

November 17, 2004

PRESS INFORMATION

Japan Recording-Media Industries Association

Recordable DVDs Propel Recording Media Business Forecasts for Recording Media Global Demand and Production in 2005

Tokyo, Japan, November 17, 2004 — Japan Recording-Media Industries Association (chairperson: Shigetaka Komori) announced its forecasts for global demand by region and production of recording media products in 2005 based on its estimates for 2004. The product categories addressed in the survey are audio tape, audio MiniDisks (MDs), video tape, floppy disks, MOs, CD-R/RWs, recordable DVDs and small-sized memory cards. The forecast indicates that global demand for recordable DVDs will follow only CD-Rs in scale and have become a driving force in the recording media business. The small-sized memory card business is also coming into the limelight.

Note: In the past, forecasts grouped products into audio media, video media, data media and small-sized memory card categories, but as media applications diversify including the establishment of markets for recordable DVDs for video use and data use, it has become increasingly difficult to reflect accurately market conditions using the prior categories. Consequently, beginning with this forecast, products will be grouped into magnetic media, optical disks and semiconductor memory cards.

Forecasts for Recording Media Global Demand and Production in 2005

Magnetic Media

◆ Audio Media

Blank Audio Cassettes — Global demand for audio cassette tapes (blank tapes) is expected to fall 20% to 395 million units and domestic demand will drop 20% to 61 million units. In conjunction with the shift from tapes to disks, replacement media including audio MDs and audio CD-Rs have become more prominent while the proliferation of small-sized memory cards and portable audio devices with hard disk drives is having a significant impact on the decline in demand for audio cassette tapes. Global production of **audio tapes (including software)** will decrease 26% to 913 million units, falling below 1 billion units. Global demand for educational materials, however, remains strong, and demand for software such as music tapes remains solid in

some regions including Central and South America and the Middle East. As a result, global production remains at high levels.

Audio MDs — Global demand for audio MDs will fall 7% to 183 million units, and domestic demand will decline 5% to 144 million units. The Japanese market, which is the central market for demand, took a downward turn starting in 2004. This is the result of the development of environments in which users can use PCs to acquire content easily and a decline in demand in conjunction with the appearance small-sized memory cards and portable audio devices with hard disk drives, as in the case of audio cassette tapes. Global production of **audio MDs** will decrease 8% to 187 million units. Some overseas manufacturers are withdrawing from the market, and Japanese manufacturers will account for some 87% of global production. All production by Japanese manufacturers takes place in Japan.

◆ Video Tape

Full-size Blank Video Cassettes — Global demand for full-size video cassettes (blank tapes) is expected to fall 18% to 602 million units, while domestic demand will drop 20% to 136 million units. The large-scale global proliferation of DVD recorders is expected to lead to a significant drop in demand for video cassettes. Global production of **full-size video cassettes (including software)** will fall 17% to 1,010 million units as a result of the decline in demand for blank cassettes and the rapid expansion of software on DVDs in conjunction with the global expansion of DVD recorders. Overseas manufacturers' share of global production will increase to approximately 80%.

Camcorder Cassettes — Global demand for camcorder cassettes (VHS-C, 8 mm and Mini DV) will increase 2% to 255 million units. The increase in demand for Mini DV is supported by the steady expansion of digital video cameras (DVCs) in the North American and European markets, and consequently, global demand for **Mini DV** is expected to grow by 12% to 172 million units, while domestic demand will increase 2% to 42 million units. Mini DV will account for 67% of global demand for camcorder cassettes and for 91% of demand in Japan.

Global production of **camcorder cassettes** will increase 4% to 291 million units, of which production of **Mini DV** will increase 12% to 209 million units. Global production of Mini DV will account for 72% of all camcorder cassette production. All camcorder cassettes are produced by Japanese manufacturers in Japan.

◆ Floppy Disks

Floppy Disks — Global demand for floppy disks will decrease 15% to 842 million units. Domestic demand will continue its rapid decline, falling 19% to 67 million units. The replacement of floppy disk software by CD-ROMs and DVD-ROMs and the shift

from use of floppy disks to transfer data to CD-Rs, USB memory cards and other media are having major impact on the fall in demand. Global **floppy disk** production will decrease 10% to 1,524 million units. Japanese manufacturers account for 18% of all production, but production of finished products in Japan ended in 2001.

