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**THE GAMES PEOPLE PLAY: A POLITICAL ECONOMIC
ANALYSIS OF VIDEO GAMES AND
THEIR PRODUCTION**

by

RANDALL JAMES NICHOLS

A DISSERTATION

**Presented to the School of Journalism
and Communication
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
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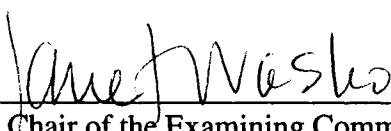


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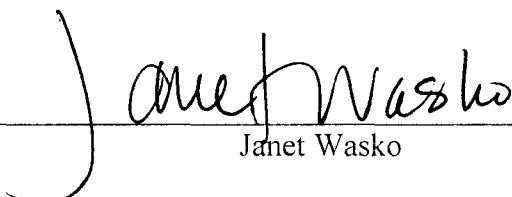


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The image shows a handwritten signature in black ink. The signature consists of the first name "Janet" and the last name "Wasko" written in a cursive, fluid style. Below the signature, the name "Janet Wasko" is printed in a smaller, more formal font.

In recent years, video games have become increasingly significant, but little attention has been given to the nature of their production. This study examines the video game industry and the relationship between labor and production in order to better understand the forces, or logics of production, which drive the creation of the video game commodity. It uses the framework of critical political economy in order to better understand the commodity nature of video games to better explain the benefits and the drawbacks of the rapid adoption of video games in society. In keeping with this, it situates video games as a form of communication, capable of conveying meaning and ideology. At the same time, it uses the video game industry as a gauge for understanding the development of information industries in order to determine whether the rhetoric surrounding these industries holds true in practice.

Particular focus has been given to the historical forces which formed the industry,

shaping it into something more than just a high-tech segment of the toy industry. Rather, this study shows that video games have long been seen as devices for communication and are currently one of the most dynamic forms of technology usable for communication. In addition, it examines current ties and new developments between the video game industry and other media industries in order to better demonstrate just how significant the reach of the video game commodity has become. Finally, attention is given to the industry's attempts to court a larger audience for its products. Through the combination of its growing audience base and its willingness to experiment with media convergence, the industry has earned legitimacy in a relatively short time.

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CHAPTER I

VIDEO GAMES AS A CULTURAL INDUSTRY

Video games have arrived.

In 2004, video games began to earn more than Hollywood's domestic box office. Moreover, a number of major media and communication companies began to use video games as vital parts of branding and advertising. Among the media franchises which have benefitted from video games are "Harry Potter", "Lord of the Rings", "James Bond", and the NFL (Bloom, 2001; Bloom & Graser, 2002). Even pop-star Britney Spears has a video game based around her pop-stardom. The industry, which has tried to follow the Hollywood film system throughout its history, has even created its own hall of fame and the "Walk of Game" in San Francisco (R. Harris, 2005).

Video games have become a part of political scandal, as when a Norwegian representative was caught playing games during a major policy debate (CNN, 2003). Special "serious" video games have been created for a number of political campaigns in the U.S., and the ability of video games to energize the youth vote has led a number of experts to predict they'll soon become a mainstay of most political campaigns (Foster, 2004b). Video games are being used as a part of medical treatment (Johnson, 2004). Video games have been the focus of debates about youth violence (AP, 2005c, 2005d;

"Computer Game Banned for Repetitive Violence," 2003; ESA, 2001). And industry studies show that video games are less and less toys for kids (ESA, 2002b, 2004, 2005a). Increasingly, they're facing the same questions of intellectual property ownership and piracy as the recorded music and film industries (Chazan, 2005; Veiga, 2004).

Moreover, the pedagogical value of video games has become so widely accepted that a school district in Michigan has begun to check out PlayStation 2's to students to help them take advantage of educational software (Laskowski, 2005). Even the U.S. military has shifted its long standing use of video games into overdrive. The U.S. Marine Corp begun to use video game first person shooter "Doom" to help teach its recruits tactics (McCune, 1998). And the U.S. Army has spent millions to develop and market its own video game to help teach potential recruits about Army life (Brickner, 2004; Wadhams, 2005). Most tellingly, an increasing number of universities around the world offer courses in video game studies and even programs in video game design (Barlett, 2005; Carlson, 2003a; Foster, 2004a).

Work in the video game industry has come to represent a major new hope for professional training in universities. Jobs in the industry have been described as, "some of the best jobs the American workplace has to offer" (Richtel, 2005b). And yet, increasing numbers of employees are leaving the industry or filing lawsuits citing unfair labor concerns (*EA: The Human Story*, 2004; *Followup to EA: The Human Story*, 2004). Understanding how the industry works becomes one of the paramount concerns for the field of video game studies, especially because of the increasing

attempts to offer professional education.

But there are other reasons an understanding of the industry is needed.

