

Recordable compact
disk (cd-r) is a blank
cd with



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CdrCDR

the ability to be recorded onto. The unit that is used to write data to these blank CDs is called a CD Writer or Burner. This unit is not unlike a normal CD drive, the difference being that it has two lasers one invisible, one visible. The invisible, is used for writing data onto the surface of the blank CD. The visible, is for reading information off the CD. The unit itself is currently for use in a computer system only, and therefore must be installed like a normal CD drive. The two CD drives then run coherently to copy data from one cd to another.

CDR was introduced around 5 years ago, but really only became affordable over the last two years. This has increased its popularity to an extent where its use has started to spark issues relating to the reproduction of copyrighted material. This has started to have a negative economical effect on the music industry. I will address the issue of piracy later in this report. CDs have become a cost effective industry standard when it comes to storing data.

Some terms that you will encounter throughout this report are:

- ? CD-ROM Compact Disk Read Only Memory, (non recordable CD)
- ? CDR Recordable Compact Disk
- ? Floppy disk a square 3 inch disk, with a capacity of 1.4mb
- ? Cartridge A high capacity form of storage, slightly larger than a floppy disk
- ? Byte - The way that data is measured
- ? MB megabyte, (1,000 bytes)

? Gig gigabyte, (1, 000mb)

? Piracy The illegal reproduction of copyrighted material.

Factors influencing the development of CDR

CDs have become the standard for all forms of media, be it audio, visual or multimedia. Until recently, there has been no economically viable way to create your own CDs at home. So the first CD Writers were introduced, made by Panasonic, costing over \$900. Like most things, an increase in demand caused the recommended retail price to drop to the point where they are almost as low as \$400. With this decline in price, CD Writers have become more affordable. The acknowledged intent is that people will use it for personal use, mainly to backup data, but this is not always the case, as the ease at which someone can copy a CD and sell it for their own profit has become a major issue. The act of reproducing copyrighted material is commonly known as Piracy.

Piracy is widespread, economically effecting record companies and producers alike. The laws in relation to copying CDs are not specific at all. In America a blank CD has a \$10 levy incorporated into the price, this money goes toward record companies and producers, and entitles people to copy CDs for their own personal use. In Australia however, there is no levy so no such rule applies. In the manual of the Philips CDR 870 Compact Disk Recorder it reads: Important. It is a criminal offence under applicable copyright laws, to make unauthorised copies of copyrighted material, including computer programs, films, broadcasts and sound recordings. This <https://assignbuster.com/recordable-compact-disk-cd-r-is-a-blank-cd-with/>

equipment should not be used for such purposes. However on the opposite page it says: Subject to certain legal constraints on copying, you can make your own CDs. This illustrates that the laws are not precise. One thing is sure though, piracy of copyrighted CDs of any kind be it audio or data, does effect the owners of the copyrighted material and therefor is at least morally wrong.

Benefits and costs of the system.

The following compares the current storage medias.

Media Type	Equipment Required	Cost	Storage Type	Capacity	Cost	Shelf Life
CD	CD Burner	\$400 - \$700	Recordable CD	650mb	\$3 - \$10	Long
Zip	Zip Drive	\$250 - \$400	Zip Cartridge	100mb	\$30	Medium
Jaz	Jaz Drive	\$600 - \$800	Jaz Cartridge	1gig	\$100	Medium
Tape	Tape Drive	\$650 - \$900	Tape	4 8gig	\$100	Medium
Floppy	3 inch disk drive	\$20 - \$30	3 inch floppy disk	1.44mb	\$2	Short

As this table shows, the economic benefits of CDR are obvious. Low cost and high capacity. When it comes to sociological benefits, you can not put a price on the ability to freely read and write up to 650mb of data on one storage media, that has a longer shelf life than any other. The only cost to society is that you can not write onto a CDR without a CD Writer. For a group at work it is costly if you try to install a CD Writer into every computer. For the individual, CDR allows the backing up of data and creation of personal CDs. Floppy disks are still the standard in Re-Writable storage, but as the speed and cost of CD Writers improves further CDs will become the industry standard.