Optical Disks

◆ **CD-R/RW Disks**

Data CD-Rs — Global demand for data CD-Rs is expected to experience continued stable growth, increasing 3% to 7,922 million units. Domestic demand, however, is expected to decrease 3% to 378 million units. In Japan, there will be a shift to recordable DVDs as use of high-resolution digital video cameras (DVCs) and digital still cameras (DSCs) increases and users find that CD-Rs do not offer adequate storage capacity. The proliferation and diversification of storage devices such as small-sized memory cards and USB memory cards is also expected to contribute to the decline in demand in Japan.

Audio CD-Rs — Global demand for audio CD-Rs will be flat at 302 million units, and domestic demand will also remain flat at 25 million units. Global demand for audio CD-Rs will exceed that for audio MDs. In Japan, the development and sale of copy-control CDs is being reviewed, but whether this will lead to an increase in demand for audio CD-Rs will warrant further monitoring.

Data and Audio CD-Rs — Global production of CD-R disks (including data and audio CD-Rs) will increase 4% to 8,794 million units, but many Japanese manufacturers are shifting production from CD-Rs to recordable DVDs and new market entrants in China and other regions are increasing, so production of CD-Rs by Japanese makers is expected to decrease for the first time. Japanese manufacturers will respond to changes in demand and ensure stable supplies through ODM production.

Data and Audio CD-RWs — Global demand for CD-RWs (including data and audio CD-RWs) is expected to decrease 4% to 292 million units. The competition with recordable DVDs for data storage and backup storage, the primary uses of CD-RWs, is having a major impact, and demand has started a moderate decline.

◆ **Recordable DVDs**

Recordable DVDs — Global demand for recordable DVDs will increase to 2,451 million units including **write-once disks**, which will grow 81% to 2,153 million units, and **re-writable disks**, which will expand 68% to 298 million units. In Japan, in the video DVD sector, demand for write-once DVDs will increase to 282 million units

(year-on-year growth of 84%) and account for 78% of the total, and demand for re-writable disks will increase to 79 million units (year-on-year growth of 65%) and account for 22% of the total, while in the data DVD sector, demand for write-once DVDs will increase to 213 million units (year-on-year growth of 70%) and account for 89% of the total, and demand for re-writable disks will increase to 26 million units (year-on-year growth of 44%) and account for 11% of the total. With respect to video recording, the shift from tape to recordable DVD is prominent, and the adoption of DVD drives on PC is becoming standard, so it is expected that infrastructure to use write-once DVDs will expand in the future.

Global production of write-once disks will increase 64% to 2,627 million units, and that of re-writable disks will grow 69% to 331 million units for total recordable DVD production of almost 3,000 million units. Japanese manufacturers produce 54% of write-once disks and 64% of re-writable disks, but the share of overseas manufacturers is increasing rapidly. The scale of global demand for re-writable disks is still small and manufacture of the disks requires advanced technologies including high-precision stamper technologies, so market entry by overseas manufacturers are still few in number.

◆ **Magneto-Optical Disks**

3.5" MO Disks — Global demand for 3.5" MO disks is expected to fall 7% to 12.8 million units. Demand in Japan accounts for 94% of global demand, and demand has been declining since peaking in 2000. Demand in the printing and advertising production and other specialized fields for MO disks is stable as a result of their low rates of data errors, but drives are not often installed on PCs as standard equipment and growth in demand among general users has been weak, leading to the decline in overall demand. Global production of **3.5" MO disks** is expected to fall 12% to 15.4 million units. As a result of the decline in demand, overseas manufacturers are withdrawing from the market, and Japanese manufacturers supply the entire world.

5.25" MO Disks — Global demand for 5.25" MO disks will drop 17% to 1.16 million units. Compared to competing media such as magnetic tape, the storage capacity of 5.25" MO disks is small and they are expensive, resulting in declining demand. The decline in global production will continue, with production expected to plunge 23% to 1.27 million units.

Semiconductor Memory Cards

◆ **Small-sized Memory Cards**

Small-sized Memory Cards — Demand for small-sized memory cards is forecast to grow 5% from 2004 to 65 million units. In the primary areas of demand for small-sized memory cards such as cell phones and digital cameras, demand for bundled units will decline rapidly, resulting in sluggish demand overall, but in conjunction with increasing picture quality of hardware, demand for high-capacity memory cards 128 MB and larger will be strong. Demand for SD memory cards and memory sticks will be strong, while demand for xD-picture cards will decrease slightly and demand for CompactFlash cards will decline substantially. Other cards include SmartMedia, MMC, T-Flash and ATA memory cards.

