Courtenay Browne
Econ 230
Dan Johnson
December 15, 2000

VCR DEVELOPMENT, DIFFUSION AND IMPACT

I

Sony pioneered the videocassette recorder innovations that opened the VCR market for heavy competition and continuing innovations in the field of video. The VCR was a novel technology that involved risk taking from companies developing it. Not only was it unclear whether the public would accept the VCR, but failures in the development process were common. VCR development is a prime example of Schumpeterian thought. There was no clear public demand for home videocassette recorders but Sony took the supply-side initiative and risk and pushed the innovation. This indicates the ability of large firms to innovate well and the benefits of institutionalized research and development. The new innovations led to the emergence of the VCR industry and, therefore, many subsequent industries reliant on the VCR. Unfortunately for Sony, however, it resulted in being a victim, to a certain degree, of creative destruction. After Sony invented its Betamax VCR, the market opened up for VCR inventions and innovations by other firms. These firms chose to implement the VHS tape, which was non-compatible with Beta players, and the new technology destroyed the Betamax market.

HISTORY

Although there is a long history of video technology, it was not until Sony that anyone was able to effectively crack the home market. In World War Two, Germany invented Magnetophons for the recording of radio broadcasts and the new technology was

brought to the United States after the war. The German invention was utilized commercially in 1947 when Bing Crosby recorded his weekly radio show. Hollywood studios, shortly there after, began implementing versions of the Magnetophons to record dialogue, sound effects and music. Until the mid-1950s, "video" meant only the visual component of a televised signal.

In 1956, Ampex introduced and patented a videotape recorder (VTR) and "video" came to be associated with the VTR. A major development of Ampex's VTR was the conversion of video signals to sound format (FM signals) prior to recording them. The tape used to record these signals, however, was closely related to that used in audio recording. Thus, the technologies for videotape recording and recording film sound were similar; there was now significant crossover between audio and video fields.

The VTR consisted of both the recording machine and the plastic tape that a video signal was recorded on. The Ampex VTR was a four-headed (heads being the circular pieces the reels sit on) machine and sold for over $100,000. It was purchased mainly by broadcasting stations (Lyons 1976: 203). In the 1960s the equipment was continually refined to make it simpler and cheaper so it became more common. By 1974, Electronic News Gathering video portapaks were used by TV news and enabled the extensive footage of the Vietnam War; the innovation immediately had dramatic and lasting affects on society when put to this use.

It was at this time that Sony recognized the potential of video technology and wanted to develop and innovate for itself. "'As soon as we heard the news that Ampex had developed the first VTR,' Ibuka [of Sony] says, 'our development staff, headed by Kihara then, began working on the concept. Three months later we made our first

successful videotape recorder- which shows the importance of proper leadership and guidance, of having the proper target in technical development.'" Although Sony quickly developed a VTR system similar to Ampex's (it was still fairly heavy and expensive, at about $10,000), the company was not striving to "make broadcast equipment" (Lyons 1976: 150). Sony chose to invest its inputs in something beyond that and not settle for a comparable innovation to Ampex's VTR, although it would have been a good source of revenue. Sony targeted home video; it wanted to develop a machine that would be smaller, desirable to the wider market and affordable. As a large firm, as Schumpeter argues, Sony had the ambition, resources and development abilities to focus on long run and more extreme innovations.

SONY AIMS FOR INVENTION OF VCR FOR HOME USE

In 1966, Sony introduced the first low-priced compact VTR, the CV-2000. It sold for $800 and used ½ inch magnetic tape. The CV-2000 could record in black and white for one hour. It was a huge breakthrough. Sony continued progressing and invented the cassette recorder with its U-Matic machine. The U-Matic sold for $1,000 and was used in education, business and medical fields. It became especially desirable for news gathering because it was portable, didn't have high film development costs and could easily be edited. Plus, it could bring the news stories more quickly and at a savings of seventy to eighty percent for the station (Lyons 1976: 205). The U-Matic became the standard in America but something smaller and less expensive was still sought for home use.