The impact of CDR on society

The development of CDR technology has had a tremendous impact on society and the way that we go about storing data. CDR has made it possible for the general public to create their own compact disks. These disks can hold anything up to 650mb (about 450 floppy disks), where previously the only option was to store data on 3-inch floppy disks, which only hold 1.4mb. The net result is a public that no longer is entirely reliant on the CDs that are released on the market. This advance is another step toward making the inefficient floppy disks obsolete.

The ability to create CDs has negatively effected the music industry tremendously. Piracy has increased, allowing illegally reproduced copies of music to be created and sold at the expense of the owner of the original material. More often than not these pirate copies go undetected, but due the severity of the crime and the fear of piracy getting even more out of control then it already is, various laws have been introduced. These laws make it illegal to create copies of any copyrighted material unless you are backing up an original copy that you own. Higher penalties for prosecuted offenders have also been introduced to deter potential offenders.

In both of these cases, the Internet plays a large role. Due to the accessibility the Internet, it is very easy to download copies of music and software. Then using CDR, create your own replica of the original material.

Possible future developments

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The future is very promising; the way that we store data has constantly developed, yet we are only beginning to see the effectiveness of improved quality at lower cost. One trend that we have seen continue at a consistent rate in the computer industry is miniaturisation. In Communiqu , Bill Gates (the owner of Microsoft) writes: we are now seeing the development of microminiaturisation. This shows that the trend will continue, Writable and Re-Writable CDs will become as commonly used as floppy disks. Unlike previous technological advances like the car and telephone, where it took several generations to become mainstream, here we have something thats happening in a single generation. In the space of 15-20 years the use of computers will go from something that no one did as a part of their job, to being a crucial part of the vast majority of all jobs.

Strategies used to market CDR

When selling CDR, the main strategy used is that they always highlight the fact that you can create your own CDs. This is the most attractive feature, more so then backing up data, because everyone wants to be able to create his or her own CDs. I interviewed Daniel Fenollar who is the manager of Home Entertainment Centre, an established computer store in Werribee. According to sales reports for last twelve months, CDR sales have increased by 2/3. He says this is due the cost becoming lower and an emphasis on the ability to create CDs at home. His store sales about ten computers a week, out of these ten, four of them the customer asks for a CD Writer to be installed with the package. This is mainly due to word of mouth. Daniel said, people are talking about CDR because its exciting, and thats all the

marketing that we'll ever need!

Conclusions based on the results of the research

CDR is the most efficient for storing large amounts of data at a cost that is lower than any other removable, random-access medium. Although CDR only writes once onto a disk then closes it, its low media costs make this it feasible to create new copies when required.

I found that cartridge drives like Iomega's Zip and Jaz drives are priced comparably to writable CR-ROM drives, but CD-ROM disks typically cost from \$3 to \$10 each, while a 1gig Jaz cartridge costs over \$100. Also if you want to transport data the other system must have the same type of drive, this is less likely for cartridges, as there is no industry standard for cartridge data formats. CDs also have a longer shelf life than tapes or cartridges.

The future is promising. When we are able to write and re-write onto CDs as quickly and easily as a conventional floppy disk, who knows what will develop around the corner.

Bibliography

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? 6 " View Point," Bill Gates, Communiqu, April 99 page 64. The world is changing rapidly. A single technological development can lead to an infinite number of consequential developments each of which having varying impacts on humanity. These impacts, or indicators, display the results of technological development. Climactic, global economic, social, and energy related indicators are important in showing humanity's use of technoscience, and demonstrate that certain political and economic changes are needed so that technoscientists can use their knowledge to benefit the great majority of humanity. Climactic indicators are excellent examples of humanity's misuse of technoscience. One such indicator is global temperature. It displays the results of the burning of fossil fuels and the release of nitrous oxides into the atmosphere. Production of coal, oil, natural gas and nuclear power each expanded by 1 percent in 1995 (Brown, 16). Globally, the ten warmest years out of the last 130 have all occurred in the eighties and nineties (Brown, 15). These figures demonstrate that humanity is not effectively controlling and limiting its use of fossil fuels. As a result, acid rain falls upon the earth destroying what is left of the planet's forests and, an estimated 37 percent of the fish species that inhabit the lakes and streams of North America are either in jeopardy or extinct. A second indicator that displays humanity's misuse of technoscience is the global economy. Global economic statistics show the results of the applications of technoscience. In 1995, the global economy grew by an estimated 3.7 percent the largest gain since the 4.6 percent growth in 1980 (Brown, 74). The use of technoscientific