Forecasts for Global Demand and Production

(1) Magnetic Media

[Audio Media]

Global Demand for Blank Audio Cassette

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	76(80%)	61(80%)
North America	104(83%)	87(84%)
Europe	92(73%)	70(76%)
Other areas	219(83%)	177(81%)
Global Total	491(80%)	395(80%)

Percentage in parenthesis shows comparison with previous year.

Blank tape only. Actual figures.

Global Production of Audio Tape

	Units in millions	
	2004 Estimates	2005 Forecasts
Japanese makers	384(87%)	313(82%)
Overseas makers	850(77%)	600(71%)
Global Total	1,234(78%)	913(74%)

Percentage in parenthesis shows comparison with previous year.

Figures include demand for software. Converted to quantity of C-60.

Global Demand for Audio MD

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	152(95%)	144(95%)
North America	7(100%)	6(86%)
Europe	26(84%)	22(85%)
Other areas	11(100%)	11(100%)
Global Total	196(94%)	183(93%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of Audio MD

	Units in millions	
	2004 Estimates	2005 Forecasts
Japanese makers	176(96%)	162(92%)
Overseas makers	28(93%)	25(89%)
Global Total	204(95%)	187(92%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

[Video Tape]

Global Demand for Full-size Blank Video Cassette

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	170(85%)	136(80%)
North America	257(86%)	215(84%)
Europe	198(83%)	157(79%)
Other areas	107(89%)	94(88%)
Global Total	732(85%)	602(82%)

Percentage in parenthesis shows comparison with previous year.

Blank tape only. Actual figures.

Global Production of Video Tape

	Units in millions	
	2004 Estimates	2005 Forecasts
Japanese makers	262(73%)	210(80%)
Overseas makers	950(86%)	800(84%)
Global Total	1,212(83%)	1,010(83%)

Percentage in parenthesis shows comparison with previous year.

Production includes demand for software. Converted to quantity of T-120.

Global Demand for Camcorder Cassette

Units in millions

	2004 Estimates	2005 Forecasts
Japan	46(102%)	46(100%)
North America	95(100%)	94(99%)
Europe	72(107%)	73(101%)
Other areas	37(116%)	42(114%)
Global Total	250(105%)	255(102%)

Percentage in parenthesis shows comparison with previous year.

Includes VHS-C, 8mm and Mini DV.

Actual figures.

Global Production of Camcorder Cassette

Units in millions

	2004 Estimates	2005 Forecasts
Japanese makers	279(110%)	291(104%)
Overseas makers	0	0
Global Total	279(110%)	291(104%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Demand for Mini DV

Units in millions

	2004 Estimates	2005 Forecasts
Japan	41(108%)	42(102%)
North America	39(122%)	44(113%)
Europe	48(123%)	54(113%)
Other areas	26(130%)	32(123%)
Global Total	154(119%)	172(112%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of Mini DV

Units in millions

	2004 Estimates	2005 Forecasts
Japanese makers	186(123%)	209(112%)
Overseas makers	0	0
Global Total	186(123%)	209(112%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

[Floppy Disk]

Global Demand for Floppy Disk

Units in millions

	2004 Estimates	2005 Forecasts
Japan	83(83%)	67(81%)
North America	278(81%)	228(82%)
Europe	319(87%)	267(84%)
Other areas	307(93%)	280(91%)
Global Total	987(87%)	842(85%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of Floppy Disk

Units in millions

	2004 Estimates	2005 Forecasts
Japanese makers	308(91%)	273(89%)
Overseas makers	1,390(90%)	1,251(90%)
Global Total	1,698(90%)	1,524(90%)

Percentage in parenthesis shows comparison with previous year.

Based on completed products. Actual figures.

(2) Optical Disk

[CD-R/RW]

Global Demand for Data CD-R

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	390(98%)	378(97%)
North America	2,713(106%)	2,723(100%)
Europe	3,039(109%)	3,108(102%)
Other areas	1,541(119%)	1,713(111%)
Global Total	7,683(109%)	7,922(103%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of CD-R

	Units in millions	
	2004 Estimates	2005 Forecasts
Japanese makers	2,455(104%)	2,317(94%)
Overseas makers	6,003(112%)	6,477(108%)
Global Total	8,458(110%)	8,794(104%)

Percentage in parenthesis shows comparison with previous year.