Sony came up with ten ways of reaching its target and each was attempted, in order to find which was the most feasible (Lyons 1976: 151). As a large firm, Sony had the resources to support such a large research and development project and to keep a

number of projects moving at the same time. Thus, the innovation of today's VCR stems much from the research and development ambition and abilities of a large, successful and ambitious company willing to try new projects and technological endeavors. Sony believed that the public would respond to the ability to control their own viewing patterns and would be accepting of the electronic image and it put significant resources towards achieving this. "We [Sony] know that VTR will be important in the future and we are willing to invest now for that time" (Lyons 1976: 212). By 1975, Sony created the Betamax, the first VCR for home use.

The Betamax used ½ inch tape that was extra thin, a narrow head and reduced tape speed (1.57 inches per second as compared to the 3.75 inches per second for the U-Matic) and, therefore, the tape was able to fit into a less expensive cassette. The Betamax was simple to operate, consumed less tape, was more compact than predecessors and the tape cost about half of the U-Matic's (Lyons 1976: 207). It was able to record one program while watching another on the television and had a "pause" button that could eliminate commercials when a program was being recorded. The Betamax was the first home use machine that could play prerecorded tapes. It first sold in America as a combined unit with a television and the separate deck sales followed a few months later. This strategy was used to establish the higher price with the combined unit so the less expensive, separate Betamax would appear more attractive (Lyons 1976: 209). The strategy worked and the goal was achieved; Sony marketed a highly developed product that was simple to use. Its main purpose was to be a time-shift machine for recording programs on convenient cassettes. Sony believed, "Betamax will revolutionize

television… It will change the concept of prime time so that any time can be prime time" (Lyons 1976: 210).

INNOVATION STRATEGIES CLASH

Unfortunately for Sony, when the VCR revolution fully caught on, it was not grabbing hold of Betamax. Sony knew the Betamax was possible and it set out to engineer its production, regardless of actions or lack there of, by other companies. Sony's innovation was eventually a great spur to the video market but Sony was, in effect, a guinea pig for the rest of the industry. Schumpeter was correct that, as a large firm, Sony was able to innovate from the supply-side and it was successful in doing so. But, on the other hand, being first is not always best. Other companies had the luxury of learning from what Sony did and how it chose to produce the Betamax. This is a perfect example of the free-rider problem experienced by technologically innovative firms.

Betamax represented twenty years of intense work in the video field and the accumulation of the knowledge of virtually every sector of the Sony Corporation. A few companies, before Betamax, attempted videotape recorders for consumer use but failed. The unsuccessful projects cost the companies huge expenses and created much hesitation in the industry. As Sony was working on the Betamax, other companies were watching and then wondering if the low-cost disk would be preferable to the tape that Sony was utilizing. Sony bypassed the disk in favor of the tape. "If they really wanted to establish their system, they should be willing to put in the required investment and take the necessary risk themselves," Sony said, referring to other large competitors. Then added, "We are not relying on other companies to do the job for us" (Lyons 1976: 210).

About a year after the introduction of Betamax, the Japan Victor Company (JVC) began selling a home recording machine that used a VHS (video home system) format that was non-compatible with Betamax. JVC believed that a two-hour machine would be more appealing to consumers than the one-hour Betamax. Within two years of its introduction, the lower-priced, longer recording VHS VCR controlled 57 percent of the U.S. VCR market (Levy 1989: 24). Betamax's share of the market dropped to five percent by 1986 and in 1988 Sony announced that it would begin manufacturing VHS VCRs.

Sony reached the market first and attempted to establish the Betamax as the standard but the longer recording time of the VHS VCR and cassette tape overcame. It was instead the VHS format that achieved standardization and this is almost impossible to overthrow, let alone compete with. By 1988, Betamax tapes had maximum 5 ½ hours of recording and VHS had a maximum of eight hours. Plus, VHS had a price advantage and, as the VHS market share continued to rise, the relative number of prerecorded titles available only on VHS tapes also rose (Levy 1989: 27-28). At first Betamax was at least perceived to produce a better picture but was later found to have no difference. The Betamax format ended up holding no advantages over the VHS except that it was the first on the market. Therefore, the initial strategy of Sony became a failure as other firms learned from their processes and improved upon them to cater more accurately to the demands of consumers.

