.8%	24.8%	26.1%	13.9%
CMOS Y/Y	-60.5%	-26.3%	-52.6%	-45.6%	-36.6%

Source: Digitimes Research, January 2008

Chart 3: Shipment proportion by image sensor, 4Q06-1Q08



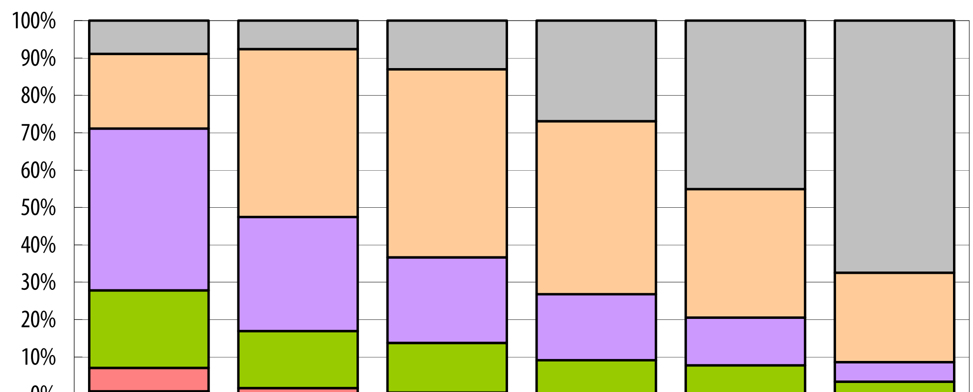
	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
CMOS	7%	3%	5%	3%	3%	2%
CCD	93%	97%	95%	97%	97%	98%

Source: Digitimes Research, January 2008

Resolution

The 8-megapixel models became the top segment in the fourth quarter, as large portions of orders from Kodak, Fujifilm, Nikon, and Olympus were shifted to the 8-megaixel segment from the 7-megapixel one. The 8-megapixel segment will remain on top in the first quarter, driven by orders from Sony, Fujifilm, Nikon, Casio and channel brands.

Chart 4: Shipments by resolution, 4Q06-1Q08



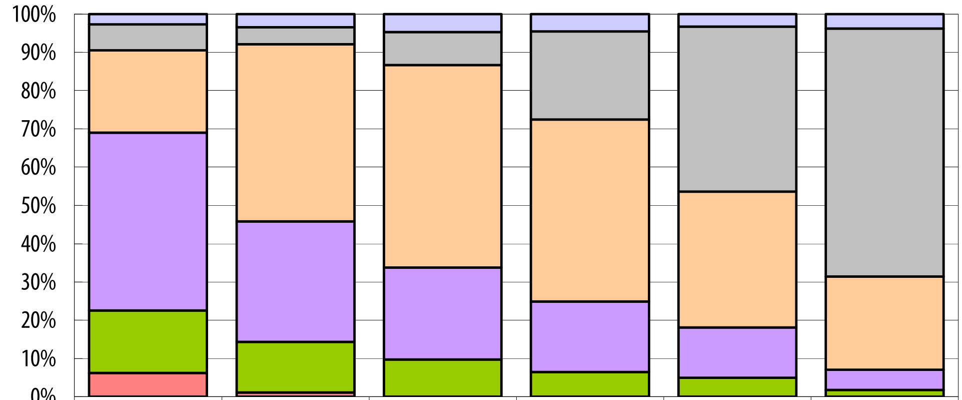
	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
>=8m	8.9%	7.6%	13.1%	26.9%	45.1%	67.5%
7m	20.0%	44.9%	50.3%	46.3%	34.4%	24.0%
6m	43.3%	30.5%	22.9%	17.7%	12.7%	5.2%
5m	20.7%	15.3%	13.3%	8.9%	7.5%	3.2%
4m	6.2%	1.6%	0.1%	0.1%	0.2%	0.1%
<4m	0.8%	0.0%	0.3%	0.1%	0.0%	0.0%

Source: Digitimes Research, January 2008

The CCD segment's resolution trend was in line with the overall one in the fourth quarter, with the 8-megapixel class climbing to the top. The 10-megapixel class' percentage dropped as Kodak's orders for Asia Optical in the segment were drawing to a close.

