

**Quantifying Electronic Product Brand Market Share as a Metric
for Apportioning Manufacturer Share of Recycling System Costs:**

Project Report

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1. Introduction

The recycling of end-of-life televisions, computers and other electronic products continues to be a major focus of solid waste managers in Florida and the rest of the United States. There is consensus that this recycling service should be provided via a shared responsibility model in which consumers, manufacturers, distributors and government should all have a part. A major impediment to establishing a sustainable electronics recycling system is how to fairly apportion the manufacturers' share of funding for this service. Manufacturers want to ensure that all manufacturers pay their "fair share" thereby ensuring that no competitor gains an unfair marketplace advantage.

Throughout this report, "manufacturer" is used broadly to mean "the entity that produces, owns or is otherwise financially responsible for a particular brand name under any voluntary or mandatory recycling system."

One method proposed for addressing equitable costing has been to apportion manufacturer support based upon a manufacturer's share of new product sales. An example of this method is the California system that imposes an advanced recycling fee on specified electronic products at point of sale. The fees are then used to reimburse private firms that collect and recycle electronic products.

A second method of equitably apportioning manufacturer support could be based upon actual sorts by brand name of products collected for recycling. Examples of this method include the Maine and Washington systems that bill manufacturers for collection and recycling based upon the quantities by brand that are actually recycled. The Florida Department of Environmental Protection (Department) has collected such brand data as part of its Electronic Product Brand Distribution Project. Between April 2004 and June 2006, Florida-based electronic recycling firms sorted, by product and brand, 104 selected loads (1,623,445 pounds, 55,023 product units) of electronic products collected for recycling in Florida. See Table 1 below for a summary of product groups, weights and number of units. The targeted products were collected from the residential and small business sources that are generally served by county recycling or thrift store donation services.

Table 1: Products collected for recycling and sorted by brand in the Florida Electronic Product Brand Distribution Project between April 2004 and June 2006

Product	Units	Weight (Pounds)
Televisions	11,519	726,234
Monitors	12,575	369,701
Computers	12,214	268,388
Printers	5,093	93,519
Other	13,622	165,603
Total	55,023	1,623,445

There has been much discussion, e.g., the 2001-2005 National Electronics Product Stewardship Initiative (NEPSI), about the relative fairness of these two methods of apportioning manufacturer funding. Such discussions to date have found it difficult to compare units sold to units received for recycling as the former market share data are typically given in dollar value of products sold, not in number of units sold. Under this grant project, the Department purchased research from commercial market research firms that provided market share data for the U.S. market, by brand name, in number of units sold for the most recent year for which data were available. For this analysis, it is assumed that brand market share percentages for sales in the U.S. market would be similar to brand market share percentages for sales in the Florida market. By comparing the brand share of products received for recycling with the brand share of products sold, one can determine whether, and to what extent, either method affects the relative competitive position of certain brand manufacturers. This project report is a public document that presents a methodology and data that can be used for a fact-based evaluation of the marketplace ramifications of the two methods of apportioning manufacturer funding of an electronics recycling system. This evaluation is another tool that should help the federal and state governments, manufacturers and other stakeholder organizations to speed the development of a sustainable, market-driven system for recycling electronic scrap products and to increase the national recycling rate.

2. Methodology

This project examined four major electronic product groups: televisions, computer monitors, computers and printers. The market share data of units sold in the United States market were purchased under a competitive request for proposals. Five major commercial market research firms were contacted: Frost and Sullivan (San Antonio); Research and Markets (Dublin, Ireland); IDC (Framingham, MA); iSuppli (formerly Stanford Resources) (El Segundo, CA); Gartner (Stamford, Ct). The request for proposals (see Appendix 3) was transmitted via email to the appropriate contacts at each firm. Proposals were received from three firms: Frost and Sullivan; IDC and iSuppli.

The market share data were purchased from two firms selected on the basis of cost and data availability. These data covered the most recent 12 month period for which data were available. Data on the television and computer monitor product groups for the period July 2004 - June 2005 were purchased from iSuppli (El Segundo, CA). Data on the computer and printer product groups for the period January – December 2005 were purchased from IDC (Framingham, MA). Data were provided in electronic Microsoft Excel® spreadsheet and summarized in an electronic Microsoft PowerPoint® presentation format. The total cost for the market share data on the four product groups was \$24,950.

The brand distribution of products received for recycling was provided by the Department's ongoing Electronic Product Brand Distribution Project as described in the Introduction above. See www.dep.state.fl.us/waste/categories/electronics/pages/FloridaElectronicProductBrandDistributionProject.htm and Appendix 4 for details. Data from loads received and sorted during the same time period as covered by the market share data were retrieved and are presented in this report.

Much of the discussion below analyzes the brand distribution of four major electronic product groups: television, computer monitors, computers and printers. Brand distributions are compared for products sold in the United States market with products received for recycling in Florida municipal electronics recycling programs or thrift store donation services. For the most part, the products received for recycling came from household or small business sources. The sales data reflect sales to home users, small office (1-9 employees) users and small business (10-99 employees) users. The products in both data sets, received for recycling and sales, are assumed to be used by and collected from home/household, small office and small business users.

For purposes of this report, the term “brand name” is used for both the sales data and the recycling data. The market research firms, IDC and iSuppli, that provided the sales data reported these names to the Department as “vendors” in the raw data tables or interchangeably as “vendors,” “brand names” or “brands” in the accompanying data summary and analysis reports. The brand names of the products received for recycling were the visible brand names marked on the products.

In many cases, the “vendor” (sales data) is the manufacturer of (or is otherwise responsible for) a product received for recycling with the same visible brand name as the name of the “vendor.” However, in some cases, a “vendor” may manufacture (or be otherwise responsible for) products with a different visible brand name. For example, HP manufactures (or is otherwise responsible for) products with both the HP brand name and the Compaq brand name. When these one-to-many relationships are known or can be documented, they are used in the comparisons between brand names sold and brand names for products received for recycling. Other such relationships may exist but not be known. Or, the relationships may have changed over time. Thus, care must be taken when interpreting the comparisons as these unknown or changing relationships may significantly alter the comparisons presented here.

3. Results and Discussion

Product Group 1: Televisions

1.3 Sales

Data were procured from a market research firm for United States market sales of televisions for home usage, small office usage and small business usage for the one year period covering July 2004 through June 2005. For that same period, the sales data were also provided for the top ten brands (or the top brands that make up 80% of the market) by display technology: cathode ray tube display, rear projection display, plasma display and liquid crystal display. Sales data were provided in number of units sold, not in the value in dollars of sales. See Appendix 5 for the raw data.

Table 2: Televisions, all display types, sold July 2004 through June 2005, United States market, by brand name (Source: iSuppli Corporation, El Segundo, CA, 2005)

Brand Name	Units (thousands)	%		
Sony	2,854	11%		
Samsung	2,176	8%	19%	
TTE (includes GE, Proscan and RCA)	1,849	7%		
Panasonic (Matsushita)	1,809	7%		
Sharp	1,765	7%		
Philips (includes Maganvox)	1,655	6%		
Toshiba	1,635	6%		
Sanyo	1,378	5%		
Zenith	952	4%		
LG Electronics	608	2%	63%	10 Brands
Apex Digital	506	2%		
Hitachi	483	2%		
JVC	450	2%		
Mitsubishi	281	1%		
Syntax Groups	214	1%		
Westinghouse	133	1%	71%	16 Brands
Pioneer	96	0.4%		
Dell	73	0.3%		
Advent	63	0.2%		
Gateway	45	0.2%		
SVA	38	0.1%		
Polaroid	36	0.1%		
Akai	35	0.1%		
Fujitsu	27	0.1%		
Proton	21	0.1%		
PLO	20	0.1%		
Proview	18	0.1%		
HP	12	0.05%		
NEC	9	0.04%		
BenQ	2	0.01%		
Marantz	2	0.01%	73%	31 Brands
All other brand names	7,525	28.3%		
Total	26,546	100.9%		

Table note: These brand names were variously reported as “vendors,” “brands” or “brand names.”

The television market is dominated by home use purchases with more than 99% of units sold to those users. Cathode ray tube (CRT) displays still dominate the market but are declining and being displaced by the rapidly growing liquid crystal flat panel displays (LCD) and the slower growing rear projection displays. The market is dominated by Japanese and Korean brands and some former American brands now owned by foreign companies, e.g., GE and RCA now owned by TTE; Zenith now owned by LG Electronics.

The television market (combining all display types) is highly fragmented by brand name with the top 10 brands accounting for 63% of sales but only one company with sales greater than 10%. The top 31 brands accounted for 73% of the market with the remaining 27% split among numerous brands each with less than 0.01% of the market.

Sixteen (16) brand names have a market share of 1% or more and account for 71% of the market. Only two top ten television brands, LG Electronics and Samsung, are also top ten computer monitor brand. For each of the four display types (CRT, LCD, rear projection and plasma displays), this fragmentation pattern is similar although the degree of fragmentation and the dominant brands vary considerably with the display type. See Appendix 5 for detailed data.

1.2 Received for recycling

Data were extracted from the Department’s ongoing Electronic Product Brand Distribution Project for the one year period covering July 2004 through June 2005. See Appendix 5 for the list of brand names.

Table 3: Televisions, all display types, received for recycling from municipal collection programs by selected Florida recycling facilities July 2004 through June 2005, by brand name (Source: Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004-ongoing)

Brand Name	Units	%		
ZENITH	847	14.2%		
RCA	673	11.3%	25.5%	
SONY	430	7.2%		
SHARP	352	5.9%		
PHILLIPS	317	5.3%		
PANASONIC	287	4.8%		
GE	257	4.3%		
TOSHIBA	228	3.8%		
SAMSUNG	217	3.6%		
JVC	202	3.4%	63.8%	10 Brands
SEARS	196	3.3%		
SANYO	155	2.6%		
MITSUBISHI	144	2.4%		
EMERSON	130	2.2%		
GOLDSTAR	106	1.8%		
MAGNAVOX	97	1.6%		
HITACHI	89	1.5%		
QUASAR	89	1.5%		
SYMPHONIC	78	1.3%		
DAEWOO	77	1.3%		
SYLVANIA	66	1.1%		
THOMPSON	58	1.0%	85.3%	22 Brands
JC PENNEY	42	0.7%		
FISHER	39	0.7%		
KTV	35	0.6%		
KONKA	30	0.5%		
NEC	29	0.5%		
AOC	25	0.4%		
ORION	22	0.4%		
APEX	21	0.4%	89.4%	30 Brands
All Other Brands	633	10.6%		
Totals	5,971	100.0%		159 Brands

Similar to the television sales market, the brand distribution (combining all display types) of televisions received for recycling is highly fragmented with the top 10 brands accounting for nearly 64% with the top 2 brands accounting for about 25%. Only 2 brands have a market share of more than 10% each. The top 30 brands accounted for almost 90% of televisions received for recycling with the remaining 10% split among 129 brands each accounting for less than 1%. Twenty-two (22) brand names have a market share of 1% or more and account for 85% of televisions received for recycling.

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1.3 Sales compared with recycling

Table 4: Televisions, all display types, sold in the United States market compared with televisions received for recycling from municipal collection programs by selected Florida recycling facilities July 2004 through June 2005, by brand name (Sources: iSuppli Corporation, El Segundo, CA, 2005; Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004-ongoing)

Sold (US) (n = 26,546,000)		Received for Recycling (FL) (n = 5,971)	
%	Brand Name	Brand Name	%
11%	Sony	ZENITH	14.2%
8%	Samsung	RCA	11.3%
7%	TTE (includes GE, Proscan and RCA)	SONY	7.2%
7%	Panasonic (Matsushita)	SHARP	5.9%
7%	Sharp	PHILLIPS	5.3%
6%	Philips (includes Magnavox)	PANASONIC	4.8%
6%	Toshiba	GE	4.3%
5%	Sanyo	TOSHIBA	3.8%
4%	Zenith	SAMSUNG	3.6%
2%	LG Electronics	JVC	3.4%
2%	Apex Digital	SEARS	3.3%
2%	Hitachi	SANYO	2.6%
2%	JVC	MITSUBISHI	2.4%
1%	Mitsubishi	EMERSON	2.2%
1%	Syntax Groups	GOLDSTAR	1.8%
1%	Westinghouse	MAGNAVOX	1.6%
0.4%	Pioneer	HITACHI	1.5%
0.3%	Dell	QUASAR	1.5%
0.2%	Advent	SYMPHONIC	1.3%
0.2%	Gateway	DAEWOO	1.3%
0.1%	SVA	SYLVANIA	1.1%
0.1%	Polaroid	THOMPSON	1.0%
0.1%	Akai	JC PENNEY	0.7%
0.1%	Fujitsu	FISHER	0.7%
0.1%	Proton	KTV	0.6%
0.1%	PLO	KONKA	0.5%
0.1%	Proview	NEC	0.5%
0.05%	HP	AOC	0.4%
0.04%	NEC	ORION	0.4%
0.01%	BenQ	APEX	0.4%
0.01%	Marantz		
28.3%	All other brand names	All Other Brands	10.6%
100.9%	Total	Totals	100.0%

There are important differences between the brand name rankings and percentages of products sold and those of products received for recycling. For example, Zenith is ranked ninth with 4% of sales but is ranked first with more than 14% of products received for recycling. Samsung is ranked second with 8% of sales but is ranked ninth with less than 4% of products received for recycling. Only a few major brands have similar percentage shares of products sold and products received for recycling. Of the ten top

brands in terms of market share of sales, only Sharp (7% of sales, 6% of recycling) and Philips, including the Magnavox brand, (6% of sales, 7% of recycling) are within 1% of their share of products received for recycling.