Competition between Betamax and VHS VCRs, along with competition among VHS producers, increased innovation in the fields. Results included longer recording times, better programmability, stereo sound and lower prices. The competition also

increased consumer awareness and, therefore, willingness to accept the new technology, through heavy advertising and sales promotions. At first, major use of the VCR was for time-shifting broadcast programming, as demonstrated with the Betamax. As prerecorded videos became widely available by the mid-1980s, the non-recording function of the VCR became a primary reason for its use.

To sum up, the proliferation of the VCR and VCR-related technology began with the invention of the Betamax. Sony's determination and abilities opened the door for the acceptance, expansion and boom of the VCR industry. Opening the door, however, did not lead to control of the market. Sony was quickly displaced as the VCR market became a hot area for invention and innovation. The VHS format achieved standardization and Sony had to adapt to the will of the market. The innovation, changes and competition have led to dramatic affects for society and the entertainment industry and VCR diffusion has been wide and continuing.

II

The enormous diffusion of the VCR, along with the technologies and industries that developed from its success, has created large affects in many areas. The VCR was originally developed for a narrow purpose yet competition spurred innovation and

diffusion exploded because of this. The VCR was a catalyst for a number of inventions and the growth of a number of industries. Its influence has greatly affected other technology mediums. The VCR is still being improved upon and it is put to use all over the world in various functions.

THE EMERGENCE OF THE VHS SYSTEM

Firms other than Sony were hesitant to develop VCRs because most experts believed that the VCR would remain an expensive luxury item used only by a limited number of affluent individuals and by corporations. The focus of VCR sales was for recording television programs and Sony competitors did not deem this a broad enough use to attract enough popularity, especially at what they thought would remain high prices. The primary use of the VCR by innovators and early adopters was for time-shifting broadcast programming, not for viewing prerecorded tapes. Sony advertised its VCR for this purpose and was not interested in pursuing a market for prerecorded tapes. In addition, complicated copyright issues seemed an imminent roadblock because movie studios initially regarded videocassettes as a threat rather than a source of income. It seems that Sony and few others recognized the potential of the VCR to become a billion-dollar video rental industry.

COMPETITION EVOKES INNOVATION AND DIFFUSION

The ability of Betamax to infiltrate the home market enticed other manufacturers to work towards their own home video devices. These subsequent manufacturers, however, chose to forgo the Betamax system for the “Video Home System” (VHS), believing that the longer recording time afforded by VHS systems would be much more

appealing to consumers. The systems were incompatible so whichever won the market-share would basically put the other out of business.

There was a battle between VHS and Beta for market dominance. Sony achieved its goal of getting to the market first but it did not retain a strong enough hold. The VHS system had a longer recording time than Beta and this was a major factor in Beta's dramatic loss of market share. In addition, VHS held a critical price advantage and as the VHS market share increased, so did the relative number of prerecorded titles available exclusively on VHS tapes. The Beta format did not appear to hold any advantages over VHS and was quickly ousted from the market. A combination of the longer recording time, lower price and increased number of models available, allowed the VHS VCR to win consumer popularity over Betamax and within two years of its introduction, VHS controlled 57 percent of the US VCR market. Standardization was achieved.

The format battle between Beta and VHS actually served to enhance VCR diffusion. Total VCR annual unit sales rose dramatically from 402,000 in 1978 to 3,354,000 in 1983 (Levy 1989: 24) and diffusion into households expanded rapidly from 1983-1987. Beta versus VHS format, along with competition between different VHS manufacturers led to technological innovations. Advances included longer recording capabilities, programmability, stereo sound, lower manufacturing costs, and lower prices. The fierce competition also increased consumer awareness (a large step in getting a new technology accepted and adopted by the public) through heavy advertising and sales promotions.