Understanding the forces which produce video games which are violent or have questionable portrayals may help provide solutions to those problems. And because the video game industry is seen as a desirable field to be employed in, an understanding of how different the video game industry is from other industries is needed.

The Field of Game Studies

The formal study of video games is just beginning. As journals such as *Game Studies* begin to emerge, so do fundamental concerns arise. Many of these concerns are not new. Educators and academics have recognized the potential value of games as teaching tools since the first game prototypes were developed in the 1960s. Similarly, concerns over potential negative effects from too much time with video games or from playing violent games has dogged the industry since at least the early 1980s.

More recently, video games have come under the lens of cultural and textual analysis, research which insists that video games can have legitimate artistic value because they can – though not always do – maintain complex narratives and design elements. More than simple entertainment, video games have become texts to be unpacked and analyzed.

The ability of video games to serve ideological roles has resulted in their reevaluation by policy makers. Governments around the world have begun to ask questions and seek solutions to the problems and potentials raised by video games.

Even seemingly unlikely institutions such as the U.S. Army has increasingly integrated video games into its recruiting efforts (AP, 2002). But beyond the ideological and pedagogical potential for video games, there are other concerns which, until recently, have received less attention. First, a number of European countries and American states are actively working to subsidize local video game production because the industry is seen as fast-growing, highly profitable, competitive industry. Second, questions dealing with software piracy and intellectual property are posing problems to the industry, but have received little attention.

Because of this, it is surprising that the production of video games - the understanding of how the industry is structured and why - has been a question left largely unaddressed. Since the concern of researchers, consumers, and policy makers is that video games have profound ideological implications, it is ironic that they have largely ignored questions of how and why the texts of concern are actually created. This lack of attention is, in some sense, due to the lack of respect given to the cultural commodity of video games and of the industry that produces them. Long considered a minor sector of other more important industries, it was not difficult to excuse video games as inconsequential toys for children.

Video games have become more than just a subset of the computer or toy industries. Video games are produced by an important industry, worthy of consideration on its own merits. The industry's level of concentration and its relations between labor and management should both be taken into account when thinking of an industry as more or less desirable.

This study examines the production of video games in order to better understand the industry and what Bernard Miege refers to as the “logics of production” (Miege, 1989). These logics include the rules of the distinct markets in which video games are made and sold, labor patterns, and methods of production, distribution, marketing and retail practices which bring video games to the point of consumption. Such logics suggest not only the ways in which a particular industry or institution works but also the reasons why it must work in these ways. The logics of the production of video game commodities in some way dictate the messages and ideologies conveyed. Key to any industrial logic is an understanding of the markets and consumers – in this case, audiences – which will consume a product. As this study shows, the markets and audiences for video games are more significant and varied though still very well defined than they are often given credit for.

Video games are cultural commodities – the products of a cultural industry organized through the capitalist exchange of goods. More so than many other commodities, video games have ideological influence. In part, the decisions about how video games produced and the forces they must respond to impacts the ideologies video games convey. In order to better understand these decisions, this study examines not only the industry as a whole but also the individuals and institutions which produce them. It places video games into a historical context and supplies a motivation for the particulars of production.

How video games are produced has helped place them as a major media industry in its own right. As with other media industries, the video game industry’s status owes

to its successful courting of a highly diverse group of consumers. But it also relies on a high degree of concentration, tight control over the industry's products and who can produce them, and on maintaining its control over content rather than on outside regulation. These factors have heavily impacted the relationship between labor and management within the industry as well as how video games are tied to other media. This has played out in two major areas: convergence of technology and the rise of advertising.

The Significance of the Video Game Industry

The development of video games as a distinct industry geared toward production of cultural commodities is only one reason why communication scholars should examine the industry more closely. A significant body of literature, discussed in depth in Chapter Two, already exists demonstrating the effects of video game messages on players, particularly children. While the specific messages of a video game are hard to pin down, it is clear that video games function as a form of mediated communication. Whatever the message, it is both constructed and contested. These characteristics alone place the study of video games firmly in the realm of communication scholars.

But there are a number of other significant reasons communication scholars should be concerned with video games. First, video games have become a highly profitable industry, linked with other communications industries. Video game industry profits already rival the film industry in reach and revenue. Moreover, video games have become a significant part of media synergy plans. Hollywood has already

recognized the ability of video games to not only dramatically increase the merchandising revenues of a media product but that also increase the recognition of a brand (Bloom & Graser, 2002). It is telling that leading video game software publisher Electronic Arts has recently announced plans to establish the first video game studio in Hollywood. The impact of these industry ties are two fold and a mixed blessing. It means video games represent a significant potential revenue stream. But it also means that video games are drawing audiences away from other media.