The Philips and TTE brands show that care must be taken in comparing share of sales with share of recycling. In the sales data, the Philips brand is combined with the Magnavox brand. Likewise, TTE includes the GE, Proscan and RCA brands. In the recycling data, Philips and Magnavox are distinct brands as are GE and RCA. No TTE and Proscan brand televisions were found in the products received for recycling. The TTE brand illustrates the complexity of comparing sales and recycling. According to a company description on the web, TTE Technology (Indianapolis, IN) markets and sells digital television products under the brand names RCA, TCL and Thomson. According to information posted on Thomson's website, in 2003 Thomson and TCL of China merged their television activities into TTE Company [TTE Technology]. According to information posted on RCA's website, Thomson licenses the RCA brand to third parties for televisions and other electronic products. According to the July 17, 2007 list on the Maine Department of Environmental Protection web, Thomson notified the Department that it would be responsible for the GE, Proscan, RCA and Thomson brands under the requirements of Maine's 2005 electronics recycling legislation (38 MRSA §1610). TTE notified for the RCA and TTE brands. See Appendix 5 for web citations and screen shots about the TTE brand.

Because of the differences between brand market share in sales and in recycling, the method of apportioning recycling system costs can impact the relative competitive position of a manufacturer because the sales-based system may cost the manufacturer more (or less) than the recycling-based system. For illustration purposes, assume that the annual costs of recycling televisions under a particular system are \$1,000,000. A manufacturer would be responsible for a percentage of those costs based either on its share of television sales or its share of televisions received for recycling, depending on the system's financial mechanism. For example, the manufacturer of Zenith televisions would pay \$40,000 ($\$1,000,000 \times 4\%$) if the system apportioned costs based on television sales. The Zenith manufacturer would pay \$142,000 ($\$1,000,000 \times 14.2\%$) if the system apportioned costs based on televisions received for recycling. The Zenith manufacturer's competitive position would be enhanced under the sales-based system compared with its position under the recycling-based system because it would have to pay more than 3 times as much under the recycling-based system.

Looking at the ten largest brands in terms of product sales or product received for recycling, the costs for TTE and, to a lesser extent, JVC, like Zenith, would be less under the sales-based system than under the recycling-based system. The costs for Sony, Samsung, and, to a lesser extent, Panasonic, Toshiba, Sanyo and LG Electronics, would be less under the recycling-based system than under the sales-based system. The costs for Sharp and Philips would be almost the same under either system. It is likely that manufacturers would take into account the relative costs of sales-based financing or recycling-based financing when deciding whether to support proposed mandated or voluntary electronics recycling systems.

Product Group 2: Computer Monitors

2.1 Sales

Data were procured from a market research firm for United States market sales of computer monitors for home usage, small office usage and small business usage for the one year period covering July 2004 through June 2005. For that same period, the sales data were also provided for the top ten brands (or the top brands that make up 80% of the market) by display technology: cathode ray tube display and liquid crystal display. Sales data were provided in number of units sold, not in the value in dollars of sales. See Appendix 6 for the raw data.

Table 5: Computer monitors, cathode ray tube and liquid crystal display types, sold July 2004 through June 2005, United States market, by brand name (Source: iSuppli Corporation, El Segundo, CA, 2005)

Brand Name	Units (thousands)	%			
Dell	8,934	33%	46%	10 Brands	
HP/Compaq	3,523	13%			
Gateway	1,743	6%			
Viewsonic	1,242	5%			
Samsung	1,163	4%	75%		
NEC-Mitsubishi	953	4%			
AOC (EPI)	722	3%			
Acer	698	3%			
LG Electronics	625	2%			
EMC/Mag/Proview	583	2%			
Philips	563	2%			
IBM	504	2%			
KDS	473	2%			
Sony	372	1%		87%	
BenQ	351	1%			
CTX	239	1%			
Apple	217	1%			
ImageQuest	199	1%			
IBM/Lenovo	180	1%			
Iiyama	168	1%			
Planar	160	1%			
Sampo	83	0.3%			
Eizo	20	0.1%			
Hansol	18	0.1%	88%		
ADI	14	0.1%			
Tatung	7	0.03%			
Sharp	4	0.01%			
AG Neovo	2	0.01%			
All other brand names	3,234	12%			
Total	26,995	100%			28 Brands

Table note: These brand names were variously reported as “vendors,” “brands” or “brand names.”

The computer monitor market is dominated by home use purchases with more than 64% of units sold to those users. Liquid crystal flat panel displays (LCD) sales outnumber cathode ray tube (CRT) displays by about 2 to 1. Prior to 2005, CRT display sales outnumbered LCD displays.

The computer monitor market, combining both cathode ray tube and liquid crystal display types, is dominated by two brand names that account for almost half of sales and are the only brands with double digit market share. The top ten brand names account for 75% of sales with the remaining 25% split among numerous brands with less than 3% of market share. Twenty-one (21) brand names have a market share of 1% or more and account for 87% of the market. Four (4) of these top ten brands, Acer, Dell, HP/Compaq and Gateway, are also top ten computer brand names. Two (2) of the top ten monitor brands, LG Electronics and Samsung, are top ten television brands. The computer monitor market is not as fragmented as is the television market (see Table 2).

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2.2 Received for recycling

Data were extracted from the Department's ongoing Electronic Product Brand Distribution Project for the one year period covering July 2004 through June 2005. See Appendix 6 for the list of brand names.

Table 6: Computer monitors, all display types, received for recycling from municipal collection programs by selected Florida recycling facilities July 2004 through June 2005, by brand name (Source: Florida Department of Environmental Protection's Electronic Product Brand Distribution Project, 2004-ongoing)

Brand Name	Units	%		
DELL	385	8.2%	16%	
COMPAQ	384	8.2%		
IBM	333	7.1%		
PACKARD BELL	303	6.5%		
GATEWAY	245	5.2%		
NEC	199	4.3%	54%	10 Brands
APPLE	184	3.9%		
HP	173	3.7%		
CTX	157	3.4%		
SAMSUNG	149	3.2%		
VLMF	92	2.0%		
ACER	89	1.9%		
VIEWSONIC	85	1.8%		
AOC	83	1.8%		
KDS	79	1.7%		
SONY	77	1.6%	69%	20 Brands
PROVIEW	64	1.4%		
PHILLIPS	56	1.2%		
MAG	49	1.0%		
EMC	47	1.0%		
EMC MULTISYSTEM	41	0.9%		
EMACHINE	40	0.9%		
MITSUBISHI	39	0.8%		
SAMTRON	32	0.7%		
RIC	31	0.7%		
TECHMEDIA	31	0.7%	75%	28 Brands
MICRON	30	0.6%		
MAXTECH	24	0.5%		
All Other Brands	1,167	25.0%		
Totals	4,668	100.0%		274 Brands

Similar to the monitor sales market, the brand distribution (combining all display types) of monitors received for recycling is highly fragmented. However, there are important differences between the brand distribution of monitor sales compared with the brand distribution of monitors received for recycling. First, while the top 2 brands in sales accounted for 46% of the market, the top 2 brands of monitors received for recycling accounted for only 16% of units received. Second, while the top ten brands in sales accounted for 75% of the market, the top ten brands of monitors received for recycling

accounted for only 54% of units received. Third, while the top 28 brands in sales accounted for 88% of the market, the top 28 brands of monitors received for recycling accounted for only 75% of units received. Finally, the 21 brands in sales that have a market share of at least 1% account for 87% of sales; the 20 brands of monitors received for recycling that have at least 1% of units received accounted for 69% of units received.

2.3 Sales compared with recycling

Table 7: Computer monitors, all display types, sold in the United States market compared with computer monitors received for recycling from municipal collection programs by selected Florida recycling facilities July 2004 through June 2005, by brand name (Sources: iSuppli Corporation, El Segundo, CA, 2005; Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004-ongoing)

Sold (US) (n = 26,995,000)		Received for Recycling (FL) (n = 4,668)	
%	Brand Name	Brand Name	%
33%	Dell	DELL	8.2%
13%	HP/Compaq	COMPAQ	8.2%
6%	Gateway	IBM	7.1%
5%	Viewsonic	PACKARD BELL	6.5%
4%	Samsung	GATEWAY	5.2%
4%	NEC-Mitsubishi	NEC	4.3%
3%	AOC (EPI)	APPLE	3.9%
3%	Acer	HP	3.7%
2%	LG Electronics	CTX	3.4%
2%	EMC/Mag/Proview	SAMSUNG	3.2%
2%	Philips	VLMF	2.0%
2%	IBM	ACER	1.9%
2%	KDS	VIEWSONIC	1.8%
1%	Sony	AOC	1.8%
1%	BenQ	KDS	1.7%
1%	CTX	SONY	1.6%
1%	Apple	PROVIEW	1.4%
1%	ImageQuest	PHILLIPS	1.2%
1%	IBM/Lenovo	MAG	1.0%
1%	Iiyama	EMC	1.0%
1%	Planar	EMC MULTISYSTEM	0.9%
0.3%	Sampo	EMACHINE	0.9%
0.1%	Eizo	MITSUBISHI	0.8%
0.1%	Hansol	SAMTRON	0.7%
0.1%	ADI	RIC	0.7%
0.03%	Tatung	TECHMEDIA	0.7%
0.01%	Sharp	MICRON	0.6%
0.01%	AG Neovo	MAXTECH	0.5%

There are some similarities between the brand name rankings and percentages of computer monitors sold and those of computer monitors received for recycling. For example, Dell, HP/Compaq (combined), Samsung and NEC/Mitsubishi (combined) are in the top ten brands in both sales and received for recycling although the rankings and

percentages are different for sales and received for recycling. Dell and HP/Compaq (combined) are the top 2 brands in both sales and received for recycling but their rankings are reversed: Dell in first in sales but second in received for recycling. [For purposes of this analysis, note that “combined” means that the percentages of brands that are listed separately in the received for recycling column, e.g., HP, Compaq, are combined when comparing them to brands that are associated in the sales column, e.g., HP/Compaq.]

However, among the top ten brands in either sales and received for recycling, there are also important differences between the brand name rankings and percentages of computer monitors sold and those of computer monitors received for recycling. IBM/Lenovo (combined) is ranked 12th in sales but is ranked third in received for recycling. Packard Bell is not even listed among the top 28 brands sales but is fourth in received for recycling. Conversely, Viewsonic is ranked fourth in sales but only 13th in received for recycling. Of the top ten brands in sales, only Gateway and Samsung are within 1% of their share of monitors received for recycling. HP/Compaq (combined), AOC/EPI (combined) and EMC/Mag/Proview (combined) sales are within 1.5% of their share of monitors received for recycling.

As with televisions discussed previously, care must be taken in comparing share of sales with share of recycling. For some brand names, the relationship between brand names and the entities that manufacture, license or otherwise have responsibility for the brand are complex and even change over time. See the discussion of the Philips and TTE brands above in the section on televisions.

Because of the differences between brand market share in sales and in recycling, the method of apportioning recycling system costs can impact the relative competitive position of a manufacturer because the sales-based system may cost the manufacturer more (or less) than the recycling-based system. For illustration purposes, assume that the annual costs of recycling computer monitors under a particular system are \$1,000,000. A manufacturer would be responsible for a percentage of those costs based either on its share of monitor sales or its share of monitors received for recycling, depending on the system’s financial mechanism. For example, the manufacturer of Dell computer monitors would pay \$330,000 ($\$1,000,000 \times 33\%$) if the system apportioned costs based on monitor sales. The Dell manufacturer would pay \$82,000 ($\$1,000,000 \times 8.2\%$) if the system apportioned costs based on monitors received for recycling. The Dell manufacturer’s competitive position would be enhanced under the recycling-based system compared with its position under the sales-based system because it would have to pay four times as much under the sales-based system. Conversely, for example, the manufacturer of Packard Bell monitors would pay less than \$100 ($\$1,000,000 \times <0.01\%$) if the system apportioned costs based on monitor sales. The Packard Bell manufacturer would pay \$65,000 ($\$1,000,000 \times 6.5\%$) if the system apportioned costs based on monitors received for recycling. The Packard Bell manufacturer’s competitive position would be enhanced under the sales-based system compared with its position under the recycling-based system because it would have to pay 650 times as much under the recycling-based system.