In the first quarter, 8-megapixel models' share will rise sharply to stay as the top segment. The 10-megapixel class' share will go up on shipments to Olympus and Samsung.

Chart 5: CCD-based shipments by resolution, 4Q06-1Q08

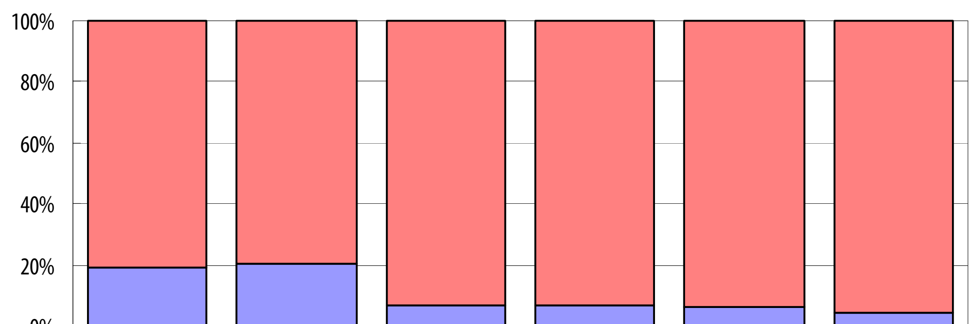


	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
>=10m	2.7%	3.5%	4.7%	4.5%	3.3%	3.8%
8-9m	6.8%	4.4%	8.6%	23.1%	43.1%	64.8%
7m	21.5%	46.3%	53.0%	47.5%	35.5%	24.4%
6m	46.5%	31.5%	24.0%	18.4%	13.1%	5.3%
5m	16.3%	13.2%	9.7%	6.5%	4.9%	1.7%
4m	6.2%	1.1%	0.0%	0.0%	0.0%	0.0%
<4m	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Digitimes Research, January 2008

Although 8-megapixel CMOS sensors have been launched, issues with the prices, market acceptability and specification requirements have prevented the mainstream of CMOS DSCs from getting beyond 5 megapixels. As Kodak is expected to discontinue its orders for 5-megapixel CMOS models in the first quarter, the share of 5-megapixel CMOS models will go further down.

Chart 6: CMOS-based shipments by resolution, 4Q06-1Q08



	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
>=5m	80.9%	79.8%	93.1%	93.0%	94.1%	95.7%
<5m	19.1%	20.2%	6.9%	7.0%	5.9%	4.3%

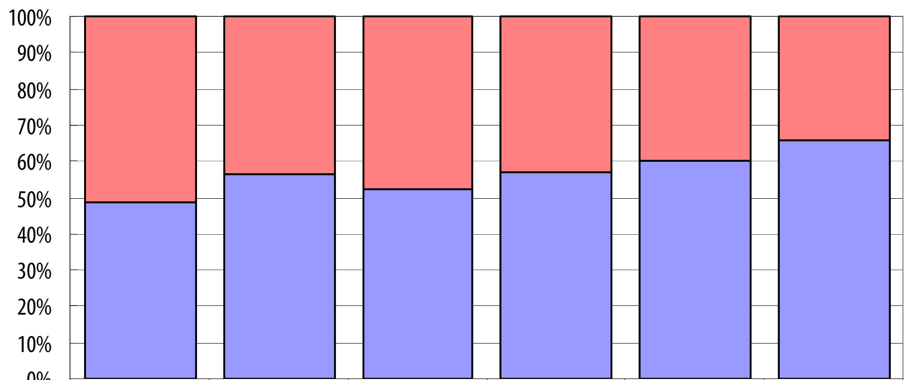
Source: Digitimes Research, January 2008

Clients

The combined share of the first-tier brands (global Top-8 vendors) of the fourth-quarter shipments rose on orders from Nikon and Fujifilm. The two vendors' orders more than canceled out the decreases in orders from Sony, Olympus, Kodak, and Samsung (a total sequential drop of 13%). Non-first-tier brands' shipments dropped 27% sequentially.

In the first quarter, the first-tier brands of Nikon, Kodak, and Samsung will reduce their orders significantly, but orders from other top vendors, such as Sony, Olympus, and Fujifilm, will stay flat. While shipments to the first-tier brands will decline 14%, the drop in shipments to non-first-tier vendors will be even bigger at 18%.