Second, the video game industry represents some of the most determined work towards convergence in any media industry. Because video games are relatively unhampered by the legal concerns of telecommunications and broadcasting industries, video game platforms already demonstrate significant aspects of convergence. Sony's PlayStation 2 console is capable not only of playing video games but also of playing CDs and DVDs and of accessing the Internet. Moves have also been made to allow the Nintendo GameBoy to play music as well as games, doubling as an MP3 player. Thus, while many media industries are still struggling to come to agreement on how best to proceed towards convergence, the relatively new video game industry is already defining it for consumers.

Third, the market for video games is more varied than it was even ten years ago. The market for video games has expanded from the adolescent male market to include significant numbers of female consumers as well as increasingly higher numbers of users over the age of 35. Industry forecasts indicate that video game penetration in the U.S. market may surpass the VCR by 2005. This suggests the messages and ideologies

must now be considered in relation to a much wider possible audience. The industry is also experiencing an impressive growth in sales world-wide, a fact which is not often reflected in video game research. The governments of both Great Britain and Australia are beginning to examine ways to foster the video game industry because of the rapid growth and profit potential.

Finally, video games represent an industry only now being recognized by the academy. In the last three years, at least two universities have launched programs that train game designers. Such programs are problematic because there has been little systematic examination of employment within these industries. Further, the production of heavily value added, information products like video games is in a precarious position. Such products have proven remarkable targets for piracy. Currently the controls on production and distribution both at industrial and governmental levels – commonly referred to as intellectual property – are being reconsidered. The impact of digitalization and of easy means of duplicating and distributing information products has rocked other industries, particularly the music industry. How the video game industry will deal with these problems is uncertain but needs to be considered. Many legal scholars and industry insiders believe software will be the next major battlefield for these issues.

Video Games as Commodities

The commercial video game industry has a more than 40 year history (Kent,

2001; LaPlante & Seidner, 1999). Prior to their emergence as part of a for-profit industry, video games were created and shared as free goods, created during the heyday of the U.S. government's Advanced Research Projects Agency and its extensive networks of researchers. But video games became more than idle entertainment, they became commodities.

With this shift to commodity, it seems surprising that the industry's institutions have received so little attention. The video game itself has a history which spans more than three decades. Moreover, the video game commodity has been consistently profitable for the better part of the last decade. In 2002, the video game industry earned more than \$10 billion in revenues, more than half from the sale of software and the remainder from the sale of hardware (NPD, 2003b).

A cursory study shows that industry sales in both software and hardware have been highly concentrated. In fact, in the hardware sector, which brought in \$3.8 billion in revenue in 2002, one company dominates sales – Sony ("Top Video Game Console Makers," 2001). It should be noted that there are a number of categories of hardware sold in this sector: consoles, such as the Sony Playstation or Microsoft XBOX; portable game systems, such as the Nintendo GameBoy; arcade games, such as the "PacMan" or "Pole Position" games common in the 1980s and early 1990s; personal computers, such as the Macintosh or Gateway brands; and a miscellaneous category that includes joysticks and memory cards.

The software sector follows a similar pattern to that of hardware. At present, the software sector mirrors the hardware sector, with production constraints originating

from the platform or platforms a video game is to be used on. However, it is common for one game to be re-engineered to work across a number of hardware platforms. Presently, five companies account for a substantial majority of software sales across platforms ("Top Video Game Companies, 2000," 2001). One company, Electronic Arts (EA), accounts for almost one-sixth of all video game software revenues or one tenth of the entire industry's combined revenues (EA, 2003). Electronic Arts owns a number of smaller video game production companies, including Maxis and EA Sports, and is responsible for a number of best selling games, including "The Sims" brand, the "Madden Football" brand, as well as a number of video game tie-ins with major films.

Even as profits within the industry have risen, its relations with other communications industries are notable. In the last two years, video games have become increasingly important in the business plans of a number of Hollywood films. The recorded music industry has also taken notice. In 2003, it released a song by a successful rap artist on a video game rather than on radio or a music video. The links between the video game industry and other communications industries only underscores the need to understand video games as a particular form of cultural artifact produced by the cultural industries. Like any subset of the cultural industries, the first imperative of production – whether video games or any other cultural artifact – is its profitability (E. Meehan, 1991). For this reason, this study begins by examining video games within the setting of industrial capitalism, by examining the institutions and the production processes that create video games as commodities. Only then can broader questions of social impact – instances of hegemony and resistance, clashes of

ideology, and cultural significance – be truly understood.

Basic Framework and Research Questions

An examination of the video game industry as a part of the cultural industries must take into account the ideological function of video games. Thus, a purely economic examination does not go far enough. As a discipline, economics has attempted to avoid questions of ideology and cultural meaning (Dowd, 2000). Economics is neither able to consider the industry in a historical context nor does it allow for any critical assessment of the industry, its products, or its processes.