Looking at the ten largest brands in terms of product sales or product received for recycling, the costs for Apple, IBM/Lenovo (combined), Packard Bell, and, to a lesser extent, NEC/Mitsubishi (combined) and CTX would be less under the sales-based system than under the recycling-based system. The costs for Dell, LG Electronics and, to a lesser extent, Viewsonic, would be less under the recycling-based system than under the sales-based system. The costs for Acer, AOC/EPI (combined), EMC/Mag/Proview (combined), Gateway, HP/Compaq (combined) and Samsung would be almost the same under either system. It is likely that manufacturers would take into account the relative costs of sales-based financing or recycling-based financing when deciding whether to support proposed mandated or voluntary electronics recycling systems.

Product Group 3: Desktop and Portable Computers

3.1 Sales

Data were procured from a market research firm for United States market sales of desktop and portable computers for home usage, small office usage and small business usage for the one year period covering January through December 2005. For that same period, the sales data were also provided for the top ten brands (or the top brands that make up 80% of the market) by configuration: desktop and portable. Sales data were provided in number of units sold, not in the value in dollars of sales. See Appendix 7 for the raw data.

Table 8: Computers, desktop and portable, sold January through December 2005, United States market, by brand name (Source: IDC, Framingham, MA, 2005)

Brand Name	Units (thousands)	%		
Dell	9,994	28%		
HP	7,407	21%	49%	
Gateway	3,112	9%		
Toshiba	1,765	5%		
Apple	1,417	4%		
Sony	726	2%		
Acer	433	1%		
Lenovo	418	1%		
Averatec	229	1%	72%	9 Brands
Micro Electronics	132	0.4%	72%	10 Brands
Systemax	124	0.3%		
MPC (Micron PC)	48	0.1%		
Sharp	31	0.1%		
Fujitsu/Fujitsu Siemens	21	0.1%		
TwinHead	12	0.03%		
Everex	1	0.003%	73%	16 Brands
All other brand names	9,711	27%		
Total	35,580	100%		

Table note: These brand names were variously reported as “vendors,” “brands” or “brand names.”

The computer market, both desktop and portable, is dominated by home users with roughly 2/3 of all sales. This reflects the usage pattern of computer monitors (see above). The remaining 1/3 is more or less equally divided between small office (<10 employees) and small business users (10-99 employees). Desktop unit sales outnumber portable unit sales by about 3 to 2.

Two brand names, Dell and HP, dominate the computer market accounting for nearly half of all sales and are the only brands with double digit market share. These two brands also dominate the computer monitor market (see above). Seven other brands have single digit percentage sales and, together with Dell and HP, account for about 72% of all sales. The remaining 28% of the market is split among numerous brand names, all of which have sales accounting for less than 1% of market share.

3.2 Received for recycling

Data were extracted from the Department’s ongoing Electronic Product Brand Distribution Project for the one year period covering July 2004 through June 2005. See Appendix 7 for the list of brand names.

Table 9: Computers, desktop and portable, received for recycling from municipal collection programs by selected Florida recycling facilities January through December 2005, by brand name (Source: Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004-ongoing)

Brand Name	Units	%		
DELL	796	19.1%		
COMPAQ	457	10.9%	30%	
PACKARD BELL	271	6.5%		
HP	270	6.5%		
IBM	270	6.5%		
ABC	263	6.3%		
GATEWAY	243	5.8%		
APPLE	176	4.2%		
EMACHINE	56	1.3%	67%	9 Brands
MICROSYSTEM	55	1.3%	68%	10 Brands
ACER	47	1.1%	70%	11 Brands
SUPER POWER	39	0.9%		
TEC	38	0.9%		
AST	35	0.8%		
DIGITAL	31	0.7%		
NEC	31	0.7%	74%	16 Brands
All Other Brands	1,098	26.3%		
Totals	4,176	100.0%		117 Brands

Similar to the computer sales market, the brand distribution (combining desktops and portables) of computers received for recycling is highly fragmented. There are several similarities between the brand distribution of computer sales compared with the brand distribution of monitors received for recycling. The top ten brands account for about the same percentage of sales and computers received for recycling. The top 16

brands account for about the same percentage of sales and computers received for recycling. Finally, the 9 brands in sales that have a market share of at least 1% and the 11 brands of monitors received for recycling that have at least 1% of units received accounted for the same percentages. However, there is one important difference between the brand distribution of computers sales compared with the brand distribution of monitors received for recycling. While the top 2 brands in sales accounted for 49% of the market, the top 2 brands of computers received for recycling accounted for only 30% of units received.

3.3 Sales compared with recycling

Table 10: Computers, desktop and portable, sold in the United States market compared with computer monitors received for recycling from municipal collection programs by selected Florida recycling facilities January through December 2005, by brand name (Sources: IDC, Framingham, MA, 2005; Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004-ongoing)

Sold (US) (n = 35,580,240)		Received for Recycling (FL) (n = 4,176)	
%	Brand Name	Brand Name	%
28%	Dell	Dell	19%
21%	HP	Compaq	11%
9%	Gateway	Packard Bell	6%
5%	Toshiba	HP	6%
4%	Apple	IBM	6%
2%	Sony	ABC	6%
1%	Acer	Gateway	6%
1%	Lenovo	Apple	4%
1%	Averatec	E Machine	1%
0.4%	Micro Electronics	Microsystem	1%
0.3%	Systemax	Acer	1%
0.1%	MPC (Micron PC)	Super Power	0.9%
0.1%	Sharp	TEC	0.9%
0.1%	Fujitsu/Fujitsu Siemens	AST	0.8%
0.03%	TwinHead	Digital	0.7%
0.003%	Everex	NEC	0.7%
27.3%	Others	Others	26.3%

There are some similarities between the brand name rankings and percentages of computers sold and those of computers received for recycling. For example, Apple, Dell, Gateway, HP/Compaq (combined) and IBM/Lenovo (combined) are in the top ten brands in both sales and received for recycling although the rankings and percentages are somewhat different for sales and recycling. Dell and HP/Compaq (combined) are the top 2 brands in both sales and received for recycling. [For purposes of this analysis, note that “combined” means that percentages are summed for brands that are listed separately, but known to be associated, e.g., HP, Compaq, or are associated in the computer monitor data, e.g., IBM, Lenovo.]

However, among the top ten brands in either sales and received for recycling, there are also important differences between the brand name rankings and percentages of

computer monitors sold and those of computer monitors received for recycling. For example, four brand names among the top ten in sales, Averatec, Micro Electronics, Toshiba and Sony are not among the top 16 brands received for recycling. Averatec and Micro Electronics control less than 2% of market share and could be considered minor players. Conversely, 3 of the top ten brands received for recycling, ABC, E Machine, Microsystem and Packard Bell are not among the top 16 brands in sales. While E Machine and Microsystem account for less than 2% of brands received for recycling, Packard Bell and ABC account for 6% and could be considered major players. Of the top ten brands in sales, only Acer, Apple, Averatec and Micro Electronics are within 1% of their share of computers received for recycling. Of these four, only Apple controls more than 2% of market share, so Acer, Averatec and Micro Electronics could be considered minor players.

As with televisions discussed previously, care must be taken in comparing share of sales with share of recycling. For some brand names, the relationship between brand names and the entities that manufacture, license or otherwise have responsibility for the brand are complex and even change over time. See the discussion of the Philips and TTE brands above in the section on televisions.

Because of the differences between brand market share in sales and in recycling, the method of apportioning recycling system costs can impact the relative competitive position of a manufacturer because the sales-based system may cost the manufacturer more (or less) than the recycling-based system. For illustration purposes, assume that the annual costs of recycling computers under a particular system are \$1,000,000. A manufacturer would be responsible for a percentage of those costs based either on its share of computer sales or its share of computers received for recycling, depending on the system's financial mechanism. For example, the manufacturer of Toshiba computers would pay \$50,000 ($\$1,000,000 \times 5\%$) if the system apportioned costs based on computer sales. Toshiba would pay less than \$7,000 ($\$1,000,000 \times <.07\%$) if the system apportioned costs based on computers received for recycling. Toshiba's competitive position would be enhanced under the recycling-based system compared with its position under the sales-based system because it would have to pay seven times as much under the sales-based system. Conversely, for example, the manufacturer of ABC computers would pay less than \$30 ($\$1,000,000 \times <0.003\%$) if the system apportioned costs based on computer sales. ABC would pay \$60,000 ($\$1,000,000 \times 6\%$) if the system apportioned costs based on computers received for recycling. The ABC manufacturer's competitive position would be enhanced under the sales-based system compared with its position under the recycling-based system because it would have to pay 2,000 times as much under the recycling-based system. The competitive position of some brands would not be affected under either system because they would pay the same. For example, the manufacturer of Apple computers would pay \$40,000 ($\$1,000,000 \times 4\%$) if the system apportioned costs based on computer sales. Apple would pay \$40,000 ($\$1,000,000 \times 4\%$) if the system apportioned costs based on computers received for recycling.

Looking at the ten largest brands in terms of product sales or product received for recycling, the costs for ABC, E Machine, IBM/Lenovo (combined) and Microsystem

would be less under the sales-based system than under the recycling-based system. The costs for Dell, HP/Compaq (combined), Sony and Toshiba would be less under the recycling-based system than under the sales-based system. The costs for Apple and Acer would be almost the same under either system. It is likely that manufacturers would take into account the relative costs of sales-based financing or recycling-based financing when deciding whether to support proposed mandated or voluntary electronics recycling systems.

Product Group 4: Printers

4.1 Sales

Data were procured from a market research firm for United States market sales of printers for home usage, small office usage and small business usage for the one year period covering January through December 2005. For that same period, the sales data were also provided for the top ten brands (or the top brands that make up 80% of the market). Sales data were provided in number of units sold, not in the value in dollars of sales. See Appendix 8 for the raw data.

Table 11: Printers sold January through December 2005, United States market, by brand name (Source: IDC, Framingham, MA, 2005)

Brand Name	Units (thousands)	%		
HP	4,701	36.3%		
Dell	2,364	18.3%	54.6%	
Lexmark	2,235	17.3%		
Canon	1,552	12.0%	83.9%	4 Brands
Epson	1,279	9.9%		
Konica Minolta	255	2.0%		
Samsung	220	1.7%		
Brother	166	1.3%		
OKI	72	0.6%		
Xerox	28	0.2%	99.5%	10 Brands
All other brand names	63	0.5%		
Total	12,934	100.0%		

Table note: These brand names were variously reported as “vendors,” “brands” or “brand names.”

The printer market is dominated by home users with nearly 60% of all sales. The remaining market share is divided roughly 2 to 1 between small office (<10 employees) and small business users (10-99 employees).

The printer market is much less fragmented by brand name than the television, computer monitor and computer markets. The two brand names, HP and Dell, accounted for more than half of all sales. These same two brand names are also dominated the markets for computer monitors and computers (see above). Four brand names, each with double digit sales, accounted for nearly 84% of sales with ten brand names accounting for nearly all sales.

4.2 Received for recycling

Data were extracted from the Department's ongoing Electronic Product Brand Distribution Project for the one year period covering July 2004 through June 2005. See Appendix 8 for the list of brand names.

Table 12: Printers received for recycling from municipal collection programs by selected Florida recycling facilities January through December 2005, by brand name (Source: Florida Department of Environmental Protection's Electronic Product Brand Distribution Product Brand Distribution Project, 2004-ongoing)

Brand Name	Units	%		
HP	733	43.0%		
EPSON	206	12.1%	55.1%	
CANON	176	10.3%		
LEXMARK	150	8.8%	74.2%	4 Brands
PANASONIC	73	4.3%		
OKIDATA	72	4.2%		
COMPAQ	69	4.0%		
APPLE	37	2.2%		
BROTHER	37	2.2%		
IBM	37	2.2%	93.3%	10 Brands
All Other Brands	115	6.7%		
Total	1705	100.0%		43 Brands

Similar to the printer sales market, the brand distribution printers received for recycling is much less fragmented than that of televisions, computer monitors and computers. Forty-three (43) brand names of printers were identified compared with 171 television brand names, 293 computer monitor brand names and 157 computer brand names. There are several similarities between the brand distribution of printer sales compared with the brand distribution of monitors received for recycling. The top two and the top ten brands account for about the same percentage of sales and computers received for recycling. However, there are some important differences between the brand distribution of computers sales compared with the brand distribution of monitors received for recycling. While HP is the top brand in both sales and recycling, Dell is the number two brand in sales while Epson is the number two brand in printers received for recycling. The top four brands in sales accounted for almost 84% of the market, but the top four brands of computers received for recycling accounted for only 74% of units received.