Chart 7: Shipments by client type, 4Q06-1Q08

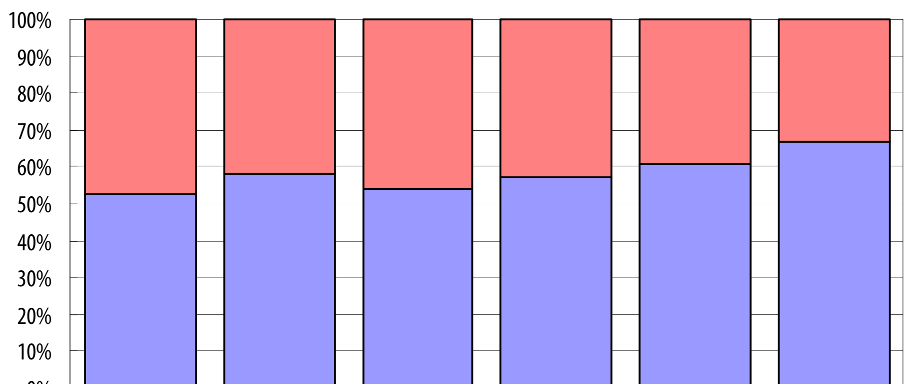


	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
Others	51.3%	43.5%	47.7%	43.1%	39.7%	34.1%
Fisrt-tier brands	48.7%	56.5%	52.3%	56.9%	60.3%	65.9%

Note: First-tier brands refer to Top-8 vendors in terms of global sales: Canon, Sony, Kodak, Olympus, Fujifilm, Nikon, Samsung, and Panasonic. Source: Digitimes Research, January 2008

The factors determining the overall shipment breakdown between the first-tier and lesser vendors also apply to the client breakdown for the CCD segment.

Chart 8: CCD-based shipments by client type, 4Q06-1Q08



	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
Others	47.7%	41.7%	45.9%	42.8%	39.4%	33.3%
First-tier brands	52.3%	58.3%	54.1%	57.2%	60.6%	66.7%

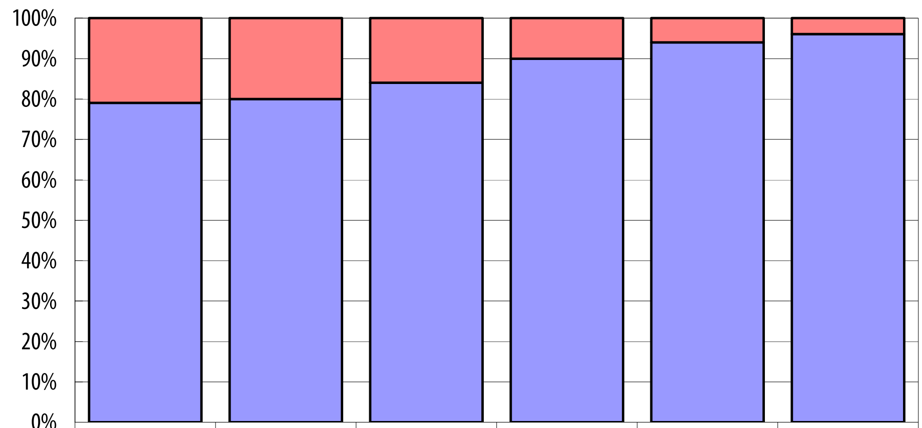
First-tier brands refer to Top-8 vendors in terms of global sales: Canon, Sony, Kodak, Olympus, Fujifilm, Nikon, Samsung, and Panasonic. Source: Digitimes Research, January 2008

Makers

The Top-3 makers handle all of the orders from the first-tier brands, as well as from such non-first-tier brands as Casio, HP, Sanyo, and Pentax. Other makers chiefly serve channel brands, shipments to which generally declined in the fourth quarter. Therefore the Top-3 makers, Altek, Premier, and Ability, saw their share rise.

In the first quarter, the Top-3 makers' share will rise still. But the ranking of the Top-3 will change to Premier, Ability and Altek in that order. Altek will be relegated to third place because of major decreases in orders from Kodak and HP, while Premier's and Ability's shipments are expected to stay flat.