In contrast, a political economic study allows not only for an economic examination of such an industry, but also insists on illuminating its relations to a larger historical context, the society in which it is grounded, and to the potential ideologies suggested (Mosco, 1996). In its earliest form, political economy can be thought of as the study of “wealth and the allocation of resources” (A. Smith, 1993). Mosco, however, suggests that we think of it in even broader terms: “the study of power relations in a society”(Mosco, 1996). Moreover, political economy must be thought of as a holistic and historical stance, concerned with gaining an understanding of the relationship between capitalism and social good (Golding & Murdock, 1991). As a discipline, political economy is inherently and explicitly concerned with the way in which power is distributed and exercised in society. The shift from the study of wealth to the study of power has served to broaden political economy – and in particular, the political economy of communications – allowing it to step away from concerns of

economic determinism and to allow for the possibility of resistance (Gandy Jr., 1992; Garnham, 1990; E. R. Meehan, Mosco, & Wasko, 1994). Such a possibility answers criticisms often aimed at the political economy of communications from cultural studies.

Taking these definitions and applying them to the realm of communication, a political economic examination begins with the acknowledgment that the communication industries – the industries Nicholas Garnham indicates are concerned with “modes of cultural production” – exist within a capitalist framework (Garnham, 1983). The commodities produced by these cultural industries are, in one sense, informational commodities intended to reproduce the ideology of those in control of the means of production. Among the industries of concern are those directly concerned with information content – such as newspapers and televised news – but also of equal importance, those industries concerned ostensibly with the production of entertainment – including film, televised entertainment, recorded music, and video games. To exist within this framework in the institutions involved must all be fundamentally concerned first and foremost with profit in their production of commodities (Murdock & Golding, 1974). In this way, a political economic examination of communications must be thought of as concerned with the relationship between the industries, products, and processes involved to a broader social totality (Mosco, 1996).

It should be noted that much of the work concerned with the political economy of communications (PE/C) has worked to expressly address the need for critical assessment of the means of cultural production (Wasko, 2004). PE/C, then, is able to

address many of the assumptions and weaknesses found in positivist work. As such, it has worked to broaden conceived notions of how audiences interact with commodities by insisting that even the most seemingly innocuous communication commodity can be both entertaining and ideological. It is this ability of communication commodities that makes their understanding so vital.

Beyond these prescriptive concerns, PE/C is also concerned with several particular areas of research interest. Among these are the commodification and commercialization of media, media diversification, forms of media integration (horizontal and vertical), synergy, concentration of ownership and power, and media/state relations (Wasko, 2004). While these areas can be examined at a variety of levels – industrial, international, even the micro-economic level of the individual – this study focuses on the industrial level, with examinations of particular institutions and markets in the video game industry.

Just as PE/C has resisted criticisms of economic determinism, it has worked to dismiss notions of technologic determinism as well. The role of technology in the economy has been widely debated. This study relies on a view which allows technology the capability of benefitting society and its economy or of damaging it. This view posits that technology is best viewed as a means of “opening up social potentialities” (Mosco, 1996). Technology, then, can make change possible or ideologies more pervasive, but it must not be assumed to ensure either case. Such an understanding is vital in the realm of video games, which too often have been dealt with as monolithic technologies forcing children to violence.

As has been noted, the video game industry did not emerge in a vacuum. The video game industry functions, first, as a part of the computer industry but also similar to industries dealing with entertainment. In many ways it is a technological extension of other cultural industries. For this reason, this study draws on existing frameworks to help understand how the video game industry functions. Among these industries are the film and recorded music industries.

In her book *How Hollywood Works*, Wasko describes the film industry as one which centers around production, distribution, and retail. In addition, however, the film industry requires extensive marketing and retailing arrangement (Wasko, 1982, 1984, 2003). The video game industry seems likely to rely on similar functions. It has adopted a similar system of small producers who rely on giant transnational distributors for a wide variety of functions. Indeed, many of the distributors used by the video game industry are also involved, via their parent corporations, in film distribution.

Studies of the recorded music industry also offer useful suggestions for understanding the industrial structures of the video game industry. Both industries have experimented with a variety of distribution avenues for their products. One such avenue is that of cable television. In recent years, both Sony and Nintendo have started explorations of television channels as a means of both distribution and promotion. In the recorded music industry, such an exploration led to the successful creation of M-TV (J. Banks, 1996; J. E. Banks, 1991). For this reason, an examination both of the music industry's structures and practices serves as the primary focus of this study.

Finally, the video game industry relies on many of the same controls as the

general computing industry. Among these are what Frith terms problems of “storage,” “retrieval,” and “occasion.” Video games rely on very specific forms of licensing, methods of controlling piracy, and concerns over availability and pricing. With this in mind, this study incorporates Frith’s model with studies of the computer industry to help explain similar controls in the video game industry.

