

Chapter One: Technology and the U.S. Population

As technology continues to evolve, its presence will permeate American society. Therefore, it is important that arts and cultural organizations understand how American society is responding and interacting with this changing technology. Capitalizing on these trends will enable organizations to interact more effectively with their constituents.

Consumer trends for technological devices demonstrate how the American population utilizes technology on a daily basis. The Consumer Electronics Association (CEA) issued a report entitled *Digital America 2002, the US Consumer Electronics Industry Today*, which “explains new technology trends that are enhancing consumers’ lifestyles and workstyles.”¹

One notable trend is that old technology is quickly replaced by new technology. For example, the majority of people now want to purchase CD players instead of record players. New products, such as DVD players, TV/PC combination units and broadband Internet access, have also entered the market in the last few years.

Audio Products

Examining consumer purchasing trends over a period of time can reveal what products new technology is displacing. Table I-1 provides an overview of audio devices owned by American households.

Table I-1
Top Audio Products Consumers Own

Product	Percentage of Customers Who Own Product
Stereo shelf system	63%
CD-ROM drive on computer	42%
Component CD player	36%
Any DVD or DVD-ROM player	41%
DVD-ROM drive on computer	29%
Stand-alone DVD player	25%
Surround sound receiver	24%

Source: [Digital America 2003](http://www.ce.org/publications/books_references/digital_america/audio/default.asp), 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/audio/default.asp.

The three most common audio products owned by American households are: a stereo shelf system (63%), a computer CD-ROM drive (42%), and a DVD/DVD-ROM player (41%). CD players, DVD players, VCRs, wireless phones and personal computers will each be considered using information from CEA’s “Digital America 2002, the US Consumer Electronics Industry Today” report.

¹ [Digital America 2003](http://www.ce.org/publications/books_references/digital_america/default.asp), 2003, Consumer Electronics Association, 24 May 2003
www.ce.org/publications/books_references/digital_america/default.asp.

Factory sales of CD players grew from 1997 to the present, with the exception of 2001, when sales decreased, possibly as a by-product of the economic downturn. The CEA's report indicates that sales of CD players generally increased as the average price per player decreased.

**Table I-2
Total CD Players**

Year	Factory Sales Unit Sales in Thousands	Dollar Sales In Millions	Average Unit Price
1997	33,095	\$4,302	\$130
1998	40,507	\$4,375	\$108
1999	45,225	\$4,477	\$99
2000	54,374	\$5,002	\$92
2001e	52,200	\$4,802	\$92
2002p	53,700	\$4,887	\$91

Source: Digital America 2003, 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/audio/surround_sound.asp.

Video Products

DVD players, a new technology, and VCRs, an old technology, fulfill similar needs in the American household. This makes it useful to compare their purchasing patterns. According to 2001 CEA research, "DVD players reached the 25% market penetration faster than any product in consumer electronics history."² DVD player factory sales grew an estimated 53% between 2000 and 2001 and they have a projected sales growth of 25% between 2001 and 2002. In contrast to the sharp rise in DVD player popularity, VCR sales are beginning to decline. As listed in Table I-3, VCR factory sales peaked in the year 2000 and have declined since then. Between 2000 and 2001 an estimated 32% decrease in factory sales were followed by a projected sales decrease of approximately 10% between 2001 and 2002.

Table I-3
VCR Decks

Year	Sales to Dealers Unit Sales in Thousands	Dollar Sales In Millions	Average Unit Price
1997	16,673	\$2,618	\$157
1998	18,113	\$2,409	\$133
1999	22,809	\$2,333	\$102
2000	23,072	\$1,869	\$81
2001e	15,700	\$1,099	\$70
2002p	14,450	\$954	\$66

Source: Digital America 2003, 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/video/vcrs.asp.

Table I-4
Separate Component DVD Players*

Year	Sales to Dealers Unit Sales in Thousands	Dollar Sales In Millions	Average Unit Price
1997	349	\$171	\$491
1998	1,079	\$421	\$390
1999	4,072	\$1,099	\$270
2000	8,499	\$1,717	\$202
2001e	13,000	\$2,145	\$165
2002p	16,250	\$2,519	\$155

*Includes laserdisc combinations and portable

Source: Digital America 2003, 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/video/default.asp.

² Digital America 2003
http://www.ce.org/publications/books_references/digital_america/video/dvd_dominates.asp.

Wireless Phones

Wireless phones continue to increase in popularity. According to CEA, "nearly half of wireless phone owners now carry their phones with them at all times, compared to one-third a year ago."³ As shown in Table I-5, wireless phone sales rose a dramatic 56% between 1999 and 2000.

Table I-5
Wireless Phone Sales

Year	Sales to Dealers Unit Sales in Thousands	Dollar Sales In Millions	Average Unit Price
1997	27,000	\$5,940	\$220
1998	30,000	\$6,000	\$200
1999	33,700	\$6,066	\$180
2000	52,600	\$8,995	\$171
2001e	53,400	\$8,651	\$162
2002p	57,000	\$8,835	\$155

*Sales through consumer channels

Source: Digital America 2003, 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/wireless/default.asp.

³ Digital America 2003
http://www.ce.org/publications/books_references/digital_america/wireless/default.asp.

Personal Computers

The final consumer electronic device to be examined is the personal computer. Personal computers reached a purchasing peak in 2000 and had an estimated purchasing decrease of 14% in 2001. The purchasing rate of personal computers is projected to remain constant between 2001 and 2002.

Table I-6
Personal Computers*

Year	Sales to Dealers Unit Sales in Thousands	Dollar Sales In Millions	Average Unit Price
1997	11,000	\$14,950	\$1,450
1998	12,800	\$16,640	\$1,300
1999	14,900	\$16,390	\$1,100
2000	16,400	\$16,400	\$1000
2001e	14,400	\$12,960	\$900
2002p	14,400	\$12,312	\$855

*Sales include notebooks and does not include TV/PC combos. Average price includes monitor.
Source: [Digital America 2003](http://www.ce.org/publications/books_references/digital_america/home_networking/default.asp), 2003, Consumer Electronics Association, 24 May 2003
http://www.ce.org/publications/books_references/digital_america/home_networking/default.asp.

Advances in technology also are of interest, such as the use of broadband Internet. Broadband is defined as "connection to the home or business that is faster than 200 kilobits per second in at least one direction."⁴ According to the American Electronics Association (AEA), the number of broadband subscriptions increased 488% from December 1999 to June 2002. In December 1999 there were 2.8 million subscribers, in June 2002 there were 16.2 million subscribers.⁵ Specifically, in Pennsylvania, subscriptions increased by 37% from December 2001 to June 2002. Pennsylvania is ranked 36th nationwide in total broadband subscribers.⁶

Arts and cultural organizations should know how to use this technology strategically. The first step in learning how to use technology effectively is to examine what technology an organization already operates.

⁴ "Pennsylvania Broadband Subscribers Exceed One-Half Million," American Electronics Association, 20 May 2003, 24 May 2003 http://www.aeanet.org/Publications/idet052203_Broadband2003Pennsylvania.asp.

⁵ [Broadband in the States 2003](http://www.aeanet.org/publications/idet_broadbandstates03.asp), American Electronics Association, 19 May 2003, 24 May 2003
http://www.aeanet.org/publications/idet_broadbandstates03.asp

⁶ "Pennsylvania Broadband," AEA.