Early on, the videodisc player (VDP) also had an important impact on VCR diffusion. Although VDPs did not crack the home market, efforts were made in the early

eighties to spark the adoption of VDPs for home use. RCA proposed one system and Philips marketed another. RCA heavily promoted its VDP in 1981 and this generated interest and also heightened consumer awareness of home video in general. The introduction of the VDP unexpectedly made the VCR a more attractive technology for consumers. The VDP as a potential threat to VCR home video dominance resulted in VCR manufacturers responding by drastically lowering prices. Some consumers still opted for the VDP but many chose the more versatile VCR, which is shown by the dramatic increase in VCR sales from 1981 to 1983. The VCR could perform the playback function of the VDP and added recording capabilities for about the same price as the Philips disc player. As mentioned with the heightened advertising due to the Betamax-VHS race, acceptance and awareness by the public is an important step in the diffusion of a technology. The early invention of the VDP helped the VCR to achieve this. VDP, like Betamax, also increased innovation because of the perceived threat of the VDP to the VCR.

VIDEOCASSETTES

VCR growth can also be tied to the increased availability of software, such as prerecorded tapes and cable television. The VCR, however, did not necessarily need other software in order to be a success. As mentioned, the VCR was at first not advertised for use with prerecorded material and its popularity still grew. Thus, prerecorded software availability does not seem to have been a strong factor in the early VCR diffusion. All programs on television were potential software sources.

Although there was no great demand from VCR adopters for prerecorded cassettes, entrepreneurs saw the opportunity VCRs presented to promote prerecorded

material. The growth and diffusion of the prerecorded videocassette industry followed the diffusion and popularity of the VCR. At first, the majority of prerecorded cassettes sold were sexually oriented. In 1978 and 1979 an estimated 75 percent of all prerecorded tapes sold were X-rated (Levy 1989: 30). As cassettes expanded beyond this realm, inexpensive videocassette rentals dramatically increased the VCR's usefulness through playback of prerecorded movies. As videos became widely available by the mid-1980s, the non-recording function of the VCR became a primary reason for its adoption by consumers. The percentage of VCR households that rented prerecorded tapes rose from 49 percent in 1982 to 80 percent in 1985 and then to 90 percent in 1986, where it leveled off.

DIFFUSION RATE IN COMPARISON WITH SIMILAR TECHNOLOGIES

In comparison with other new media technologies that preceded it, the VCR shows an extremely high diffusion rate. All of the new technologies initially diffused very slowly while they were perfected, their price was lowered and as consumers grew to accept them. Once VCR sales took off in the 1980s, the growth in household penetration is very comparable to that achieved by black-and-white television sets in the 1950s. VCRs grew much more rapidly than cable. In fact, the introduction of the VCR may have slowed the growth of pay-cable movie services. It appears, too, that the VCR diffused more rapidly than the color television. Annual VCR sales in the eighties grew considerably more rapidly than annual color TV sales in both the sixties and seventies. Plus, it took ten years for VCR annual sales to reach 10 million and it took 25 years for color TV to reach 10 million sales.

DIFFUSION INTO OTHER REALMS AND COUNTRIES

The VCR also developed into an important educational tool. It infiltrated classrooms and visual learning became an important addition for teachers. Furthermore, surveys of non-English speaking immigrants proved that even in the early years of the VCR these people were employing it to tape shows such as “Sesame Street” in order to learn English. Immigrants also reported heavily utilizing the VCR to watch shows from their homelands and to avoid American TV. They used their VCRs as a way to view mass media and other content out of the mainstream of American television programming.

The VCR also affected cultural industries worldwide. It diffused more rapidly in countries with low media diversity than in the United States, where multiple cable channels, subscription television services, and local cinema are available. The film viewing experience in virtually every country of the world has forever changed through the introduction of the VCR. Since much of the content that circulates internationally for VCRs originates in the US or western Europe, cultural imperialism can be dispersed through the VCR medium. Plus, videos, especially with the ease with which they can be pirated, can be difficult to regulate and control. The VCR enabled content that could once be centrally controlled by TV station or cinema owners to circulate freely in places such as the Soviet Union.