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4.3 Sales compared with recycling

Table 13: Printers sold in the United States market compared with printers received for recycling from municipal collection programs by selected Florida recycling facilities January through December 2005, by brand name (Sources: IDC, Framingham, MA, 2005; Florida Department of Environmental Protection’s Electronic Product Brand Distribution Project, 2004 -ongoing)

Sold (US) (n = 12,934,024)		Received for Recycling (FL) (n = 1,705)	
%	Brand Name	Brand Name	%
36%	HP	HP	43%
18%	Dell	Epson	12%
17%	Lexmark	Canon	10%
12%	Canon	Lexmark	9%
10%	Epson	Panasonic	4%
2%	Konica Minolta	Okidata	4%
2%	Samsung	Compaq	4%
1%	Brother	Apple	2%
0.6%	OKI	Brother	2%
0.2%	Xerox	IBM	2%
0.5%	Others	Others	7%

There are some similarities between the brand name rankings and percentages of computers sold and those of computers received for recycling. For example, six of the top ten brands in sales, Brother, Canon, Epson, HP/Compaq (combined), Lexmark and Okidata (same as OKI – see Okidata corporate web screen shot in Appendix 8) are also in the top ten brands in printers received for recycling although the rankings and percentages are somewhat different for sales and recycling. HP/Compaq (combined) is the top brand in both sales and received for recycling. [For purposes of this analysis, note that “combined” means that percentages are summed for brands that are listed separately, but known to be associated, e.g., HP, Compaq, or are associated in the computer monitor data, e.g., IBM, Lenovo.]

However, among the top ten brands in either sales and received for recycling, there are also important differences between the brand name rankings and percentages of computer monitors sold and those of computer monitors received for recycling. For example, four brand names among the top ten in sales, Dell, Konica Minolta, Samsung and Xerox, are not among the top ten brands received for recycling. Samsung and Xerox control less than 2% of market share and could be considered minor players. Conversely, three of the top ten brands received for recycling, Apple, IBM and Panasonic, are not among the top ten brands in sales. Of the top ten brands in sales, only Brother is within 1% of their share of computers received for recycling but both Canon and Epson are within 2 %.

As with televisions discussed previously, care must be taken in comparing share of sales with share of recycling. For some brand names, the relationship between brand names and the entities that manufacture, license or otherwise have responsibility for the

brand are complex and even change over time. See the discussion of the Philips and TTE brands above in the section on televisions.

Because of the differences between brand market share in sales and in recycling, the method of apportioning recycling system costs can impact the relative competitive position of a manufacturer because the sales-based system may cost the manufacturer more (or less) than the recycling-based system. For illustration purposes, assume that the annual costs of recycling printers under a particular system are \$1,000,000. A manufacturer would be responsible for a percentage of those costs based either on its share of printer sales or its share of printers received for recycling, depending on the system's financial mechanism. For example, the manufacturer of Lexmark printers would pay \$170,000 ($\$1,000,000 \times 17\%$) if the system apportioned costs based on printer sales. Lexmark would pay less than \$90,000 ($\$1,000,000 \times 9\%$) if the system apportioned costs based on printers received for recycling. Lexmark's competitive position would be enhanced under the recycling-based system compared with its position under the sales-based system because it would have to pay almost twice as much under the sales-based system. Conversely, for example, the manufacturer of OKI/Okidata (combined) printers would pay less than \$6,000 ($\$1,000,000 \times <0.6\%$) if the system apportioned costs based on printer sales. OKI/Okidata (combined) would pay \$40,000 ($\$1,000,000 \times 4\%$) if the system apportioned costs based on printers received for recycling. The OKI/Okidata (combined) manufacturer's competitive position would be enhanced under the sales-based system compared with its position under the recycling-based system because it would have to pay almost seven times as much under the recycling-based system.

Looking at the ten largest brands in terms of product sales or product received for recycling, the costs for Apple, Brother, Epson, HP/Compaq (combined), IBM, OKI/Okidata (combined) and Panasonic would be less under the sales-based system than under the recycling-based system. The costs for Canon, Dell and Lexmark would be less under the recycling-based system than under the sales-based system. It is likely that manufacturers would take into account the relative costs of sales-based financing or recycling-based financing when deciding whether to support proposed mandated or voluntary electronics recycling systems.

4. Conclusion

Using real world data, this report presents, analyzes and compares the brand distribution of electronic products sold in the United States and electronic products received for recycling in Florida. The purpose is to examine how the similarities and differences between these two brand distributions may impact the allocation of recycling system costs among product manufacturers. The analysis shows that a manufacturer's costs under a recycling system that allocates costs based on products sold often may differ from its costs under a system that allocates costs based on products received for recycling. Higher costs generally weaken a manufacturer's competitive position relative to other manufacturers in the marketplace; lower costs generally strengthen that competitive position.

This report can be used in several ways. The analysis and comparison may be replicated for other electronic products, other states or different time periods. It may be of particular interest to states (Maine, Washington, Minnesota) that currently have legislated electronics recycling systems that allocate system costs to manufacturers based either upon product sales or products received for recycling. The methodology or results can be used by governmental jurisdictions, manufacturers or other groups in legislative meetings, trade group meetings or other meeting seeking to evaluate or select a recycling system funding mechanism. Ultimately, the report can help speed the development of electronics recycling systems that accelerate the rate at which end-of-life electronics get recycled. This will increase the amounts of valuable resources that are reclaimed from electronic products for reuse, thereby reducing the typically greater environmental damage caused by mining and manufacturing virgin materials such as base metals, precious metals and plastics. It will also reduce the amounts of lead and other contaminants of concern that can make their way into the environment through improper management of end-of-life electronics.

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Appendices

Appendix 1: List of all 61 brand names of products for which sales data are provided in this report.

Note: These brand names were variously reported as “vendors,” “brands” or “brand names” by IDC and iSuppli. Sales data were provided for 31 television brands, 28 computer monitor brands, 16 computer brands and 10 printer brands. Several brand names appeared in more than one product category. For example, Samsung appeared in the television, monitor and printer product categories. There were an indeterminate number of other television, monitor, computer and printer brand names for which sales data were aggregated under “All Other Brands” or “Others.”

Television, computer monitor, computer and printer brands sold US Market
Television and computer monitor 7/1/04-6/30/05 Data by iSuppli (El Segundo, CA)

Brand Name (variously reported as "vendor," "brand" or "brand name")

Acer	LG Electronics
ADI	Marantz
Advent	Micro Electronics
AG Neovo	MPC (MicronPC)
Akai	NEC-Mitsubishi
AOC (EPI)	OKI
Apex Digital	Panasonic (Matsushita)
Apple	Philips (includes Maganvox)
Averatec	Pioneer
BenQ	Planar
Brother	PLO
Canon	Polaroid
CTX	Proton
Dell	Proview
Eizo	Sampo
EMC/Mag/Proview	Samsung
Epson	Sanyo
Everex	Sharp
Fujitsu/Fujitsu Siemens	Sony
Gateway	SVA
Hansol	Syntax Groups
Hitachi	Systemax
HP/Compaq	Tatung
IBM/Lenovo	Toshiba
Iiyama	TTE (includes GE, Proscan and RCA)
ImageQuest	TwinHead
JVC	Viewsonic
KDS	Westinghouse
Konica Minolta	Xerox
Lenovo	Zenith
Lexmark	

Appendix 2: List of all 439 brand names of products discussed in this report that were received for recycling as part of Florida's Electronic Product Brand Distribution Project.

Note: Some of these brand names are misspellings of other listed brands and are not distinct brand names. Misspelled brand names are included in this list since the data analysis considered misspelled brand names to be distinct brand names. The reason the misspelled brand names were included in the data analysis is that it was beyond the scope of this analysis to determine which "misspelled" brand names were in fact misspellings of other listed brands and which were actual distinct brand names that appeared to be misspellings. For example, "Broksonic" could be either a misspelling of the "Brooksonic" brand name or a different brand name that we were not aware of.

Some of these brand names are not brand names at all but refer to the type of technology used. For example, "Monochrome" is probably not the brand name of a computer monitor: it is probably a label that indicates that the monitor is not a color monitor. Brand names that may be technology descriptions are included in this list since the data analysis considered these to be distinct brand names. The reason brand names that were or may have been simply labels describing a technology were included in the data analysis is that it was beyond the scope of this analysis to determine which were in fact technology labels and which were actual distinct brand names that appeared to be technology labels.

Duplicate brand names were removed when it was obvious that the names were duplicates. For example, "Philips (Philips)" and "Philips" were considered to be duplicates so the data for these "two" brand names were aggregated under the "Philips" brand name for analysis purposes. When there was any reason to doubt that the brand names were duplicates, both brand names were considered to be distinct brand names for the purposes of data analysis.

Florida Electronic Product Brand Distribution Project
 Television, computer monitor, computer and printer brands
 Television, computer monitor 7/1/04-6/30/05 Computer and printer 1/1/05-12/31/05
 Extracted from ESort Database 09/28/07

Brand Name	439 Brands		
3COMM	AWIA	COMPUTECH	EPSON
A OPEN	AXIS	COMTEK	EQUITRAC
AAMAZING	BARTON DATA	CONTEC	ESP
ACCEL	BELERON	CPT	EVERROX
ACE	BERNOVLE	CRAIG	EWIC
ACER	BIZ & BYTES	CROWN	FISHER
ACTION	BLACK SCREEN	CTRON	FOCUS
ADC	BLACK STRIPE	CTS	FTIS
ADI	BLUE POINT	CTX	FUJITSU
ADMIRAL	BMC	CTY	FUNAI
AGI	BOHSEI	CURTIS MATHIS	FUTURA
AGL	BONDWELL	CYBERNATION	FUVAL
AIWA	BROKSONIC	CYBERVISION	GATEWAY
AKAI	BROOKSONIC	CYCLONE	GE
ALPS	BROTHER	DAEWOO	GEM
ALR	BRS	DALY	GENE
ALTON	BTI	DATA GENERAL	GENERIC
AMARK	CAM	DATA SYSTEM	GENISCAN
AMD	CANON	DATEC	GI
AMI	CAPEHEART	DAYTEK	GIBRALTAR
AMIGA	CAPRI	DAYTRON	GOLD STAR
AMP VIEW	CASPER	DCS	GOLD STATE
AMSTACT	CAT	DECAVIEW	GRAIG
AMSTRAD	CCS	DECISION DATA	GROUPSONIC
AMTEL	CCU	DELL	HAIER
AMTRON	CDM	DELTA	HANSOL
ANEDEX	CELEBRIX	DIG	HEATHRIT
ANTEC	CELERA	DIGITAL	HEWLETT PACKARD
AOEM	CHALLENGER	DIGIVIEW	HITACHI
AOM	CHANCHONG	DIMENSION	HI-TECH
APEX	CITEK	DR MON	HNS VIEW STATION
APPLE	CITIZEN	DTK	HUNDAI
ARCHE	CITOH	DTS	HYANDAI
ASC	COMAS	DYNAMICS	HYUNDAI
AST	COMMODORE	DYNEX	IBM
AST BRAVO	COMPAL	E LO	IDEA
ASUS	COMPAQ	ECOMPACT	IDEK
AT&T	COMPU SURF	EDISON	IDENTITY
ATECH	COMPU TREND	EEP	IYAMA
ATEL	COMPUADD	EMACHINE	IMPRESSION
ATT	COMPUDRIVE	EMC	INFINITY
AUDIOVOX	COMPUDYNE	EMC MULTISYSTEM	INFOTEL
AURORA VISION	COMPUFOCUS	EMERSON	INSYNC
AUTOGRAPH	COMPUSA	ENVISION	ITT
AVI	COMPUSOURCE	EPI	JAVELEN

Florida Electronic Product Brand Distribution Project
Television, computer monitor, computer and printer brands (continued)
Television, computer monitor 7/1/04-6/30/05 Computer and printer 1/1/05-12/31/05
Extracted from ESort Database 09/28/07

