CDs PC? OK!

Good things come in small packages, as the saying goes. Just one millimetre thick, each modern CD can store over 6,600 average length novels – which would take up about 100 metres of bookshelves!

But where do CDs come from? And where do they go after we're finished with them?

Many everyday products (from cars to books, refrigerators to hamburger packaging) can be tracked

Buy the way

lowest 5 countries highest 5

Cars
(per 1,000 people)

Lebanon	732
New Zealand	578
Brunei	576
Iceland	561
Italy	542
Somalia	0.1
Armenia	0.3
Bangladesh	0.5
Myanmar	0.6
Tanzania	0.8

Colour TVs
(per 100 households)

Belgium	99.6
USA	99.5
Ireland	99.3
Saudi Arabia	99.1
Canada	98.7

CD players
(per 100 households)

Denmark	89.3
Netherlands	89.0
Norway	88.2
New Zealand	86.4
Germany	85.4

Computers
(per 100 people)

Switzerland	70.9
USA	65.9
Singapore	62.2
Sweden	62.1
Luxembourg	59.4

Mobile phones
(per 100 people)

Luxembourg	106.1
Israel	95.5
Italy	93.9
Iceland	90.6
Sweden	88.9

Sources: youthXchange; BBC; USDA; www.endhunger.org

And beyond

Just as CDs replaced vinyl records, they are themselves gradually being replaced by MP3 players, which read digital audio files from built-in hard drives. These can store thousands of songs – perhaps an entire music collection – and allow users to constantly change their playlists by simply deleting old songs and downloading new ones.

Afterlife

Millions of CDs become obsolete every year. About 545 tonnes of them are thrown out annually in the United States. They usually end up in landfills and incinerators because they are not biodegradable.

But there are many other uses for unwanted CDs. Many people sell them to stores, trade them with friends or donate them to charity shops, libraries and community organizations. Others creatively transform discarded discs into drink coasters, disco balls and wind chimes.

Another life

Your old CD could also become part of a car, a coat-hanger, a street light or even another CD! One American company, GreenDisk, sells office supplies made from recycled CDs and cases, urging customers to 'save your CDs, save your money, save your planet'.

Useful life

Consumers take their new CDs home or to work, and pop them into CD players and computer drives. Some (like music and software programmes) contain only the manufacturers' original information. Others come blank – either limited to just one recording or, better, rewritable up to 1,000 times over.

What we do

More than half of Greek 15-year-olds communicate electronically every day.

More than half of Israeli 15-year-olds drink soft drinks every day.

Nearly half of Ukrainian 15-year-olds watch 4+ hours of TV every day.

from start to finish through 'life-cycle analysis'. This helps manufacturers improve the materials and processes they use to make goods more environmentally friendly, and lets consumers see where they fit into the picture.

Compact discs originated in the United States, where music lover and scientist James T. Russell invented the first in his home in 1965.

Tired of the wear and tear on his vinyl phonograph records, he devised his system to read massive amounts of information without the use of moving parts.

Materials

Most materials for CDs originate as raw materials, which are processed. Polycarbonate plastics for the discs and lacquer for finishing are both made from petroleum products. Aluminium for the coating comes from bauxite ore extracted from the earth's crust through smelting (a highly energy-intensive procedure).

Meanwhile the Japanese corporation Sanyo recently began manufacturing the world's first biodegradable CDs with plastics derived from corn. Each 'MildDisc' requires 85 kernels (one ear of corn will yield 10 discs) and breaks down into water and carbon dioxide after 50-100 years, making the expression 'disposable pop music' a reality.

Manufacturing

Machines mould and stamp tiny indentations containing digital information into the plastic, then coat it with reflective aluminium so that CD players can read the embedded data. After receiving a protective layer of lacquer, discs are labelled and screen-printed with chemical dyes or water- or soy-based inks.

Packaging

Discs are placed into decorative plastic cases (sometimes made from recycled materials – including old CDs) and shrink-wrapped in polyvinyl chloride (PVC).

Distribution

Trucks, planes and trains carry boxes of the finished CDs to warehouses and shops around the world.

What we waste

UK: $571 million worth of food ends up in landfills or incinerators each year (not to mention the additional $71 million in disposal costs).

Republic of Korea: More than $6 billion worth of food is wasted (more than the total amount of food available in the Democratic People's Republic of Korea).

USA: One quarter of all food produced domestically spoils, is tossed out or is left on the plate (43.5 billion kilos wasted each year – 1,381 kilos per second).

Recycling

Recycling rates in selected OECD countries

Paper and cardboard	
Australia	47%
France	50%
Germany	70%
Italy	37%
Japan	59%
Portugal	46%
Spain	48%
Sweden	63%
Switzerland	63%
UK	41%
USA	42%

Aluminium cans	
Australia	63%
France	30%
Germany	78%
Italy	50%
Japan	83%
Portugal	27%
Spain	25%
Sweden	86%
Switzerland	91%
UK	42%
USA	53%

Glass packaging	
Australia	40%
France	55%
Germany	83%
Italy	40%
Japan	78%
Portugal	40%
Spain	31%
Sweden	86%
Switzerland	91%
UK	30%
USA	23%

Total municipal waste (kg per capita, per year)	
Australia	690
France	530
Germany	590
Italy	510
Japan	410
Portugal	440
Spain	650
Sweden	470
Switzerland	660
UK	580
USA	730

Sources: OECD; **Pocket World in Figures**, 2005 Edition, London: Profile Books Ltd, 2004