Chart 9: Top makers' share of overall shipments, 4Q06-1Q08

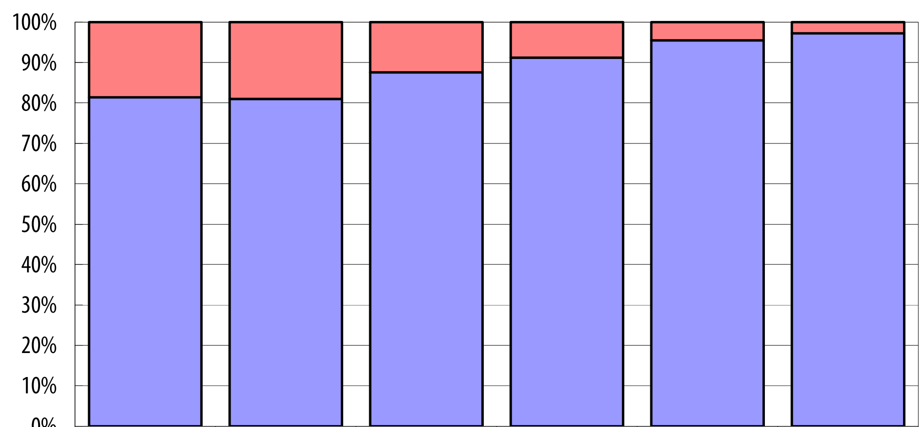


	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
Others	21.0%	20.0%	16.0%	10.0%	6.0%	4.0%
Top-3 makers	79.0%	80.0%	84.0%	90.0%	94.0%	96.0%

Source: Digitimes Research, January 2008

The Top-3 makers – Altek, Premier, and Ability – dominated the CCD segment in the fourth quarter as they did the overall shipments. In the first quarter, the Top-3 – Premier, Ability, and Altek – will see their combined share in the CCD segment rise further.

Chart 10: Top makers' share of CCD-based shipments, 4Q06-1Q08



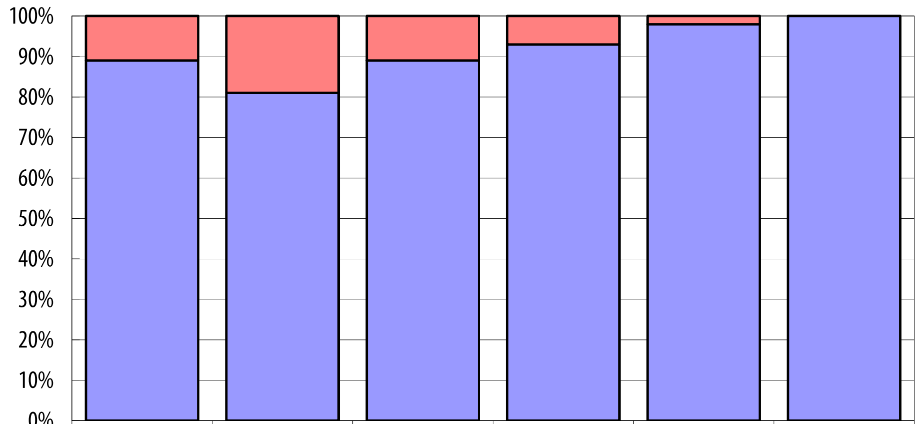
	4Q06	1Q07	2Q07	3Q07	4Q07(e)	1Q08(f)
Others	18.6%	19.0%	12.4%	8.8%	4.5%	2.8%
Top-3 makers	81.4%	81.0%	87.6%	91.2%	95.5%	97.2%

Source: Digitimes Research, January 2008

The Top-3 makers – Altek, Premier, and Ability – saw their combined share of the first-tier brands' orders rise after Kodak's orders for the number-four maker, Asia Optical, was coming to an end in the fourth quarter.

In the first quarter, the Top-3 makers, Premier, Ability, and Altek, will dominate first-tier brands' orders as Asia Optical's manufacturing ties with Kodak has ended.