PATENTS AND GROWTH OF RELATED TECHNOLOGIES

Before, during and after the benchmark inventions leading to the proliferation of the VCR in American households (the Ampex, VTR, U-Matic, Betamax and VHS), VCRs and VCR-related equipment was and is being invented continuously. There are an immense amount of patents in this field. There is not, however, much overlap in patent references or in article references. They tend to cite approximately five previous patents

and the most VCR-related patents were granted in the 1980s. The patents cited are generally from varying firms and also varying inventions, although usually inventions for some part of the VCR. Early VCR patents may cite non-VCR-related inventions but other than that, the patents tend to cite within the field. The only area in which I came across overlapping patent references is in VCR design patents. RCA's patent for the design of a videodisc player (D275,566, 1984) is commonly cited. Goldstar has a patent for a VCR design that is also commonly cited (D295,859, 1988), and TEAC Corporation of Japan has a 1988 patent design for a VTR that is referred to, as well (D297,932). Japan is the most common place for VCR and VCR-related inventions to be made. The early VCR-related patents, especially, tend to be concentrated in Japan, mostly in Tokyo. As diffusion increased and popularity grew, American corporations heavily patented in the early to mid-1980s. Then, generally in the later 1980s and into the 1990s, Korea had a surge in VCR-related patenting.

The innovations of the VCR are many and are of all different types. The programming capabilities are always changing (ability to program the VCR using the phone is now an option), new designs for combination TV-VCRs abound and VCRs with the ability to dub tapes were introduced in the late 1980s. Various methods, each claiming to be better than the last, are patented for connecting televisions to VCRs and for recording while watching TV on a different channel; these are just a few of the numerous examples. Patents for various types of tape cassettes and camcorders for home videos further exemplify the industries that VCR diffusion affected.

Shortly after the booming popularity of the VCR, the camcorder penetrated households. By 1988, the Electronics Industries Association reported that sales of

camcorders represented 16 percent of all VCR unit sales, up from 4 percent in 1985 (Levy 1989: 26). Camcorder unit sales increased from 517 thousand in 1985 to over two million in 1988. As the popularity of the VCR grew, people were more inclined to want the portable video cameras. Camcorders became popular for parents as documentaries of their young children. The camcorder became so common that camcorders for kids were introduced and people began videotaping trips and events rather than taking pictures. A widely popular show in the United States was even based on camcorders catching people in embarrassingly hilarious acts.

In addition, the VDPs that failed to penetrate the home market in the early eighties have developed into the DVD players that may be en route to replace the VCR. It is now not uncommon for houses to purchase DVD players in conjunction with their VCRs or even for new homeowners to forgo purchasing a VCR for a DVD player. DVD technology is still in the process of being perfected and, as it did for the VCR, it will increase in popularity as its promotions increase and prices drop.

To sum up, VCRs were initially innovated for a very narrow purpose; one that it seems would not enable much diffusion. Competition helped to spur innovation, acceptance, and lower prices and the original function of recording television programs grew into an extremely influential and rapidly diffusing technology with deep affects spanning the world. Video watching is an enormously popular leisure time activity for Americans and for people all over the world. In addition, the VCR has become a vehicle for learning and connecting people globally, as it allows vision of all cultures and places. The immense diffusion of the VCR and its powerful affects should not be

underestimated. The VCR has been a catalyst for a number of inventions and of the growth of a number of industries. Future inventions of this nature are sure to continue given the lasting popularity and usefulness of the VCR.

III

The VCR and subsequent VCR-related technologies as new mediums of communication have greatly impacted society in America and cultures all over the world. The proliferation of video has affected areas as widely spanning as courts of law, security, music presentation and an entire realm of leisure time activities in the United States alone. Additionally, video is a worldwide medium. The VCR is an information channel that makes the world smaller and more connected. It also opens nations to an entirely new arena of entertainment and information and can be a worry to some governments because it is fundamentally individualistic; it can escape their attempts to control the thoughts and directions of their cultures.

SOCIETAL IMPACT IN AMERICA

Video creates powerful images and inevitably affects people's perceptions of what they are viewing, in addition to allowing the site of images and events that previously were unavailable. The ability of reporters to video live events was a large factor in the impact of VCR-related technologies. David Halberstam, describing the impact of television on the civil rights movement in his book, *The Fifties*, wrote:

> Film was so powerful that a reporter was well advised to get out of the way and let the pictures do the talking. Certainly, that was true in Little Rock. The images were so forceful that they told their own truths and needed virtually no narration. It was hard for people watching at home not to take sides: There they were, sitting in their living rooms in front of their own television sets watching orderly black children behaving with great dignity, trying to obtain nothing more than a decent education, the most elemental of American birthrights, yet being assaulted by a vicious mob of poor whites (Cohn and Dow 1998: 9).