It can be seen, then, that a political economic approach to video games allows research to avoid many of the pitfalls hampering earlier research. By shifting the focus away from a monolithic technology or ideology to the industry that chooses to produce the technology and the messages carried by it, it becomes apparent that different processes are at work. It becomes possible to consider proactive solutions to questions of violent content, dangerous effects or questionable use of stereotypes. Under this framework, video games are commodities produced by distinct institutions. And under this framework, it is possible to ask who decides what content goes into a video game and what compels them to make those decisions. It is hoped that in this way, some meaningful suggestions might be offered in answer to the concerns levied against video games and the industry that produces them. Drawing on the existing literature and on the theoretical framework of a political economy of communications, this study examines the current state of the video game industry.

Research Questions

Based on the theoretical framework – particularly the concerns raised by a political economic approach to video games – this study examines the following

research questions:

R1) What is the structure of the video game industry?

R2) What is the relationship between the video game industry and other communications industries?

R3) What are the commodities produced by the video game industry?

R4) What markets are involved in the video game industry?

R5) What is the production, distribution, and promotion process involved in the commercial video game industry?

R6) What is the role of labor in the production of video games?

These questions address the fundamental economic nature of video games as part of the cultural industries. Just as the theoretical framework suggested particular questions, these questions, in turn, suggest particular methodologies best suited to answering them

Scope of the Study and Chapter Breakdown

Because a systematic understanding of the video game industry is needed, this study is first a descriptive examination of how video games are produced. It examines how the various video game commodities are produced, marketed, and distributed, who participates in these decisions, and what the markets are for these commodities. It also examines what the ties are between the video game industries and other communications industries. Based on the research questions, the study is organized into the following sections.

Chapter 1: This section consists of the overall goals and description of the study, including the significance of the research, as well as how the manuscript is organized.

Chapter 2: This section details the theoretical framework, including a review of literature, methodology and research questions for the study.

Chapter 3: This section reclaims the history of the video game industry, by showing how the industry emerged in terms of ties to other media industries and in its views of the audience. It provides an explanation of the origins of the industry, the evolution of its economic structure, and its relationship to other social institutions and industries. In keeping with the contextual focus of this section, relevant court cases, legislation, and labor disputes is discussed here.

Chapter 4: This section describes the current economic structure of the industry, including the key markets, and the primary players in each market. This chapter also details how the industry deals with distribution and promotion of its products. Attention has been given to describing the industry's attempts at technological convergence and to describing the current audience for video games.

Chapter 5: This chapter focuses on placing the video game industry into the larger media/communication context. It examines ties via licensing and ownership between video games and film, recorded music, and advertising.

Chapter 6: This chapter applies the framework of information labor to workers in the video game industry. Focus is given to recent lawsuits involving EA and Sony as well as to studies by the industry examining employee satisfaction in order to examine obs in an information industry.

Chapter 7: This chapter presents conclusions of the study, including an overview of the state of the industry and the state of labor. Future directions for research and for

the industry and labor are suggested here, while limitations of the study are also discussed.

Limitations

Some discussion of the limitations of this study have already been given. The chief difficulty faced is that of bias by the sources involved. However, this has been addressed by incorporating a variety of methods in order to better examine the structures in question. By building in overlap in how the industry is examined, it is hoped that this difficulty is minimized.

Owing to the state of the industry and its power relations, interviews with labor were difficult to obtain. Moreover, because much of the study focused on labor and production, more attention into the role of management is needed. To help with both concerns, document analysis provided other examples of the views from labor and management.

Because it is impossible to study all companies and laborers within the industry, choices have been made about which institutions will provide the most and best information. Typically, larger, successful companies have been selected for a number of reasons. First, they have existed longer as institutions. Second, they are better prepared to survive future downturns in the industry. Third, because of their size, they are more likely to exhibit control in the various markets being studied. Thus, while the industry is described and the power relations within it become apparent, there is still room for disagreement.

In addition, the model for the labor process that this study begins with is drawn from other examples in the cultural industries, particularly film and recorded music. However, these models are not likely to match exactly. Because of this, it is conceivable that by basing labor on these models, some information may be missed.

This study examines the institutions and processes of production and distribution. As such, it says very little directly about video game content beyond how and why decisions might be made by the producers. Similarly, while the study can discuss how the industry views audiences and does discuss the demographics of video game users, it is not audience research. This study, then, does not offer reasons for video game use, for audience satisfaction or distress. Finally, this study says nothing about the possible nature and extent of video game effects.

What is provided by this study is a model of how video games are created as commodities. Institutional constraints that affect other areas of concern – effects, audiences, and content – can only be understood by taking the factors of production into consideration. In addition, a model of the industry and its markets, of how it produces, distributes, and promotes its commodities is gained. Such a model can only illuminate questions in these other areas. Finally, this study provides a context for the video game industry's ties to other cultural industries, to those industries and institutions not involved in cultural production, and to the overall culture. Because of the pervasiveness of video games in society, this study offers a useful context for a variety of fields of inquiry.