developments in various fields raised the global output of goods and services. Although this was an impressive expansion promoting employment and development, it also increased the unsustainable demands on the earth's natural systems and resources, such as the planet's forests.

Applications of technoscience have established the need for wood. The forests that once blanketed more than 40 percent of the earth's land surface now cover only 27 percent of it (Brown, 19). As a result, soil erodes, and the capacity of soils and vegetation to absorb and store water is reduced.

Humanity's misuse of technoscience can also be displayed with social indicators. Eightyseven million people were added to the population in 1995 (Sachs, 88). The overwhelming majority were added to countries that were already struggling with the results of technoscience: depletion of forestry, erosion of soil, and reduction of aquifers. This added population only increased these countries' problems. Population growth is slowing in some country's, but for the wrong reasons. In Russia, the combination of economic deterioration and environmental pollution has raised death rates, while a loss of hope in the future has lowered birth rates (Brown, 19). In Zimbabwe, births still exceed deaths, but by much less than a few years ago because AIDS related deaths are increasing. Beneficial applications of technoscience could be used in the above cases to improve social situation by introducing greater population control methods and by helping to control the AIDS epidemic. Energy related indicators show the positive effects of technoscientific application. While the production of coal, oil, natural gas and nuclear power each expanded by 1 percent in 1995, wind electric generation expanded by 33 percent and sales of solar cells climbed 17 percent (Brown, 5658). The harnessing of wind and solar energy does not create the

environmentally harmful byproducts associated with their fossil fuel and nuclear counterparts. Humanity's use of renewable energy sources can only decrease environmental problems. Charles E. Lindblom's procedure of public policy integration is an effective method by which technoscientists can be assured that their developments will be thoroughly explored so that humanity will not be hurt by the technoscientist's work. Corporations give strong incentivesystems (bonuses, stock options) to encourage executives to diligently pursue corporate profitability (Woodhouse, 173). This results in a rapid, untested decisionmaking process that yields swift innovation of products and production techniques that offer short term buyer effectiveness, profits for the seller and potentially long term negative consequences to a portion of humanity, the environment or the world. Political procedures concerning technological developments must be gradual and deliberate so that the development's benefits can greatly outweigh the disadvantages. Conflicting leaders should explore developments so that each can consider the other's views. The initial policy should be revised in small, reversible steps in response to feedback about errors, interpretations, and changing perceptions of needs and opportunities (Morone, 168). The net result will be a general benefit to humanity. From an economic standpoint, technoscientist's work might yield a greater humanitarian benefit with the increase in common people's role in the technological decision making process. Unfortunately, technological developments, no matter how beneficial to society they might be proven to be, cannot be put into action without governmental and corporate acceptance, or funds. However, those that are chosen to decide whether it is necessary to invest in such developments might not be true representations of society. Some in this

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hierarchy could be more interested in profit than global well being. This hypothesis could consequentially have an affect on technoscientists psychologically. Those looking to better the world might become cautious and skeptical in releasing and promoting their views and ideas. There is also the possibility that the temptation of money would override the fundamental principal technoscientists have of improving the world. Society should have a greater role at the decision making step. Those who might be directly affected by technological developments might not be so quick to accept or decline a development for economic reasons. Technoscientists could then put greater focus on improving the lives of those who are affected by their developments. In order for the world to benefit from technoscience, humanity must learn to use it correctly and with foresight. Current climactic, global economic, social, and energy related indicators show that the earth is deteriorating from humanity's overall misuse of technoscience. Changes must be made in political and economic situations related to technoscientific development. If changes are not made, the decline in global quality of life will proceed as rapidly as technological development now advances.

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