Production includes CD-R for data and audio.

Production includes ODM. Actual figures.

Global Demand for Audio CD-R

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	25(100%)	25(100%)
North America	197(106%)	197(100%)
Europe	60(98%)	59(98%)
Other areas	21(105%)	21(100%)
Global Total	303(104%)	302(100%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Demand for CD-RW

	Units in millions	
	2004 Estimates	2005 Forecasts
Japan	26(96%)	24(92%)
North America	118(99%)	114(97%)
Europe	120(98%)	115(96%)
Other areas	39(103%)	39(100%)
Global Total	303(99%)	292(96%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

[Recordable DVD]

Global Demand for Write-Once DVD

Units in millions

	2004 Estimates	2005 Forecasts
Japan	278(244%)	495(178%)
North America	459(287%)	806(176%)
Europe	375(315%)	703(187%)
Other areas	80(348%)	149(186%)
Global Total	1,192(287%)	2,153(181%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Demand for Re-writable DVD

Units in millions

	2004 Estimates	2005 Forecasts
Japan	66(183%)	105(159%)
North America	45(237%)	78(173%)
Europe	57(228%)	98(172%)
Other areas	9(300%)	17(189%)
Global Total	177(213%)	298(168%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Japanese Demand for Video Use DVD

Units in millions

	2004 Estimates	2005 Forecasts
Write-Once DVD	153	282
Percentage of total	76%	78%
Re-writable DVD	48	79
Percentage of total	24%	22%
Total	201	361

Actual figures.

Global Production of Write-Once DVD

Units in millions

	2004 Estimates	2005 Forecasts
Japanese makers	900(260%)	1,427(159%)
Overseas makers	700(700%)	1,200(171%)
Global Total	1,600(359%)	2,627(164%)

Percentage in parenthesis shows comparison with previous year.

Production includes ODM. Actual figures.

Global Production of Re-writable DVD

Units in millions

	2004 Estimates	2005 Forecasts
Japanese makers	126(188%)	211(167%)
Overseas makers	70(350%)	120(171%)
Global Total	196(225%)	331(169%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Japanese Demand for Data Use DVD

Units in millions

	2004 Estimates	2005 Forecasts
Write-Once DVD	125	213
Percentage of total	87%	89%
Re-writable DVD	18	26
Percentage of total	13%	11%
Total	143	239

Actual figures.

[Magneto-Optical Disk]

Global Demand for 3.5" MO

	Units in thousands	
	2004 Estimates	2005 Forecasts
Japan	14,400(86%)	12,000(83%)
North America	190(79%)	150(79%)
Europe	360(82%)	300(83%)
Other areas	440(65%)	350(80%)
Global Total	15,390(85%)	12,800(83%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of 3.5" MO

	Units in thousands	
	2004 Estimates	2005 Forecasts
Japanese makers	17,540(94%)	15,400(88%)
Overseas makers	0	0
Global Total	17,540(94%)	15,400(88%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Demand for 5.25" MO

	Units in thousands	
	2004 Estimates	2005 Forecasts
Japan	150(83%)	130(87%)
North America	630(86%)	520(83%)
Europe	500(86%)	420(84%)
Other areas	110(85%)	90(82%)
Global Total	1,390(86%)	1,160(83%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Global Production of 5.25" MO

	Units in thousands	
	2004 Estimates	2005 Forecasts
Japanese makers	1,500(84%)	1,140(76%)
Overseas makers	150(83%)	130(87%)
Global Total	1,650(84%)	1,270(77%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

(3) Semiconductor Memory Cards

[Small-sized Memory Cards]

Japanese Demand for Small-sized Memory Cards

	Units in thousands	
	2004 Estimates	2005 Forecasts
SD Memory Card	26,600(176%)	31,800(120%)
Memory Stick	17,400(135%)	20,100(116%)
Compact Flash	8,100(88%)	5,100(63%)
xD-Picture Card	6,800(133%)	6,300(93%)
Other Cards	3,100(84%)	1,700(55%)
Total Japan	62,000(135%)	65,000(105%)

Percentage in parenthesis shows comparison with previous year.

Actual figures.

Other Cards include SmartMedia, MMC, T-Flash and ATA.

For more information, please fax to:
 Japan Recording-Media Industries Association
 Fax: 03-3501-0630
 (Writing in English is acceptable)