Chart 11: Top makers' share in shipments to first-tier vendors, 4Q06-1Q08



	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08(f)
Others	11.0%	19.0%	11.0%	7.0%	2.0%	0.0%
Top-3 makers	89.0%	81.0%	89.0%	93.0%	98.0%	100.0%

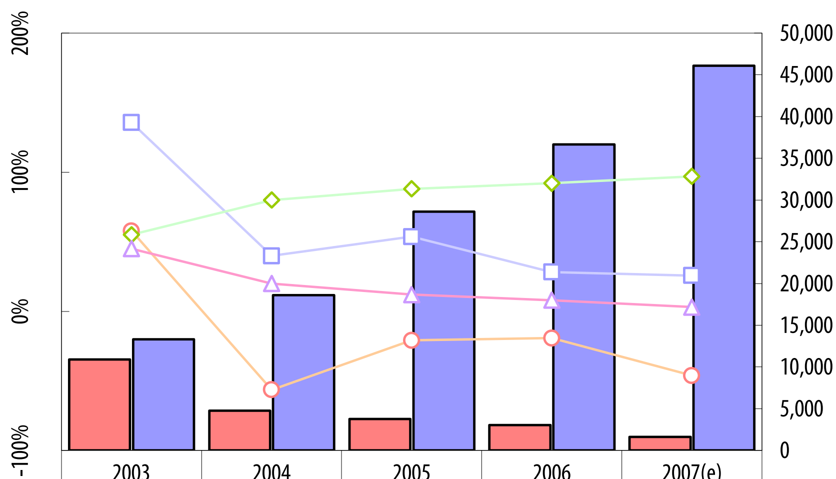
Source: Digitimes Research, January 2008

Industry watch

Taiwan makers received more orders from Sony, Nikon, Casio, Fujifilm, Pentax and Sanyo in 2007. But at the same time, orders from Samsung Electronics were shrinking, as the Korean vendor started decreasing its DSC outsourcing in the first quarter. HP's demand also dropped in the fourth quarter as a result of its strategy changes for the DSC business. Orders from channel and regional brands grew only 3% on-year, compared to 30% for 2006, as these lesser clients came under strong competition from the big players. As a result, Taiwan makers were only able to have a 20% shipment growth for 2007, lower than the global average.

But the CCD segment had a higher growth than Taiwan' overall shipment growth, and the global average for the segment in 2007. Taiwan's CCD shipments rose over 25% compared to 2006, thanks to orders from major vendors. Sony ordered almost 4 million units more than its 2006 volume, Kodak almost 3 million units more, and Nikon over 1 million units more. The CMOS segment had a sharp decline, as the DSC type was fast losing its appeal to users. The 2007 shipment volume was only about 15% of that for 2003, the peak of shipments for CMOS DSCs.

Chart 12: CCD and CMOS shipments, 2003-2007 (k units)

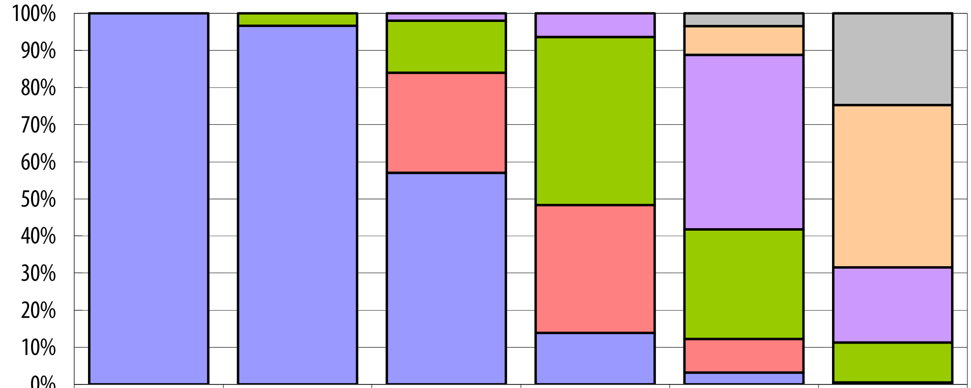


	2003	2004	2005	2006	2007(e)
CCD	13,310	18,615	28,601	36,663	46,098
CMOS	10,890	4,753	3,758	3,032	1,630
CCD Y/Y	135.7%	39.9%	53.6%	28.2%	25.7%
CMOS Y/Y	57.8%	-56.4%	-20.9%	-19.3%	-46.2%
CCD proportion	55.0%	80.0%	88.0%	92.0%	97.0%
CMOS proportion	45.0%	20.0%	12.0%	8.0%	3.0%