Chapter Summary

This chapter has demonstrated the significance of video games as a field of study and has provided the initial justification for undertaking a critical political economic examination of the video game industry. The research questions which have guided the study and provided the basic organization of the study.

Chapter Two examines the current state of video game studies by reviewing the relevant literature. It then lays out the theoretical framework used for the study, which adopts a critical political-economic view of the video games industry as a part of the cultural industries. It also provides a critique of video game studies and discusses theory and methods of this study as a means of addressing an important gap in the field's understanding.

CHAPTER II

FRAMEWORK FOR STUDYING THE VIDEO GAME INDUSTRY

Chapter One situated the video game industry as a cultural industry producing cultural commodities. This chapter examines the context of video game studies, including a review of the literature and most common ways of studying video games. It then lays out an alternative framework for the study of the industry which draws on critical political economy. It places the video game industry solidly within the realm of the cultural industries and defines the key theoretical terms and considerations which guide the remainder of this study. Finally, it concludes with a discussion of the methodologies used for this study.

One of the most enduring ways of conceptualizing study in the field of communications can be stated simply: “who says what in which channel to whom with what effect?” (Lasswell, 1948). This study is concerned chiefly with the “Who” of that question. As is discussed later under the review of the existing literature of video game studies, who produces video games (and how and why they are produced) is a question which has been ignored. This study begins with the view of video games as a product produced by what has been termed a “cultural industry”. It is not concerned with the meaning of video games or their effects, though those these issues cannot be

entirely avoided. Indeed, this study serves as a critique and a suggested starting point for these other areas. By examining the rules, processes, individuals and institutions – in other words, what Miege terms “the logics” of production – involved in the production of the video game commodity, a path to meaningful solution to the concerns raised by effects researchers and by cultural critics can be seen (Miege, 1987). In seeking an institutional understanding of video games, this study has adopted the framework of critical political economy. A more in-depth discussion of critical political economy can be found in the theoretical framework.

Because an institutional understanding of video games has not been undertaken in any systematic manner, the review of the literature serves not only to provide a map of the field of inquiry but of weaknesses within the area of video game studies which a political economic examination can address. Once these concerns are raised, a framework capable of addressing them and a discussion of the best methodologies to address them can be addressed.

The Current State of Video Game Studies

As noted, there has been little systematic research of the video game industry, but that is not to say that video games have escaped the notice of researchers. Currently, video game research can be placed into four categories: technological histories of video games, effects, video games as educational tools, and the cultural study. It is worth noting that most feminist work on video games falls into the fourth

category. Once these areas have been covered, it is then possible to examine the foundational economic work in the area of video game studies.

The History of Video Games

As the theoretical framework shows, a critical political economic analysis requires an understanding of historical context. To begin a study of the existing work on video games then, the histories relevant to video games must be considered. There are two broad areas of historical inquiry that shed light on the history of video games: the history of science and technology and the history of the commodification of culture.

Because video games are not a new phenomenon, it is not surprising that there has been considerable effort to catalogue them and provide a sort of genealogy of their existence. However, while there are certainly many works that have focused on the evolution of games, they have offered little in the way of analysis about the processes and interrelations that have shaped the video game commodity's development.

The reasons for this difficulty are two-fold. The first centers around the question of who gets to tell the history. As John Staudenmaier points out in his analysis of the history of technology as a whole, most technologies have had to deal with competing versions of history. Researchers, media professionals, government officials, and industry insiders among others each have their version of the history of a particular technology (Staudenmaier, 1990). Second, and more significant, histories of technology are often written without links to external context. In other words, histories of technology tend to focus only on the moments when a technology changes rather

than on the events that prompt these moments.

It is also worth noting that academic historians in the United States have tended to focus on technologies which are more established and which, according to Staudenmaier, are viewed as more popular. Thus, electricity is given considerable examination while more recent technologies have been much less examined. This has left the history of emerging technologies to be told by the industries which create it and, to a lesser extent, by the media (Staudenmaier, 1985). In contrast, historians outside the United States have gravitated towards technological histories of still older periods, such as the Enlightenment (Hindle, 1984). This has resulted in many new technologies being told in an uncritical, decontextualized method.

Another difficulty faced by the historians of technology has been the tendency to polarize how technology is portrayed. On one side, technology is viewed as an artifact which obeys rational economic laws. In contrast, the other side portrays technology as entirely contingent, though on what it cannot be agreed. What the history of technology lacks is a middle ground that is able to interweave the economic impetus and impacts of technology with the uncertainty of how it will be received (Staudenmaier, 2002). Sibley expresses this differently, contending that the history of technology has almost inevitably been tied to utopian goals (Sibley, 1973). In other words, the history of technology tends to be told in relation to whether it brings society closer to or farther from a utopian ideal rather than in relation to less extreme social conditions.