Brand Name	439 Brands		
JC PENNEY	MAXUM	ORCHESTRA	REFLEX
JDL	MEGA	OREON	RELESYS
JEAN	MEGAIMAGE	ORION	RELISUS
JES	MEGATRONIC	OUTLOOK	RELISYS
JVC	MEMOREX	PACE	RIC
KAREA DATA	MGA	PACKARD BELL	ROSE
KDS	MICRO	PANASONIC	ROYAL
KEC	MICRO ELECTRONICS	PC	RPC
KEER	MICRO Q	PC I-MMT	SABRE
KENKA	MICRON	PC JP	SAMPLE
KIEER	MICRONPC	PC PARTNER	SAMPO
KLH	MICROSCAN	PCM	SAMRON
KMART	MICROTEK	PCMI	SAMSUI
KMC	MIDWEST MICRO	PERCOMP	SAMSUNG
KOMODO	MINI MICRO	PERFEC MAX	SAMTRON
KONGA	MITSUBISHI	PERIMAX	SAMYO
KONKA	MITSUI	PHILCO	SANGO
KOREA	MONOCHROME	PHILLIPS	SANSUL
KTV	MONTGOMERY WARD	PHOENIA	SANYO
L*VIEW	MOTOROLA	PHOENIX	SCAN PRO
LAN PLUS	MST	PHONEKENTS	SCEPTRE
LANIER	MTC	PIONEX	SCOTT
LASER	MUILTSYSTEMS	PIONTO	SCR
LE	MULTILITE	PIXIE	SEARS
LEADING EDGE	MULTISCAN	PORTLAND	SEH
LEADING TECH	MULTITECH	POWER II	SEVILLE
LEXMARK	MUSTEK	POWERFLEX	SHAMROCK
LG	N/C	PRECISION	SHARK
LITE-ON TECH	NCR	PREMIER INNOVATION	SHARP
LLOYDS	NEC	PREMO (PREMIO)	SHUNSHINE
LOGIK	NEWTEK	PRINCETON	SITEK
LTI	NEXT	PRO K SONIC	SMALE INT'L
LXI	NIC	PRO VIEW	SMILE
MAC	NOBLE VIEW	PROGEM	SMILE INTL
MAG	NOKIA	PROSONIC	SMITH CORONA
MAGIN	NORCENT	PROTON	SOIKO
MAGITRONIC	NTC	PSI	SONGHO
MAGNAVOX	OCCO	QUADRON	SONY
MAGVIEW	OCTEK	QUANTEX	SOPHONY
MARAGE	OKIDATA	QUASAR	SOUND DESIGN
MARANTZ	OLIVETTI	RADIO SHACK	SPACE COMMAND
MARK VISION	OMAX (OMAX)	RADIUS	SPACE WALKER
MAVA	OMNI TECH	RANDIX	SPECTRICON
MAX TECH	OPIM	RCA	SQUARE VIEW
MAX VIEW	OPTIQUEST	REALISTIC	SUN

Florida Electronic Product Brand Distribution Project

Television, computer monitor, computer and printer brands (continued)

Television, computer monitor 7/1/04-6/30/05

Computer and printer 1/1/05-12/31/05

Extracted from ESort Database 09/28/07

Brand Name	439 Brands
SUNSHINE	UL
SUPER NORTH	ULTRA
SUPER POWER	ULTRA VGA
SUPER VGA	UNISYS
SUPER VIEW	UNSPSTAN
SUPERCOM	UPTech
SUPERTRON	US LOGIC
SUPREMA	US MICRO TECH
SYLVANIA	UTECH
SYMPHONIC	UTOBIA
SYNCMaster	VERNEX
TALLY	VGASUPER
TAMRON	VIEW POINT
TANDY	VIEW SONIC
TANIER	VIEWTRON
TAT	VISION
TATUNG	VISION GRAPHICS
TAXAN	VISIONEER
TBC	VLMF
TEANIKA	WANG
TECH MEDIA	WEN TECHNOLOGY
TECHIES	WHITE WESTING HOUSE
TECHNICS	WISECOM
TECO	WORLD
TEKNIKA	WW
TELEVIDEO	WYSE
TENIKA	X86
TERAMARS	XAM
TEXAS INSTRUMENTS	XEROX
TEXTRONIX	XGA
THOMPSON	YUNDAI
THOMPSON (THOMSO	ZENITH
TIGER	ZHONGSHAN
TOSHIBA	ZYNK
TOTEVISION	
TOUCH	
TOYO	
TRC	
TRIGEM	
TRINITRON	
TRUEBLUE (TRUE BLUE)	
TTX	
TUM	
TVM	
TWC	

Appendix 3: Request for Proposals: Electronic Product Market Sales Data

Sent by the Florida Department of Environmental Protection to commercial market research firms via email September 1, 2005

Request for a Written Quotation:

We would like to receive a written quotation from your company to provide us with the electronic product market sales data as specified below. A mailed or faxed written quotation or an email quotation will be acceptable. Please send your written quotation to me (contact information at the end of this email).

Time Period

The most recent year or the most recent 4 sequential quarters for which these market data are available.

3 Customer Segments

1. Home –All home purchases, regardless of usage (home office, work-at-home, or consumer applications)
2. Small Office - Non-residential businesses with less than 10 employees in the total site.
3. Small Business - Establishments with 10 to 99 employees in the total site.

We would prefer that these segments be broken out for each brand but we will accept aggregate sales for the 3 customer segments by brand. If your customer segments do not exactly match those described above, please use customer segments that most closely match those described above. We are not interested in the large business or institutional customer segments.

4 Product Categories

For the US market, provide unit (number of products, not dollar value) sales for (1) the top-selling 10 brands (or, if fewer than 10 brands account for 80% of all units sold, those brands that together account for 80% of all units sold) and (2) the total unit sales of all brands for each of the 4 categories of equipment described below. The total unit sales for all brands will allow us to calculate the % of market that is associated with each of the top 10 brands.

1. Televisions, broken down into 2 categories
 - flat panel displays (all types)
 - cathode ray tube displays
2. Computer monitors, broken down into 2 categories
 - flat panel displays (all types)
 - cathode ray tube displays
3. Computers, broken down into 2 categories
 - desktop central processing units
 - portables (laptops, notebooks)
4. Printers

Pricing Alternatives:

Please provide pricing as follows:

- (1) the total cost for all 4 equipment categories if purchased as a group; and
- (2) the cost for each of the 4 categories if we purchase each category separately.

We will purchase the data for as many product categories as we can afford within our budget. That may be 1 or 2 or maybe all 4 depending on the written quotations that we receive.

Either Custom Research or Existing Reports are acceptable:

Our assumption is that data to meet our specifications will need to be custom researched or custom assembled by your staff. However, if there are existing reports which contain the specific data as described above, those would be acceptable.

Competitive Purchase:

We will be inviting several market research firms to submit a written quotation for this competitive purchase as is required in our purchasing procedures.

Written Quotation Due Date: Postmarked or email sent no later than September 15, 2005 5:00 pm EST

Vendor Registration Required If We Purchase from Your Company: In order for us to purchase from your company, should your company's quotation be selected, your company must be registered with the state of Florida's My Florida Marketplace in the Ariba electronic procurement system. To check whether your company is already registered, go to

http://dms.myflorida.com/dms/purchasing/myfloridamarketplace/myfloridamarketplace_quick_links/buyers, click on "Search for a Registered Vendor (SPURS

View)" and search for your company. If you are not registered, you can quickly register online. For online registration, go to

<http://dms.myflorida.com/dms/purchasing/myfloridamarketplace/vendors>, click on "Ariba Supplier Network (ASN)" and follow the instructions.

You can submit your quotation without being registered. However, if we select your quotation, your company must be registered before we can purchase from your company.

Please call me if you have any questions about this request for a written quotation.

Appendix 4: Florida's Electronic Product Brand Distribution Project Webpage
(downloaded 10/3/2006 from <http://www.dep.state.fl.us/waste/categories/electronics/pages/FloridaElectronicProductBrandDistributionProject.htm>)

Florida Electronic Product Brand Distribution Project

NEPSI (National Electronics Product Stewardship Initiative) discussions revealed that knowledge of the distribution of product brands that are sold and received for recycling is important information in developing a system of equitably funding the shared responsibility model for the product stewardship of end-of-life electronics. The Florida Department of Environmental Protection is conducting a brand distribution project for electronic products. A number of electronics manufacturers and Florida electronics recyclers are helping to support this project with funding and in-kind service.

Over a 12 month period that began in April 2004, we expect to sort, by product and brand, at least 35 and as many as 150 loads (at least 20 pallets per load) of electronic products collected for recycling in Florida. We will also be collecting data on the year each product was manufactured, if those data can be easily identified from product labeling. The targeted products will be collected from the residential and small business sources that are generally served by county recycling or thrift store donation services.

Detailed data from this project are available through custom software. [Click here to install this software and data on your computer.](#) To see the data, you should create a shortcut on your desktop to c:\esort_data\esort.exe after running the install program and double-click the shortcut. If you need help installing or using this software, contact [Mr. Jack Griffith](#) 850.245.8748.

The following electronic product categories and subcategories will be used for this project:

1. **TVs**
 - A. **Size**
 - a. consoles
 - b. > 19" tabletops
 - c. ≤ 19" tabletops
 - d. projection
 - B. **Display Type**
 - a. Flat panel
 - b. CRT
2. **Monitors (excluding dumb terminals)**
 - A. Flat panel
 - B. CRT
3. **Computers**
 - A. CPUs desktop
 - B. Laptops/notebooks
4. **Computer desktop peripherals**
 - A. Printers
 - B. Scanners
 - C. Copiers
 - D. Fax machines
 - E. Multifunction devices
5. **Video peripherals**
 - A. VCRs
 - B. DVD players (including programmable TiVo-type)
6. **Telecommunications devices (desk phones, mobile phones, pagers, PDAs, etc.)**
7. **Audio equipment (stereos, radios, tape players, speakers, etc.)**
8. **Other (does not fit any other product category, e.g., microwaves, typewriters, computer parts, dumb terminals)**

For Categories 1-5, we will collect brand, manufacturer (if different than brand) and year of manufacture (if on the product label). For Categories 1-5, we will also collect total pounds for subcategories. For Categories 6-8 we would just collect total pounds. With these weights, we can characterize the percentage split of the sorted escrap stream by product category.

This project will also attempt to assemble information on the distribution of product brands that are sold during roughly the same time period for which products received for recycling are sorted. The focus will be on product categories and subcategories 1-5 that are sold to home and small business users to the extent that those sales data are available. A comparison of these two data sets (products sold; products received for recycling) could be a useful exercise for the product stewardship system discussion.

Monthly updates on the results of the load brand sorts will be provided. A complete project report containing aggregated data and some analysis will capture these data and will be available to the public. For more information, contact Jack Price, Florida Department of Environmental Protection, 850.245.8751.

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Appendix 5: Televisions

Appendix 5.1: Sales Raw Data

Display Type	3Q 04	4Q 04	1Q 05	2Q 05	Total
CRT TV	4,532	5,317	4,513	4,385	18,746
RPTV	643	865	715	700	2,923
PDP TV	188	245	257	371	1,060
LCD TV	667	812	1,013	1,285	3,776
Total	6,030	7,238	6,497	6,740	26,506

Television sets for Small Office Usage (in thousands of units)

Display Type	3Q 04	4Q 04	1Q 05	2Q 05	Total
CRT TV					-
RPTV					-
PDP TV	2	2	2	3	9
LCD TV	2	2	3	4	11
Total	4	4	5	7	20

Television sets for Small Business Usage (in thousands of units)

Display Type	3Q 04	4Q 04	1Q 05	2Q 05	Total
CRT TV					-
RPTV					-
PDP TV	1	1	1	2	5
LCD TV	3	3	4	5	15
Total	4	5	5	7	21

Total Television Set Shipments

Display Type	3Q 04	4Q 04	1Q 05	2Q 05	Total
CRT TV	4,532	5,317	4,513	4,385	18,746
RPTV	643	865	715	700	2,923
PDP TV	190	248	260	376	1,074
LCD TV	672	817	1,020	1,294	3,803
Total	6,037	7,247	6,508	6,754	26,546

CRT TV = Cathode Ray Tube Display Televisions

RPTV = Rear Projection Display Television

PDP = Plasma Display Panel Televisions

LCD = Liquid Crystal Display Panel Televisions

Home Usage = All home purchases, regardless of use (home office, work at home, or consumer applications)

Small Office Usage = Non residential businesses with less than 10 employees

Small Business Usage = Establishments with 10-99 employees in the total site.

