

## Estimated Optical Disc Production Capacity in 80 Countries/Territories<sup>1</sup>

Piracy of optical disc (OD) products today continues to cause major losses to all the copyright industries. Increasingly, all sectors of the copyright industry use a common set of media to distribute their products worldwide. These “optical disc” products include formats such as compact discs (CD), video CDs (VCD), CD-ROMs, CD-Recordables (CD-Rs), digital versatile discs (DVDs) and DVD-Recordables (DVD-Rs). An explosion in the world’s capacity to produce optical disc products has been driven by the ever-growing worldwide demand for copyrighted high-tech, entertainment and educational products, but also by the potential for pirates to generate billions of dollars in illegal income. Optical disc production capacity has for years greatly exceeded the legitimate demand of all types of optical discs be it pre-recorded discs or blank media, with much of the difference inuring to the benefit of illegal pirate enterprises. Increasingly, blank recordable optical media are also used to “burn” unauthorized copies on a commercial basis. Pirate CDs, VCDs, CD-ROMs and DVDs, CD-Rs and DVD-Rs containing protected music, sound recordings, audiovisual works, business and entertainment software and books and journals have quickly decimated the market for legitimate U.S. products. With the increased and more effective regulation of factory production, “burning” has nearly become our industries’ biggest “hard goods” piracy threat.

The growth in the number and capacity of optical disc factories around the globe has been staggering. Based on our survey of optical disc production in 80 countries/territories:

- There were as many as **1,077 optical disc production plants** in 2006.
- Those plants had at least **8,928 production lines**.
- Total production capacity worldwide was estimated at more than **31.8 billion discs per year** in 2006.

It must be noted that in certain markets, the mere fact that there are sizable numbers of plants and production lines does not directly correlate to piracy or over-production. This is due to the fact that the plants in many markets, such as Hong Kong, Taiwan, the United States, and many European markets, fill legal orders for finished and blank discs. The following chart details this information. For 2007, IIPA identifies the key optical disc piracy production trouble spots as: **China, Russia, Thailand, Indonesia, and Nigeria**. These are markets where immediate actions should be taken by the governments to curtail optical disc pirate production.

Estimated Optical Disc Production Capacity in 80 Countries/Territories						
	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>ASIA</b>						
Australia <sup>2</sup>	13	13	33	24	115.5	84.0
Bangladesh	6	2	14	6	49.0	21.0
Burma/Myanmar	NA	1	NA	1	NA	3.5
Cambodia	NA	1	NA	1	NA	3.5
China	92	86	1,482	1,374	5,187.0	4,809.0
Hong Kong	90	106	733	817	2,565.5	2,859.5
India	20	20	166	166	581.0	581.0
Indonesia	28	29	145	100	507.5	300.0
Japan <sup>2</sup>	32	32	260	NA	910.0	NA
Korea	28	28	75	78	262.5	273.0
Laos	NA	0	NA	0	NA	0.0
Macau	1	3	1	3	3.5	10.5
Malaysia	32	41	163	NA	570.5	NA
New Zealand	3	3	6	3	21.0	10.5
Pakistan	1	11	1	38	3.5	133.0
Philippines	10	11	45	38	157.5	133.0
Singapore	20	20	99	106	346.5	371.0
Sri Lanka	2	2	2	2	7.0	7.0
Taiwan	83	89	2,795	2,755	9,782.5	9,642.5 <sup>3</sup>
Thailand	41	42	190	155	665.0	542.5
Vietnam	5	5	12	12	42.0	42.0
<b>SUB-TOTAL</b>	<b>507</b>	<b>545</b>	<b>6,222</b>	<b>5,679</b>	<b>22,071.0</b>	<b>19,826.5</b>

	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>E. EUROPE/CIS</b>						
Belarus	1	1	2	2	7.0	7.0
Bulgaria	9	9	13	18	45.5	63.0 <sup>4</sup>
Croatia	NA	NA	NA	NA	NA	NA
Czech Republic	4	4	14	14	49.0	NA
Estonia	3	2	4	2	14.0	7.0
Hungary	4	4	14	14	49.0	49.0
Kazakhstan	2	2	2	2	11.6 <sup>4</sup>	11.6 <sup>4</sup>
Lithuania	1	1	2	2	7.0	7.0
Poland	11	9	153	122	830.0 <sup>4</sup>	775.0 <sup>4</sup>
Republic of Montenegro <sup>5</sup>	NA	NA	NA	NA	NA	NA
Republic of Serbia <sup>5</sup>	4	4	6	10	21.0	35.0
Romania	2	2	3	3	10.5	10.5
Russia	53	54	130	113	455.0	395.5
Slovenia	2	2	5	5	17.5	17.5
Ukraine	7	5	17	14	90.0 <sup>4</sup>	49.0 <sup>4</sup>
<b>SUB-TOTAL</b>	<b>103</b>	<b>99</b>	<b>365</b>	<b>321</b>	<b>1,607.1</b>	<b>1,427.1</b>