Examining video games from the space of media history results in many of the

same difficulties. Michael Schudson has argued that media history tends towards a variety of determinism as well. While much of his discussion is geared towards journalism historians, there are two assumptions of interest for communications researchers. The first is that media (used here in a broader sense than he discusses it) is central to historical processes and events. Second is the view that the history of media and communications is all too often reduced to basic technologic or economic determinism (Schudson, 1997).

The history of video games has fallen prey to almost every one of these concerns. As discussed in Chapter One, video games are only now becoming an area of concern for communication scholars. This ambivalence has extended to historians as well. This has meant that those histories which have been offered are drawn primarily from the views of the industry and institutions which were involved. Moreover, many of the existing histories have drawn heavily on the utopian dichotomy discussed by Sibley. Many histories focused on the presumed effects of video games on children. While video games have been a perennial hot topic of debate for media and government alike, the concern over the effects on children has resulted in a willful ignorance about other social impacts. For this reason, the existing histories may best be described as technological histories. Because they provide little more than a record of names and dates without any attempt to interpret or suggest any context, this type of research is inherently limited.

Perhaps the best example is Steven Kent's *The Ultimate History of Video Games*. While Kent's work is exhaustive, detailing the rise of video games from the

days of arcades to present day consoles, it does little to connect video games to any industrial or historical forces. Because of this, video games become cultural artifacts that seem to exist solely on their own merits, free of criticisms, processes, or impact.

Kent's work is not the only history of video games. Other examinations offer similar histories and represent similar problems. Berger's (2002) *Video Games: A Popular Culture Phenomenon* does little more than suggest that video games have had an effect without suggesting what that effect is. Berger's work signals researchers that something is, in fact, happening and should be noticed and studied. Other histories with similar intent include Herz's (1997) *Joystick Nation* and the edited collection *Game On: the History and Culture of Video Games* (2002), both of which discuss video games as an important phenomenon with a strong but unknown hold on today's youth.

Among the popular histories, there are also a few examples of studies that provide a cautionary tale to unwary businessmen. Because the video game industry underwent a protracted slump during the mid-1980s, these books serve to illustrate the hubris and poor business practices of some of the fledgling companies in the industry. While these presage the intent of this study – an economic examination of the video game industry – they suffer from a sort of historic myopia, which allowed them to largely dismiss the industry's importance and longevity based on the failings of particular companies. The two best examples are Cohen's (1984) *Zap! The Rise and Fall of Atari* and Provenzo's (1991) *Video Kids: Making Sense of Nintendo*.

There is a second area of history which is useful to consider here. Because this study begins with a view of video games as actively produced cultural products, the

history of the commodification of culture is also of concern. Here video games must be considered as works of authorship (though not, in most cases, by one individual). There is an extensive history of this commodification and the controls by industry and the State on such works.

Thematically, the two areas are linked through discussions of information. Perhaps most crucially, it has been demonstrated that while computer hardware (and this includes video game hardware) has followed a relatively direct trajectory in line with the development of other communications infrastructures, software has not (Chandler Jr. & Cortada, 2000). The shift in discussion is important because it recognizes the importance of the creative process in contrast which results in technology instead of the effects of technology's manifestation. Software itself is seen as the next major battleground for intellectual property and has begun to attract attention from scholars in a variety of disciplines including communications and law (Boyle, 1996; Lessig, 2001; Litman, 2001).

One pitfall of this area has been the concern with "creative autonomy" as requisite for a cultural commodity to be considered worthy of protection (Woodmansee, 1994). Objects worthy of consideration, it suggests, must be the work of "genius individuals" working in an environment free of any imposition, industrial or otherwise. Woodmansee cautions that such a view prevents many interesting moments of cultural critique but also serves to naturalize commodification for those products deemed unworthy of protection.

A second excellent history in this area examines the creation of copyright as a

means of ensuring protection of the author (Rose, 1993). While Rose's examination focuses only on copyright in relation to 18th century written work, it offers several salient points. Prior to copyright's establishment, virtually all profit from a work went to the publisher rather than the author. Copyright facilitated the creation of an area of work previously only possible for those with wealth or connections to it.

Rose's examination has been furthered by the work of Ron Bettig. Bettig's work demonstrates how radically the policies of intellectual property protection have shifted since their inception. Copyright and other controls have evolved even from their limited forms of protection for authors into a system of control which allows corporations to consolidate cultural capital (Bettig, 1996). Copyright, once thought of as a means of protecting creators while encouraging more creation, can now be seen as a system of rules in which cultural production occurs primarily through the actions of the institutions which have accumulated the most cultural commodities.