TV Market Shares by Technology and Quarter

CRT	3Q04	4Q04	1Q05	2Q05
Apex Digital	10.0%	1.0%	0.0%	0.0%
Sharp	6.6%	6.1%	4.8%	4.4%
Samsung	7.9%	7.6%	5.7%	7.8%
Sony	11.9%	11.0%	7.5%	5.7%
TTE (includes GE, Proscan and RCA)	5.9%	5.8%	6.3%	13.9%
Panasonic (Matsushita)	6.3%	5.7%	6.5%	5.8%
LG Electronics	1.9%	1.4%	1.3%	1.4%
Toshiba	6.0%	5.7%	6.5%	7.9%
Philips (includes Maganvox)	8.1%	7.6%	5.9%	5.5%
Sanyo	8.0%	7.0%	7.0%	6.6%
JVC	3.0%	2.3%	2.2%	2.2%
Zenith	4.5%	5.5%	4.8%	4.7%
Others	19.9%	33.3%	41.7%	38.9%
Total	100.0%	100.0%	100.0%	104.7%

LCD	3Q04	4Q04	1Q05	2Q05
Sharp	28.6%	21.1%	19.0%	13.4%
Samsung	5.3%	6.8%	6.6%	9.0%
Sony	4.6%	4.5%	2.8%	3.4%
TTE	7.1%	4.5%	3.6%	0.0%
Panasonic (Matsushita)	9.2%	7.9%	6.5%	5.3%
LG Electronics	4.4%	5.3%	3.3%	5.7%
Toshiba	8.0%	6.8%	5.1%	4.2%
Hitachi	8.2%	7.1%	6.0%	4.9%
Syntax Groups	7.7%	7.1%	4.1%	4.8%
Polaroid	0.7%	0.5%	0.1%	2.1%
SVA	2.1%	1.5%	0.7%	0.3%
Westinghouse	4.1%	4.4%	2.1%	3.7%
Dell	1.3%	1.2%	1.8%	1.3%
Philips/Magnavox	2.1%	3.8%	8.3%	8.6%
Advent	0.0%	0.0%	0.0%	4.8%
Akai	0.5%	0.8%	1.0%	1.2%
Proton			0.7%	1.1%
Proview			0.5%	1.0%
Sanyo	0.5%	0.8%	1.4%	1.5%
Others	6.6%	17.5%	26.5%	23.9%
Total	101.0%	101.6%	100.0%	100.0%

PDP	3Q04	4Q04	1Q05	2Q05
BenQ	0.1%	0.2%	0.3%	0.2%
Dell	0.5%	1.0%	2.7%	2.6%
Fujitsu	3.3%	3.1%	2.0%	2.2%
Gateway	8.7%	6.9%	4.5%	0.0%
Hitachi	3.7%	3.2%	2.7%	2.9%
HP	0.0%	0.5%	1.9%	1.6%
LG Electronics	7.1%	8.6%	14.6%	9.1%
Marantz	0.0%	0.0%	0.3%	0.2%
NEC	1.1%	0.9%	1.0%	0.7%
Panasonic (Matsushita)	15.5%	16.6%	19.6%	33.5%
Philips	8.7%	7.4%	5.3%	4.5%
Pioneer	13.7%	10.4%	9.6%	5.1%
PLO	3.4%	5.1%	0.2%	0.1%
Samsung	5.3%	6.6%	7.7%	9.1%
Sony	17.2%	12.0%	10.4%	3.4%
SVA-USA	0.0%	0.1%	0.4%	0.0%
Zenith	3.8%	3.1%	3.3%	2.2%
Others	8.0%	14.3%	13.5%	22.6%
Total	100.0%	100.0%	100.0%	100.0%

RP	3Q04	4Q04	1Q05	2Q05
Hitachi	5.9%	7.2%	6.8%	9.0%
LG Electronics	0.1%	0.0%	3.8%	1.8%
Mitsubishi	7.4%	9.4%	9.2%	12.2%
Panasonic (Matsushita)	4.6%	5.6%	5.3%	7.0%
Philips	2.3%	2.2%	2.4%	2.0%
Samsung	14.5%	16.5%	13.7%	18.1%
Sony	39.0%	32.6%	30.3%	21.9%
Toshiba	6.0%	7.1%	6.7%	8.7%
TTE	6.0%	6.5%	5.9%	18.1%
Others	14.3%	13.0%	15.8%	1.4%
Total	100.0%	100.0%	100.0%	100.0%

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Appendix 5.2: TTE Television Brand Information

<https://myces2007.bdmetrics.com/Portal/ViewCompany.aspx?id=1778116>, accessed August 30, 2007

International CES 40th Anniversary 1967-2007
powered by CEA

TTE Technology, Inc.

Brief Company Description:
Sales, Marketing and R&D for Digital Television Products

Brand Names:
RCA, RCA Scamium, TCL, and Thomson

Product Offerings

- Video - Digital TV Products
- Video - Video Hardware
- Video - Video Hardware - Direct-view Analog Color TV
- Video - Video Hardware - DLP Displays
- Video - Video Hardware - Flat Panel Displays
- Video - Video Hardware - LCD Screen Displays
- Video - Video Hardware - TV/VCR Combinations

Exhibiting At Booth: South 1,30507,Hilton 312,Hilton 323,Hilton 325,Hilton 326,Hilton 341

www.rca.com/television

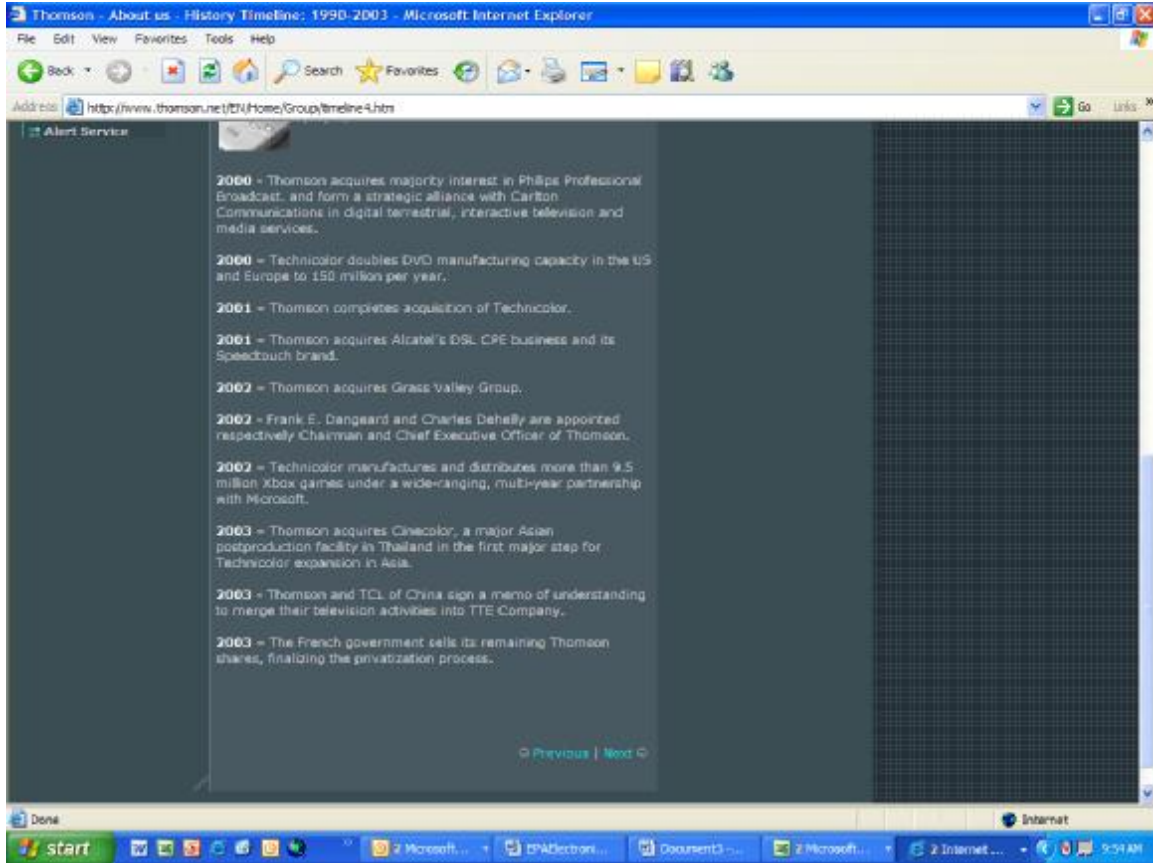
101 W. 103rd St.
Inh-620
Indianapolis, IN 46290
United States

Phone Number: 317-587-4052
Fax: 866-690-5010

CEA
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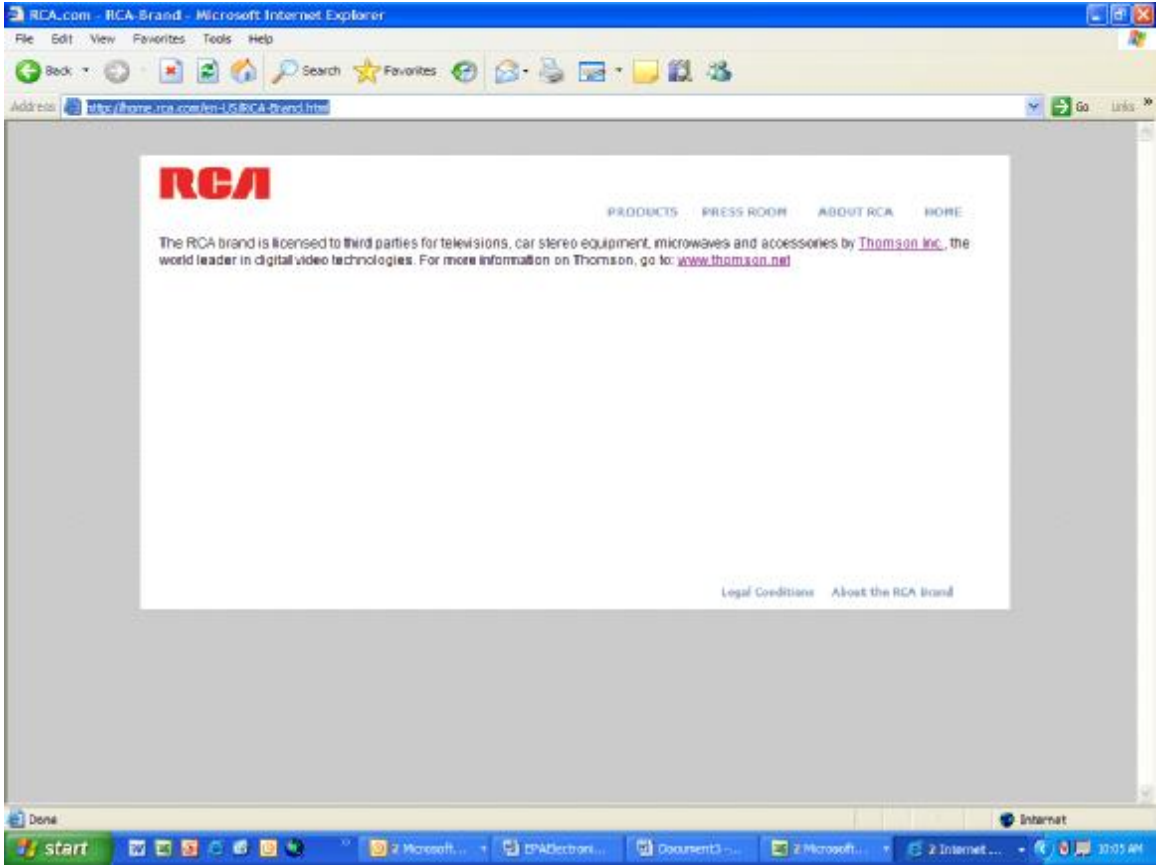
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<http://www.thomson.net/EN/Home/Group/timeline4.htm>, accessed August 30, 2007



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<http://home.rca.com/en-US/RCA-Brand.html>, accessed August 30, 2007



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Appendix 5.3: Brands Received for Recycling

Television (All Types) Brands Received for Recycling in Florida
 7/1/04-6/30/05
 Extracted from ESort Database 09/28/07

Brand Name	159 Brands		
ACER	FUTURA	NEWTEK	SYMPHONIC
ACTION	FUVAL	NORCENT	TAMRON
ADC	G E	OREON	TANDY
ADMIRAL	GATEWAY	ORION	TEANIKA
ADVENT	GE	PACKARD BELL	TECHIES
AIWA	GI	PANASONIC	TECHMEDIA
AKAI	GIBRALTAR	PHILCO	TECHNICS
ALPS	GOLD STAR	PHILLIPS	TEKNIKA
AMARK	GOLD STATE	PHILLIPS (PHILIPS)	TENIKA
AMTEL	GOLDSTAR	PHOENIA	THOMPSON
AMTRON	GRAIG	PHOENIX	THOMPSON (THOMSON)
AOC	GROUPSONIC	PIONTO	TOSHIBA
APEX	HAIER	PORTLAND	TOTEVISION
AUDIOVOX	HEATHRIT	PRECISION	TRINITRON
AWIA	HITACHI	PRINCETON	UL
BLACK SCREEN	HI-TECH	PRO K SONIC	VERNEX
BLACK STRIPE	HP	PROSONIC	VIEWSONIC
BMC	JAVELEN	PROTON	WANG
BOHSEI	JC PENNEY	QUANTEX	WHITE WESTING HOUSE
BROKSONIC	JC PENNEY (J.C. PENNEY)	QUASAR	WISECOM
BROOKSONIC	JC PENNEY (JCPENNEY)	RADIO SHACK	WORLD
CAPEHEART	JVC	RANDIX	WW
CAPRI	KEC	RCA	XAM
CELEBRIX	KENKA	REALISTIC	ZENITH
CELERA	KMART	SAMPO	
CHALLENGER	KMC	SAMSUI	
CHANCHONG	KONGA	SAMSUNG	
CITEK	KONKA	SAMYO	
CITIZEN	KTV	SANSUL	
CITOH	LEADING EDGE	SANYO	
COMMODORE	LG	SCOTT	
CONTEC	LLOYDS	SEARS	
CRAIG	LOGIK	SEH	
CROWN	LXI	SEVILLE	
CTRON	MAGIN	SHARK	
CTX	MAGNAVOX	SHARP	
CURTIS MATHIS	MARANTZ	SITEK	
CYCLONE	MAVA	SONY	
DAEWOO	MEMOREX	SOPHONY	
DAYTRON	MGA	SOUND DESIGN	
DELL	MITSUBISHI	SPACE COMMAND	
DIMENSION	MITSUI	SPECTRICON	
EMERSON	MONTGOMERY WARD	SQUARE VIEW	
FISHER	MULTITECH	SUPER VIEW	
FUNAI	NEC	SYLVANIA	