Source: Digitimes Research, January 2008

Taiwan makers started focusing on contract manufacturing for first-tier vendors' entry-level and mid-range models in 2005, following closely the resolution trend. In 2007, Taiwan makers managed to see the 7-megapixel segment take the top shipment spot, while the 8-megapixel segment was also growing fast. It attests to the fact that the 8-megapixel segment is turning the mainstream, and that Taiwan makers are also seeing growing orders for mid-range models from major vendors.

Chart 13: DSC by resolution, 2002-2007

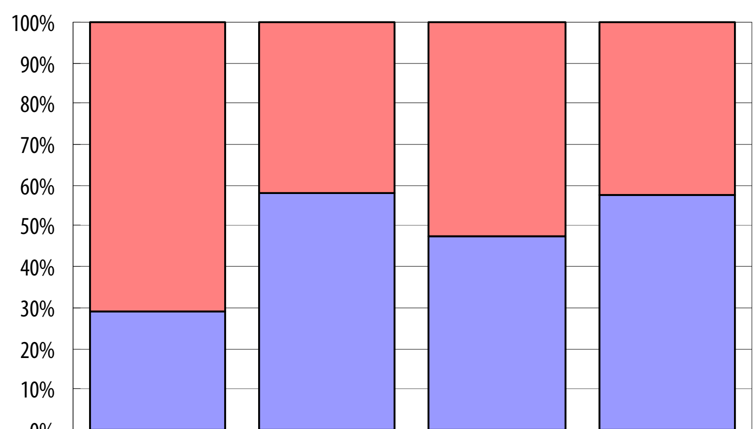


	2002	2003	2004	2005	2006	2007(e)
>=8m	0.0%	0.0%	0.0%	0.0%	3.4%	24.7%
7m	0.0%	0.0%	0.0%	0.0%	7.8%	43.7%
6m	0.0%	0.0%	2.0%	6.4%	47.1%	20.2%
5m	0.0%	3.0%	14.0%	45.3%	29.6%	10.8%
4m	0.0%	0.0%	27.0%	34.5%	9.0%	0.4%
<4m	100.0%	87.0%	57.0%	13.9%	3.2%	0.1%

Source: Digitimes Research, January 2008

Orders from Samsung and Olympus dropped a total of almost 3 million units in 2007, but first-tier brands' share of shipments still went back close to the record high level seen in 2005, thanks to the increases of 8 million units in orders from Sony, Nikon, Kodak and Fujifilm.

Chart 14: First-tier brands' share, 2004-2007

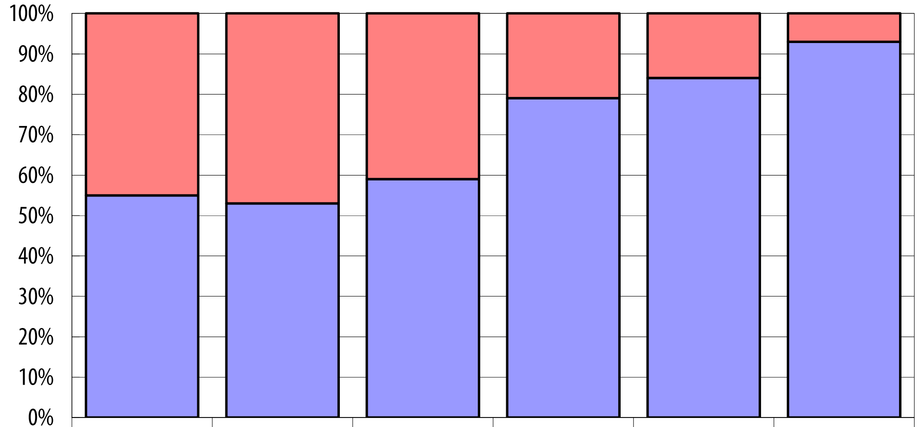


	2004	2005	2006	2007
Others	70.9%	41.9%	52.4%	42.3%
First-tier brands	29.1%	58.1%	47.6%	57.7%

Source: Digitimes Research, January 2008

Top makers have grabbed almost all orders from first-tier brands, which have allowed them to dominate the DSC sector in Taiwan. TheTop-4 makers in 2007 were Premier, Ability, Altek, and Asia Optical. The number-five Minton saw its share drop sharply last year after Samsung reduced outsourcing last year.