The VCR enabled media providers to move into realms never before open to them and changed television and film viewing experiences drastically. The explosion of video created an entirely new medium of communication and had vast economic affects.

Subsequent to VCR development, videocassettes changed the economic system by which media products are delivered and disrupted the framework of copyright law over that system (eventually a 1984 Supreme Court ruling stated that home videotaping of television broadcasts is not a violation of copyright laws). The videocassette industry is also one of the driving forces of the consumer electronic, entertainment and marketing industries. The Hollywood entertainment sector is largely dependent on the revenues brought in by its home video activities. The VCR also impacted society because viewing feature films on videocassette is a substitute for leisure time that might otherwise have been spent watching broadcast television. Subscription television and pay-per-view type options have combined with VCRs to reduce the audience for direct television broadcasts (Alvarado 1988: 135).

VCR technology also impacts Courts in the United States. With the video revolution of the mid-1970s came the technological developments that contributed most to television's acceptability in courtrooms. VCR-related technological advances brought

much entry into courts and the development of Court TV (the first full-time network devoted solely to coverage of court proceedings). There is debate over cameras in the courtroom that boils down to a constitutional argument over the right of public access, on one hand, and a defendant's right to a fair trial, on the other. Some believe that cameras are the only way to grant a truly open trial and others believe that the presence of cameras in the courtroom influences the trial. The taping of the O.J. Simpson trial is the prime example of such a debate. The videotaping of the Simpson trial largely contributed to the attention it received and its deep infiltration of society. Cameras have developed so much that in the O.J. Simpson case, the camera was a wall-mounted robot, responding to the commands of an operator at a remote console. But, even with the new technology, concerns that courtroom cameras somehow influence the conduct and outcome of trials have not been relieved.

VCR technology also impacted society through the combining of video and music in the MTV channel. According to Bob Pittman, vice president of the Warner-Amex Satellite Entertainment Co., MTV was envisioned as another component of the home audio system, rather than a TV channel, and this enabled viewers to "see" music (Hanson 1987: 65). Music video allows the sight of bands and their performances by people who might otherwise never see them and it creates a visualization of music in a different way than any former television program did. The influence of the visualization of music had a large impact on advertising and other TV genres. It is now difficult to tell many ads on television from music videos. The intended effect of creating a mood through the visualization of music stems from the ability to videotape music videos.

Home video systems further expanded their realm and impacts in numerous directions. For example, VCR technology led to the invention of video games. Video games have had a profound affect on American children and how their leisure time is spent. Some argue that video games create isolation and laziness while others say that they can offer excellent approaches to motivational learning and increase hand-eye coordination. Home video systems also extended beyond the realm of entertainment functions to the realm of security. Video cameras are effective means of surveillance. In Los Angeles, civilians with camcorders formed the Volunteer Surveillance Team as a way to bolster crime-stopping efforts in their neighborhoods. In the aftermath of George Holliday's taping of the Rodney King beating, the LAPD began installing its own video cameras in some squad cars. In addition, the camera can be used as a substitute for the human eye when it is not possible for humans to see or when their safety could be in jeopardy. For example, after the bombing of the World Trade Center in New York City, investigators directed a robotic probe equipped with sensing devices and a video camera to the depths of an unstable crater lying beneath the towers. The camera provided an assessment of the damage in a way unavailable to the human eye.

GLOBAL IMPACT

As a global component, the VCR is a technology that shrinks the size and differences of the world. For example, because the Space Shuttle Challenger disaster in 1986 was videotaped and the images transmitted to countries all over the world, people worldwide mourned the deaths of the crewmembers. Through video people can also learn more about the governments, citizens and cultures of countries other than their own. "Communication technology [contributes] to the 'portability' of culture. It is largely due

to this technology that knowledge, symbols, and rules developed within one subculture or culture are available to individuals who were not involved in their creation" (Hanson 1987: 120). Although, video can also impact societies through providing a means for narrow, stereotypical or inaccurate perceptions of a country and culture to be adopted. People from other cultures, for example, sometimes get their perceptions of America through the tapes of talk shows such as *The Jerry Springer Show*. Shows such as this are the only live images of the United States that are available to them.