Appendix 6: Computer Monitors

Appendix 6.1: Sales Raw Data

Monitors for Home Usage

Units (000)	3Q04	4Q04	1Q05	2Q05	Total
CRT	1,462	1,764	1,099	918	5,243
LCD	2,663	3,002	3,127	3,320	12,112
Total	4,125	4,767	4,226	4,237	17,355

Monitors for Small Office Usage

Units (000)	3Q04	4Q04	1Q05	2Q05	Total
CRT	364	376	286	239	1,264
LCD	274	314	375	428	1,390
Total	638	689	661	667	2,654

Monitors for Small Business Usage

Units (000)	3Q04	4Q04	1Q05	2Q05	Total
CRT	889	822	632	553	2,896
LCD	702	991	1,187	1,210	4,090
Total	1,591	1,813	1,819	1,763	6,986

Monitors for Other Usage

Units (000)	3Q04	4Q04	1Q05	2Q05	Total
CRT	1,346	1,151	587	465	3,549
LCD	1,513	2,067	2,079	2,436	8,095
Total	2,859	3,218	2,666	2,901	11,644

Total Monitor Shipments

Units (000)	3Q04	4Q04	1Q05	2Q05	Total
CRT	4,061	4,113	2,604	2,174	12,953
LCD	5,151	6,374	6,768	7,394	25,686
Total	9,212	10,487	9,372	9,568	38,639

Total Monitor Shipments Less Other Usage

Units (000)	3Q04	4Q04	1Q05	2Q05	Total	%
CRT	2,715	2,962	2,017	1,709	9,403	35%
LCD	3,638	4,307	4,689	4,957	17,591	65%
Total	6,353	7,269	6,706	6,667	26,995	

Monitor Market Shares by Technology and Quarter

CRT	3Q04	4Q04	1Q05	2Q05
Dell	29.9%	23.0%	27.4%	30.1%
HP/Compaq	17.1%	19.9%	21.1%	19.1%
Other	15.6%	17.5%	6.8%	7.0%
Viewsonic	6.8%	5.4%	9.5%	4.4%
Gateway	5.8%	7.3%	4.2%	5.2%
KDS	2.6%	2.7%	5.2%	5.5%
AOC (EPI)	2.6%	3.1%	4.8%	4.5%
EMC/Mag/Proview	1.9%	3.9%	3.7%	4.6%
LG Electronics	3.3%	3.6%	3.9%	2.0%
Philips	1.5%	3.0%	2.7%	4.7%
IBM	3.3%	3.0%	3.0%	0.0%
Samsung	3.3%	2.7%	1.1%	1.2%
NEC-Mitsubishi	3.0%	1.7%	2.1%	2.1%
CTX	1.5%	0.9%	1.2%	1.2%
Acer	0.8%	1.0%	1.1%	1.5%
IBM/Lenovo	0.0%	0.0%	0.0%	4.4%
BenQ	0.1%	0.4%	1.1%	1.0%
Iiyama	0.4%	0.3%	0.4%	0.4%
Sampo	0.2%	0.2%	0.4%	0.3%
ImageQuest	0.1%	0.0%	0.0%	0.9%
Hansol	0.1%	0.2%	0.1%	0.0%
ADI	0.0%	0.0%	0.1%	0.1%
Sony	0.0%	0.0%	0.1%	0.0%
Total	100.0%	100.0%	100.0%	100.0%

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LCD	3Q04	4Q04	1Q05	2Q05
Dell	34.1%	38.2%	37.9%	34.6%
Other	17.1%	7.7%	10.1%	12.2%
HP/Compaq	11.2%	9.7%	8.7%	9.8%
Gateway	5.8%	5.4%	7.6%	7.9%
Samsung	5.5%	5.4%	5.1%	5.6%
NEC-Mitsubishi	6.1%	4.8%	3.3%	3.2%
Viewsonic	4.0%	3.8%	3.6%	3.2%
Acer	2.3%	3.7%	4.3%	3.1%
AOC (EPI)	0.5%	4.4%	1.2%	2.5%
Sony	2.0%	1.7%	2.7%	2.0%
LG Electronics	0.1%	2.8%	2.1%	1.9%
BenQ	1.1%	2.5%	2.0%	1.2%
Philips	0.8%	1.1%	1.4%	3.1%
IBM	2.5%	2.2%	1.7%	0.0%
EMC/Mag/Proview	1.2%	1.7%	1.4%	1.5%
Apple	0.6%	1.7%	1.4%	1.1%
ImageQuest	0.8%	1.0%	1.5%	0.7%
Planar	1.3%	0.0%	1.1%	1.3%
Iiyama	0.6%	0.8%	0.9%	0.7%
CTX	1.3%	0.5%	0.6%	0.6%
KDS	0.4%	0.5%	0.8%	1.0%
IBM/Lenovo	0.0%	0.0%	0.0%	2.1%
Sampo	0.3%	0.3%	0.4%	0.3%
Eizo	0.1%	0.1%	0.1%	0.1%
ADI	0.1%	0.1%	0.0%	0.0%
Tatung	0.0%	0.0%	0.1%	0.0%
Hansol	0.2%	0.0%	0.0%	0.0%
Sharp	0.0%	0.0%	0.0%	0.0%
AG Neovo	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%

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Appendix 6.2: Brands Received for Recycling

Monitor (All Types) Brands Received for Recycling in Florida
7/1/04-6/30/05

Extracted from ESort Database 09/28/07

Brand Name	274 Brands		
AAMAZING	COMPAQ	GOLDSTAR	MARK VISION
ACE	COMPUADD	HAIER	MAX TECH
ACER	COMPUDRIVE	HANSOL	MAX VIEW
ACT	COMPUDYNE	HITACHI	MAXTECH
ADC	COMPUFOCUS	HNS VIEW STATION	MEGAIMAGE
ADI	COMPUSA	HP	MEGATRONIC
ALR	COMPUTECH	HEWLETT PACKARD	MEMOREX
ALTON	CTX	HUNDAI	MICRO
AMD	CTY	HYUNDAI	MICRO ELECTRONICS
AMDEK	CYBERVISION	HYUNDAI	MICRO Q
AMIGA	DAEWOO	IBM	MICRON
AMP VIEW	DATA GENERAL	IDEA	MICROSCAN
AMSTACT	DATEC	IDEK	MINI MICRO
AMSTRAD	DAYTEK	IDENTITY	MITSUBISHI
AMTRON	DAYTRON	IYAMA	MONOCHROME
ANEDEX	DECAVIEW	IMPRESSION	MTC
ANTEC	DECISION DATA	INFINITY	MULTISYSTEMS
AOC	DELL	INFOTEL	MULTILITE
AOPEN	DELTA	INSYNC (INSYNC)	MULTISCAN
APPLE	DIG	ITT	MUSTEK
ARCHE	DIGITAL	JEAN	N/C
ARCUS	DIGIVIEW	JVC	NCR
ASC	DR MON	KAREA DATA	NEC
AST	DTK	KDS	NIC
AST BRAVO	DTS	KEER	NOBLE VIEW
AT&T	E LO	KIEER	NOKIA
ATEL	EDISON	KLH	OCCO
ATT	EEP	KOMODO	OKIDATA
AURORA VISION	EMACHINE	KONKA	OPIM
AUTOGRAPH	EMC	KOREA	OPTIQUEST
AVI	EMC MULTISYSTEM	KTV	ORCHESTRA
AXIS	EMERSON	L*VIEW	ORION
BARTON DATA	ENVISION	LAN PLUS	OUTLOOK
BELERON	EPI	LASER	PACKARD BELL
BLUE POINT	EPSON	LE	PANASONIC
BROTHER	EQUITRAC	LEADING EDGE	PC I-MMT
BRS	ESP	LEADING TECH	PC JP
CAM	EWIC	LITE-ON TECH	PCM
CANON	FOCUS	LTI	PCMI
CASPER	FTIS	MAC	PERCOMP
CAT	FUTURA	MAG	PERIMAX
CDM	GATEWAY	MAGITRONIC	PHILLIPS (PHILIPS)
COMAS	GE	MAGNAVOX	PHONEKENTS
COMMODORE	GEM	MAGVIEW	PIXIE
COMPAL	GENE	MARAGE	POWER II

Monitor (All Types) Brands Received for Recycling in Florida (continued)
 7/1/04-6/30/05
 Extracted from ESort Database 09/28/07

Brand Name	274 Brands	
PREMIER		
INNOVATION	SUPERCOM	YUNDAI
PREMO (PREMIO)	SUPERTRON	ZENITH
PRINCETON	SUPREMA	ZHONGSHAN
PRO VIEW	SYLVANIA	ZYNK
PROGEM	SYNCMASTER	
PROTON	TANDY	
PROVIEW	TANIER	
PSI	TATUNG	
QUADRON	TAXAN	
QUANTEX	TBC	
RADIUS	TECH MEDIA	
RCA	TECHMEDIA	
REFLEX	TECHNICS	
RELESYS	TECO	
RELISUS	TELEVIDEO	
RELISYS	TERAMARS	
RIC	TEXTRONIX	
ROYAL	THOMPSON	
RPC	TOSHIBA	
SAMPLE	TOUCH	
SAMPO	TRIGEM	
SAMRON	TRUEBLUE (TRUE BLUE)	
SAMSUNG	TTX	
SAMTRON	TUM	
SANGO	TVM	
SANYO	TWC	
SCAN PRO	ULTRA	
SCEPTRE	ULTRA VGA	
SCOTT	UNISYS	
SCR	US LOGIC	
SHAMROCK	UTECH	
SHARP	UTOBIA	
SHUNSHINE	VGASUPER	
SMALE INT'L	VIEW POINT	
SMILE	VIEW SONIC	
SMILE INTL	VIEWSONIC	
SMITH CORONA	VIEWTRON	
SOIKO	VISION	
SONGHO	VISION GRAPHICS	
SONY	VISIONEER	
SUN	VLMF	
SUNSHINE	WANG	
SUPER NORTH	WEN TECHNOLOGY	
SUPER VGA	WYSE	
SUPER VIEW	XGA	

Appendix 7: Desktop and Portable Computers

Appendix 7.1: Sales Raw Data

Desktop Computers for Home Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	1,201,128	884,006	950,834	1,198,262
HP	858,477	818,475	1,010,763	1,130,636
Gateway	504,145	548,641	628,777	670,304
Apple	155,289	180,601	169,841	215,563
Sony	51,321	38,561	25,250	39,167
Systemax	15,221	14,850	16,695	16,863
Lenovo	-	5,102	6,619	9,323
Micro Electronics	3,498	3,386	3,589	4,369
MPC(MicronPC)	2,808	2,963	2,796	2,740
Everex	15	18	20	1,125
Others	1,084,057	960,606	1,033,181	1,031,666
Total	3,875,959	3,457,208	3,848,365	4,320,018

Desktop Computers for Small Business Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	372,512	338,697	316,136	291,357
HP	154,639	97,658	172,793	138,199
Lenovo	-	22,958	29,787	31,078
Sony	16,709	13,167	8,838	12,106
Acer	10,505	9,220	9,566	9,760
Systemax	7,380	6,750	6,678	6,558
MPC(MicronPC)	4,257	5,198	5,768	5,653
Gateway	4,163	1,072	180	4,804
Micro Electronics	2,998	2,902	3,076	3,145
Apple	12,074	2,664	2,324	3,074
Others	524,184	453,735	480,898	471,319
Total	1,109,422	954,020	1,036,044	977,052

Desktop Computers for Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	225,175	226,869	212,251	193,640
HP	108,046	169,810	73,868	95,937
Lenovo	-	20,407	23,168	24,862
Sony	13,129	13,167	8,838	10,682
Systemax	8,302	7,650	8,586	8,431
Acer	6,159	6,003	6,254	6,204
Micro Electronics	5,663	5,481	5,811	5,417
Gateway	8,656	5,159	4,546	4,114
MPC(MicronPC)	2,536	3,021	3,461	3,392
Apple	17,221	2,664	2,324	3,074
Others	516,882	454,203	451,475	501,702
Total	911,769	914,434	800,581	857,456