Chart 15: Makers' share, 2002-2007



	2002	2003	2004	2005	2006	2007(e)
Others	45.0%	47.0%	41.0%	21.0%	16.0%	7.0%
Top-4 makers	55.0%	53.0%	59.0%	79.0%	84.0%	93.0%

Source: Digitimes Research, January 2008

In 2008, major DSC vendors will be focusing their product development on better video functionality, Internet links, and touch screen interface, while taking the resolution count to 14 megapixels. But these new added functionalities will have little to do with DSC's core use of still photography, and therefore are unlikely to kick off a wave of replacement demand in mature markets.

On the other hand, handsets with camera functionalities will have a market penetration of 80% in 2008. The 3-megapixel segment will grow fast, taking 30% of the cameraphone market in 209, and 65% in 2010.

Although 3 megapixels are way lower than the mainstream DSC resolution and handsets' optical lens functionalities have limitations, high-resolution cameraphones with appeal of non-optical-related added values – such as high ISO, camera-style display screens, multi-mode filming, face recognition features, anti-shock, TV out – could be described as DSCs with phone functionalities. Vendors of these handsets apparently hope that users can do without buying a DSC.

The growing popularity of HSPA handsets that allow users to pose their pictures or videos online directly from the phones will also be a selling point for cameraphones. On the other hand, many DSC vendors are also incorporating direct Internet connectivity in their cameras. Such HSPA cameraphones are expected to impact the growth of mature DSC markets.

With DSCs' new functionalities unlikely to drive replacement demand, and handsets' camera features increasingly attractive, DSC vendors are likely to accelerate the development of emerging markets, opening up more opportunities for their manufacturing partners in Taiwan.

There are a few factors driving the growth of orders for Taiwan's DSC makers: clients' need to stay touch with the low cost trend and to meet the demand from emerging markets; Sanyo, a chief client of outsourced DSC orders, is struggling to improve its cost competitiveness; stable partnerships between Taiwan makers and their Japanese clients. In the next three years, orders from brand-name vendors – except the ones that maintain 100% in-house production – will continue to grow steadily. The most significant rise in orders will be coming from Fujifilm.

While international vendors increase their outsourcing to Taiwan to improve their cost competitiveness, they will at the same time reduce the shipments to regional and channel brands, which have accounted for rather high proportions in Taiwan's DSC shipments. With the Top-3 makers continuing to dominate the shipments, the Taiwan DSC sector will see increased service for major brands while cutting down on the manufacturing for regional and channel brands.

Flextronics is coming as a strong competitor for Taiwan's DSC makers. It made its debut in the DSC sector by acquiring Casio's DSC plants in 2004. But as it started by providing OEM services for clients, it was then not a direct competition for Taiwan makers.

But in 2006, Flextronics geared up its DSC manufacturing by acquiring Kodak's design center in Japan and manufacturing facilities in Shanghai, China. Apart from obtaining orders totaling about 1 million units, it also acquired the ability to design DSCs. In the fourth quarter of 2007, HP announced that it was looking for an outside partner to handle the marketing and manufacturing of its brand-name DSCs. Flextronics has been said to have achieved HP's strict validation to handle the vendor's DSC business.

In 2008, Nikon, Olympus, and Fujifilm are expected to release small quantities of orders to Flextronics. This attests to Flextronics' manufacturing capabilities, as Japanese vendors usually have strict requirements for their outsourcing partners. It is very likely Flextronics' partnerships with these Japanese clients will expand in the future.