The VCR has had a major impact on many cultures, especially those in which the mass media entertainment choices are limited.

> I view the VCR as a liberating technology that allows viewers a range of taste in media content never before possible in Turkey, as well as other Third World countries. When mass media delivered the entertainment or information, the content choice was made by the distributors. Viewer choice- of television programs and films at the cinema- consisted of watching what was offered or rejecting it. Often only one channel was available, as in Turkey, and only one neighborhood theater was accessible. The diffusion of the VCR has brought with it a wide range of content- both foreign and domestically produced (Levy 1989: 245).

Countries that do not have TV stations or that have very limited television choice are opened up to an entirely new world of entertainment through the VCR. As young film viewers, these citizens are awed by the "beautiful" movies and amazing technology of the VCR. In speaking with a few Ghanaian citizens I found them to be extremely impressed by movies such as *Conan the Barbarian*, starring Arnold Schwarzeneger in his early Hollywood career (a movie most Americans, with such a wide-range and long history of movies, do not find worthy of attention). The procurement of a VCR and movies such as

this opened these people up to a world of technological possibilities and entertainment they were never before able to imagine. In addition, the VCR as a household addition immediately altered leisure time activities as soon as it was introduced. Family and friends might now gather to watch television or movies and people now began to enjoy their favorite TV shows, not to be missed. Plus, videos affect these societies because they have a major economic impact on television program and film industries in every country they infiltrate.

CULTURAL LIBERATION

Countries in which information sources are controlled are further impacted by the introduction of the VCR into their societies because it can be a vehicle of liberation and open the door for change. The VCR is used for recording and viewing domestic and foreign films, but also for viewing politically forbidden information. Because VCR owners, not governments or broadcast networks, control the choice of content and the time of viewing, it is difficult to know or control what people see. Western economic, political, and social values can be transferred to these countries via the VCR. In the late 1980s, for example, Soviet authorities appeared to be concerned about video's potential to cause dissent. Western images could provide a detailed view of the west not shown through other media; the VCR opened the door to previously unavailable information. "The home video recorder, like other new communication technology and the information it delivers, provides additional evidence that authoritarian states ultimately fail to dominate the minds of their citizens through censorship" (Levy 1989: 268). The VCR can be a medium of sexual liberation, or abuse, depending on one's disposition. It is also a

political medium, nurturing and sustaining political opposition whose only previous means of communication was through print.

Video images have gained an important place within visual communication. "…Video technology has moved well beyond the function of artistic expression or exploration common to artists' video to encompass every discursive function of documentary media: recording, preserving, persuading, and analyzing events- public and private, local and global- at an astonishing rate" (Renov and Suderburg 1996: XV). Video-related technologies changed the way people work, spend leisure time and have had huge economic affects. The VCR has also contributed to providing people with a greater view and understanding of the world. It supports and reaffirms or, in some instances, can even provide a sense of reality. The nature of television alone has changed drastically from the live form of presentation to presentation of film, videotape, satellite distribution, and the addition of technologies such as the VCR, video game, and cable. "From the halls of Congress to the far reaches of outer space, video is indeed transforming our culture and our world" (Renov and Suderburg 1996: XIII). The video mode of visual presentation caused profound impacts on society that will continue into the future as the technology and its influences expand even further.

BIBLIOGRAPHY

Alvarado, Manuel, 1988, *Video World-Wide*, London: John Libbey.

Cohn, Marjorie and David Dow, 1998, *Cameras in the Courtroom*, North Carolina: McFarland & Company, Inc.

Hanson, Jarice, 1987, *Understanding Video*, Beverly Hills: Sage Publications.

Levy, Mark R., 1989, *The VCR Age*, London: Sage Publications.

Lyons, Nick, 1976, *The Sony Vision*, New York: Crown Publishers, Inc.

Noam, Eli M., 1985, *Video Media Competition*, New York: Columbia University Press.

Renov, Michael and Erika Suderburg, 1996, *Resolutions*, Minneapolis: University of Minnesota Press.

USPTO.GOV web-site.

Rogers, Everett M., 1988, *Communication Technology*, New York: The Free Press.