Desktop Computers for Home, Small Business and Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	1,798,815	1,449,571	1,479,221	1,683,259
HP	1,121,162	1,085,943	1,257,424	1,364,772
Gateway	516,964	554,873	633,503	679,221
Apple	184,584	185,929	174,489	221,711
Sony	81,158	64,895	42,925	61,955
Systemax	30,904	29,250	31,959	31,852
Lenovo	-	48,467	59,574	65,264
Micro Electronics	11,469	11,346	11,683	11,303
MPC(MicronPC)	10,291	11,604	12,818	13,414
Everex	15	18	20	1,125
Acer	16,664	15,223	15,820	15,965
Others	2,125,123	1,868,544	1,965,554	2,004,687
Total	5,897,150	5,325,663	5,684,990	6,154,527

Portable Computers for Home Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	488,481	565,332	738,571	881,820
HP	344,839	356,857	586,557	656,711
Toshiba	264,680	234,802	345,885	393,692
Gateway	156,583	109,569	157,849	289,008
Apple	111,202	94,718	136,220	155,717
Sony	57,920	50,598	64,982	79,745
Averatec	73,323	55,074	57,472	42,815
Lenovo	-	14,641	15,432	23,317
Micro Electronics	5,696	5,910	6,326	8,603
Sharp	3,982	4,296	5,016	5,758
Others	108,179	94,650	115,750	129,204
Total	1,614,885	1,586,447	2,230,061	2,666,390

Portable Computers for Small Business Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	123,489	131,122	142,331	153,431
HP	49,000	62,923	95,368	113,911
Toshiba	66,913	58,593	88,175	87,995
Acer	35,011	42,544	59,281	64,115
Lenovo	-	40,825	48,853	52,640
Sony	23,373	22,784	25,028	30,022
Apple	14,506	17,722	23,633	19,553
Fujitsu/Fujitsu Siemens	5,653	4,340	5,545	5,939
Micro Electronics	4,882	5,066	5,422	5,531
Sharp	2,613	2,954	3,009	3,519
Others	179,902	149,884	170,355	164,657
Total	505,341	538,755	667,001	701,314

Portable Computers for Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	82,880	85,346	89,777	100,797
HP	55,721	68,371	103,481	83,478
Toshiba	56,036	49,508	57,952	61,150
Acer	28,165	36,375	49,700	53,743
Sony	30,825	28,175	25,296	35,826
Lenovo	-	14,322	15,797	18,899
Apple	22,533	16,295	22,254	15,751
Micro Electronics	9,222	9,569	10,242	9,832
Gateway	5,630	3,072	-	5,829
TwinHead	2,600	2,866	2,924	3,420
Others	154,082	147,620	165,387	166,967
Total	447,694	461,520	542,810	555,693

Portable Computers for Home, Small Business and Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	694,850	781,800	970,679	1,136,048
HP	449,559	488,150	785,407	854,100
Toshiba	387,629	342,903	492,012	542,837
Gateway	162,213	112,641	157,849	294,837
Apple	148,240	128,735	182,107	191,021
Sony	112,118	101,558	115,306	145,593
Averatec	73,323	55,074	57,472	42,815
Lenovo	-	69,788	80,082	94,857
Micro Electronics	19,800	20,545	21,991	23,966
Sharp	6,596	7,250	8,025	9,276
Fujitsu/Fujitsu Siemens	5,653	4,340	5,545	5,939
TwinHead	2,600	2,866	2,924	3,420
Acer	63,176	78,919	108,980	117,859
Others	442,163	392,154	451,492	460,829
Total	2,567,920	2,586,722	3,439,871	3,923,397

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Appendix 7.2: Brands Received for Recycling

Computer (All Types) Brands Received for Recycling in Florida
1/1/05-12/31/05

Extracted from ESort Database 09/28/07

Brand Name	117 Brands	
3COMM	DIMENSION	PROVIEW
A OPEN	DTK	QUANTEX
ACCEL	DYNAMICS	RADIO SHACK
ACER	DYNEX	ROSE
ACMA	ECOMPACT	SABRE
AGI	EMACHINE	SAMSUNG
AGL	EMC	SANYO
ALR	EVERROX	SEARS
AMI	FUJITSU	SONY
AMSTRAD	GATEWAY	SPACE WALKER
AOC	GE	SUNSHINE
AOEM	GENERIC	SUPER POWER
AOM	HITACHI	TANDY
AOPEN	HP	TAT
APPLE	HYUNDAI	TECHNICS
ARGENT	IBM	THOMPSON
AST	INFOTEL	TIGER
AST BRAVO	INSYNC	TOSHIBA
ASUS	JES	TOYO
AT&T	KDS	TRC
ATECH	LASER	UNISYS
BERNOVLLE	LEADING EDGE	UNSPSTAN
BIZ & BYTES	MAC	UPTECH
BONDWELL	MAXTECH	US MICRO TECH
BTI	MEGA	WANG
CANON	MICRON	X86
CCS	MICRONPC	ZENITH
CCU	MICROTEK	
COMPAQ	MIDWEST MICRO	
COMPU SURF	MOTOROLA	
COMPU TREND	MST	
COMPUDYNE	NCR	
COMPUSA	NEC	
COMPUSOURCE	NIC	
COMPUTECH	NTC	
COMTEK	OCTEK	
CPT	OLIVETTI	
CTS	OMNI TECH	
CTX	PACE	
CYBERNATION	PACKARD BELL	
DALY	PC	
DATA SYSTEM	PC PARTNER	
DCS	PERFEC MAX	
DELL	PIONEX	
DIGITAL	POWERFLEX	

Appendix 8: Printers

Appendix 8a: Sales Raw Data

Printers for Home Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
HP	693,773	699,270	951,934	1,001,625
Lexmark	369,467	249,509	364,528	370,215
Canon	290,089	295,950	357,010	331,388
Epson	268,597	249,501	251,916	265,973
Dell	85,856	93,519	127,571	110,175
Konica Minolta	26,960	26,910	25,223	29,233
Samsung	14,019	18,511	17,900	22,739
Brother	2,057	2,293	2,838	3,653
OKI	387	392	254	354
Total top ten brands	1,751,206	1,635,854	2,099,173	2,135,354
Total ALL Vendors	1,751,206	1,635,854	2,099,173	2,135,354

Printers for Small Business Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
HP	154,465	146,478	182,392	168,938
Dell	85,846	93,519	127,571	110,175
Lexmark	68,141	58,785	78,269	80,586
Brother	19,934	18,249	19,055	24,847
Canon	22,460	22,031	25,526	23,686
Epson	24,155	22,018	21,990	21,871
Konica Minolta	16,239	15,645	14,144	16,619
Samsung	9,346	12,341	11,934	15,159
OKI	12,977	10,525	10,388	13,272
Xerox	4,174	4,357	5,812	4,950
Total top ten brands	417,737	403,947	497,079	480,104
Total ALL Vendors	428,607	416,372	508,158	491,549

Printers for Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units
Dell	314,764	342,903	467,759	403,975
HP	174,353	161,946	191,028	174,572
Lexmark	135,192	123,241	165,558	171,012
Canon	42,876	42,945	50,902	47,242
Epson	40,042	36,740	37,005	38,738
Samsung	18,692	24,682	23,867	30,318
Brother	17,216	16,243	17,325	22,640
Konica Minolta	21,576	21,045	19,279	22,541
OKI	6,725	5,503	5,355	6,336
Xerox	2,043	1,998	2,738	2,071
Total top ten brands	773,479	777,245	980,816	919,444
Total ALL Vendors	777,422	781,977	984,818	923,535

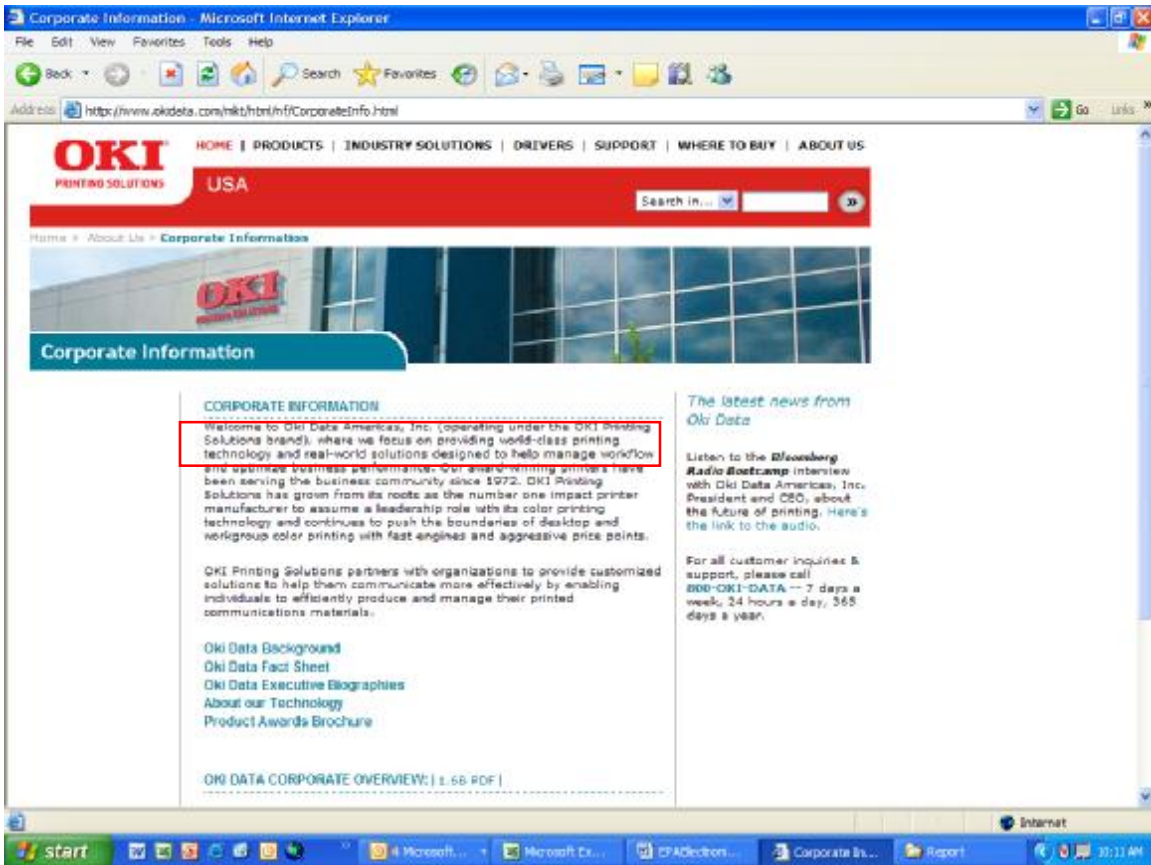
Printers for Home, Small Business and Small Office Usage

Vendor	2005Q1 Units	2005Q2 Units	2005Q3 Units	2005Q4 Units	2005 Units
HP	1,022,592	1,007,694	1,325,354	1,345,135	4,700,775
Dell	486,466	529,941	722,900	624,325	2,363,632
Lexmark	572,800	431,535	608,355	621,813	2,234,503
Canon	355,426	360,925	433,438	402,315	1,552,104
Epson	332,794	308,260	310,911	326,581	1,278,545
Konica Minolta	64,774	63,600	58,645	68,392	255,412
Samsung	42,057	55,534	53,701	68,216	219,508
Brother	39,208	36,785	39,218	51,139	166,349
OKI	20,089	16,419	15,997	19,962	72,466
Xerox	6,217	6,354	8,550	7,021	28,143
Total TOP 10 vendors	2,942,422	2,817,047	3,577,067	3,534,902	12,871,438
Total ALL Vendors					12,934,024
Other Vendors					62,587

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Appendix 8b: OKI and Okidata Printer Brand Information

<http://www.okidata.com/mkt/html/nf/CorporateInfo.html>, accessed September 27, 2007.



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Appendix 8c: Brands Received for Recycling

Printer Brands Received for Recycling in Florida

1/1/05-12/31/05

Extracted from ESort Database 09/28/07

Brand Name 28 Brands

APPLE

BROTHER

CANON

COMPAQ

DELL

EPSON

FUJITSU

GENISCAN

HITACHI

HP

IBM

JDL

LANIER

LEXMARK

MAXUM

NEC

NEXT

OKIDATA

OMAX (OMAX)

PACKARD BELL

PANASONIC

QUASAR

SAMSUNG

SHARP

TALLY

TEXAS INSTRUMENTS

TOSHIBA

XEROX

Note: This list excluded "ALL BRANDS (UNKNOWN),"
"CLONE" and duplicate brand names.

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