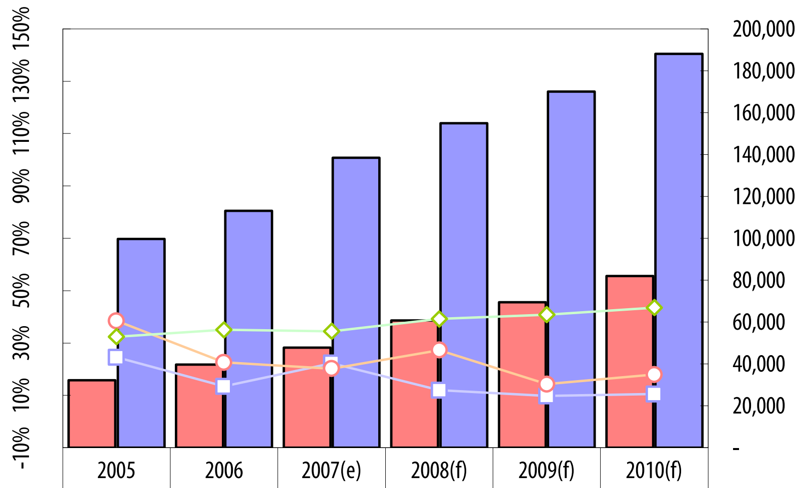
Apart from Flextronics' manufacturing capabilities, Japanese vendors are trying to diversify their risks by seeking outsourcing partners other than their existing ones in Taiwan because the Top-3 Taiwanese makers are already too much in control of the shipments.

It is yet to be confirmed that HP and Flextronics have already teamed up for the DSC business. Excluding possible orders from HP, Flextronics' shipments to Casio, Kodak, Nikon, Olympus and Fujifilm are likely to total almost 10 million units in 2008, an amount close to the annual shipments of Taiwan's Ability or Altek, each of whom shipped about 12 million units in 2007. Flextronics' threat is tangible.

Outlook until 2010

Most DSC vendors are expected to release more orders to Taiwan in the next three years. With the worldwide market growth slowing down, Taiwan's global market share may remain at high levels through 2010. But Taiwan makers are facing growing competition from Flextronics.

Chart 16: Worldwide and Taiwan shipments, 2005-2010 (k units)

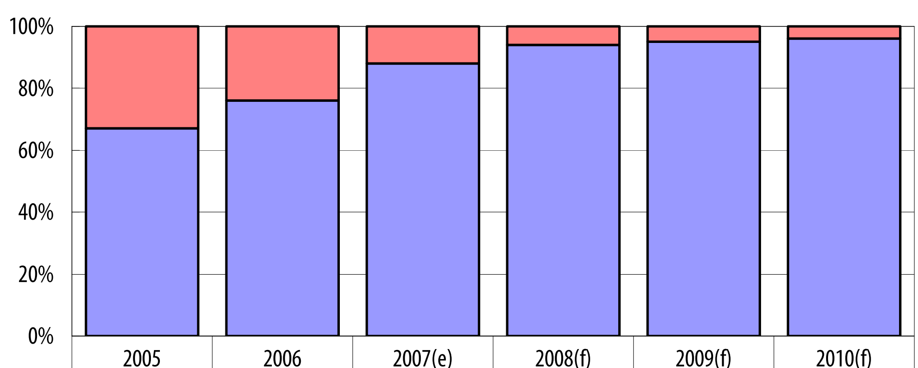


	2005	2006	2007(e)	2008(f)	2009(f)	2010(f)
Worldwide shipments	99,709	113,125	138,380	154,923	170,082	188,041
Taiwan shipments	32,359	39,695	47,728	60,783	69,507	82,000
Worldwide growth	24.6%	13.5%	22.3%	12.0%	9.8%	10.6%
Taiwan growth	38.5%	22.7%	20.2%	27.4%	14.4%	18.0%
Taiwan market share	32.5%	35.1%	34.5%	39.2%	40.9%	43.6%

Source: Digitimes Research, January 2008

The Top-3 makers will continue to dominate Taiwan's DSC industry. But while Premier, which has mostly been the top maker, managed to retain the crown in 2007, it is facing strong competition from Ability and Altek.

Chart 17: Top-3 makers' share of shipments, 2005-2010



	2005	2006	2007(e)	2008(f)	2009(f)	2010(f)
Others	33%	24%	12%	6%	5%	4%
Top-3 makers	67%	76%	88%	94%	95%	96%

Source: Digitimes Research, January 2008