	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>WESTERN EUROPE</b>						
Austria	5	5	10	8	35.0	28.0
Belgium	3	3	17	25	59.5	87.5
Denmark	4	5	36	36	126.0	126.0
Finland	2	3	4	6	14.0	21.0
France	15	18	146	204	511.0	714.0
Germany	28	42	240	144	840.0	504.0
Greece	11	12	31	40	108.5	140.0
Ireland	8	8	70	70	245.0	245.0
Italy	37	29	124	101	434.0	353.5
Luxembourg	1	2	18	19	63.0	66.5
Netherlands	13	17	96	107	336.0	374.5
Portugal	2	3	5	5	17.5	17.5
San Marino	1	2	1	2	3.5	7.0
Spain	16	16	108	119	378.0	416.5
Sweden	2	5	3	12	10.5	42.0
Switzerland	3	3	12	11	42.0	38.5
United Kingdom	14	16	112	128	392.0	448.0
<b>SUB-TOTAL</b>	<b>165</b>	<b>189</b>	<b>1,033</b>	<b>1,037</b>	<b>3,615.5</b>	<b>3,629.5</b>

	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>WESTERN HEMISPHERE</b>						
Argentina	9	9	30	30	105.0	105.0
Brazil	13	13	84	88	294.0	308.0
Canada	17	17	130	132	455.0	462.0
Chile	2	2	2	2	7.0	7.0
Colombia	2	2	8	9	28.0	31.5
Costa Rica	1	1	1	1	3.5	3.5
Dominican Rep.	1	1	1	1	3.5	3.5
Mexico	10	9	208	205	728.0	717.5
Paraguay	4	1	15	1	52.5	3.5
Peru	2	2	3	3	10.5	10.5
United States	185	181	679	740	2,376.5	2,590.0
Uruguay	1	1	1	1	3.5	3.5
Venezuela	2	2	7	7	24.5	24.5
<b>SUB-TOTAL</b>	<b>249</b>	<b>241</b>	<b>1,169</b>	<b>1,220</b>	<b>4,091.5</b>	<b>4,270.0</b>

	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>MIDDLE EAST</b>						
Algeria	4	4	10	10	35.0	35.0
Egypt	3	4	5	6	17.5	21.0
Iran	2	2	2	3	7.0	10.5
Israel	5	7	15	19	52.5	66.5
Jordan	1	1	1	1	3.5	3.5
Kuwait	1	1	3	3	10.5	10.5
Lebanon	1	1	1	1	3.5	3.5
Palestinian Auth.	1	1	1	1	3.5	3.5
Saudi Arabia	1	1	1	6	3.5	21.0
Syria	2	2	2	5	7.0	17.5
Turkey	10	10	21	25	73.5	87.5
<b>SUB-TOTAL</b>	<b>31</b>	<b>34</b>	<b>62</b>	<b>80</b>	<b>217.0</b>	<b>280.0</b>

	Plants (Including CD-R)		Production Lines (Including CD-R)		Capacity in Millions (Including CD-R)	
	2006	2005	2006	2005	2006	2005
<b>AFRICA</b>						
Nigeria	15	15	52	36	182.0	126.0
Senegal	1	1	1	1	3.5	3.5
South Africa	6	5	24	24	84.0	84.0
<b>SUB-TOTAL</b>	<b>22</b>	<b>21</b>	<b>77</b>	<b>61</b>	<b>269.5</b>	<b>213.5</b>
<b>TOTALS</b>	<b>1,077</b>	<b>1,129</b>	<b>8,928</b>	<b>8,398</b>	<b>31,871.6</b>	<b>29,646.6</b>

<sup>1</sup> The methodology used by IIPA to calculate estimated capacity is discussed in Appendix B of IIPA's 2007 Special 301 submission at <http://www.iipa.com/pdf/2007/spec301methodology.pdf>.

<sup>2</sup> In Australia and Japan, we believe there are more production lines but that the lines listed represent those that are dedicated to production of finished discs.

<sup>3</sup> We revise our Taiwan estimate for 2005 for disc production capacity based on updated line numbers.

<sup>4</sup> The capacity numbers for Bulgaria (2005 numbers only) and for Kazakhstan, Poland, and Ukraine do not follow the IIPA methodology, and are based on plant visits and/or different per line capacity estimates.

<sup>5</sup> Formerly part of Serbia and Montenegro, the Republic of Montenegro formed in June 2006, and it is unclear whether any of the plants in the former Serbia and Montenegro are located in the territory of the Republic of Montenegro, hence the chart lists 'NA.'