Finally, there have been recent attempts to marry the various strands of historical research. These studies tend to work towards two ends. First, the attempt to address current conceptions of video games in the popular consciousness, and, second, they attempt to bridge theoretical chasms in hopes of making a unified field of video game studies.

McCallister (2005) makes the strongest case for a unified version of study. Owing to work in production as well as to critical theory, his work acknowledges not only the ideological aspects of games, but also the institutional practices and rhetoric which have shaped so much of what the industry and its products have become to

researchers (McCallister, 2005).

Williams offers a more limited view, examining how perception of the industry has moved from vilification to redemption, in large part due to changes in video game audiences (Williams, 2003). However, as discussed later in Chapter Three, the industry and its audience have actually been much more consistent than research and media portrayals tend to suggest.

Yates and Littleton, in contrast, offer an approach which focuses on the audiences, attempting to marry psychological views of uses and gratifications with the critical underpinnings of cultural studies. While the article raises some good questions, the areas it neglects are considerable. Most striking is their focus on the audience that does not place the audiences as consumers (S. Yates & Littleton, 1999)

In contrast to these views, Chapter Three offers a history of video games focused on production and consumption, on the industry and the audience. It suggests that the industry has not only recognized itself as both commodity and ideology, but which has also recognized that its best audience was made up of something more than adolescent boys.

Video Games and Effects Research

Perhaps the largest body of literature with the longest history is concerned with video games and violence. This body of research has some similarity to literature on “video games and ideology,” but differs slightly. A majority of the work on video games and violence has come from Psychology and Education, but there has been

increasing interest seen from Sociology and Communications in recent years. Not surprisingly, research into the relationship between video games and violence tends to reflect both the biases and the weaknesses of effects research.

The major body of work in this area, which is quite extensive, has focused on whether video games – like virtually all media forms before them – result in violent behavior in children. A number of meta-analyses of the literature and results exist, reflecting the shifting nature of this area of research. As Anderson and Bushman (2001) indicate, early research tended to show a higher tendency of violent effects produced by video games. More recently, however, a more limited system of effects has been demonstrated. An excellent example of this can be seen in the work of Sherry (2001). Sherry's study, a meta-analysis of existing studies, suggests a correlation between aggressive behavior and video game use. In contrast, Bensley and van Eemyk (2001) paint a much more reassuring picture, though still cautioning that it is only in some cases that any effect can be seen from the use of violent video games.

Smith, Lachlan, and Tamborini (2003) examined 60 of the most popular video games for the year, played them for 10 minutes, and then analyzed the content of those ten minutes to determine the level of violence. Their study focuses on console games, ignoring the huge popularity of PC and handheld games. Moreover, it modeled its analysis on a TV ratings system, ignoring the rating system in place for video games, and concluded that games targeted at mature audiences were more likely to have mature themes and violence in them (S. L. Smith, Lachlan, & Tamborini, 2001).

A second area of effects research has risen to prominence, focusing on what is

termed “telepresence” in violent video games. In this literature, telepresence is viewed as a sort of over-identification with the characters in video games. In effect, a video game player – still almost always presumed to be a child or an adolescent – becomes so identified with the video game that they are actually in a video game environment. Taken to its ultimate extent, such a shift would result in video game players acting out video game behaviors – particularly violent behaviors – in real world situations. A number of examples of this type of research can be found in the work of Ron Tamborini (2000, 2001). As in the research concerned with violent effects, research into telepresence has focused on children and adolescents. Likewise, telepresence can only be said to be a limited effect.

It is worth noting that at least two valuable shifts have occurred in research on violence in video games. First, researchers have become increasingly interested in ways of assessing the actual amount of violence in a video game, e.g. Lachlan, Smith, and Tamborini’s (2000) “Popular Video Games: Assessing the Amount and Context of Video Games.” This shift is notable because it not only offers a more detailed system of understanding video game violence by asking what is considered violence, but also because it begins to acknowledge the potential for a positive effects.

There is one other noteworthy shift in effects research. This shift concerns itself with entertainment and pleasure derived from video games. This move towards uses and gratifications models has been valuable, if only because it has moved research to consider a broader range of reasons why individuals might play games. As Sherry, Lucas, et al (2001) shows, not only is the predominant reason for using video games a

desire for entertainment, but seeking a means of escaping the non-virtual world might be positive. Finally, studies of the uses and gratifications of video games forces the acknowledgment of video game players who are not children or adolescents.

The final type of effects research has often been done outside of the academy. Both government studies and privately funded research have been conducted, focusing on video game rating systems. The video game industry, like the film and recorded music industries, has received pressure from consumer groups and governmental organizations to better control the types of content available to young consumers (CNN, 2001). Like the film and recorded music industries, the video game industry has opted for voluntary regulation via a system of game ratings. Both consumer groups and a few members of the academy have attempted to gauge existing ratings and, in some cases, to provide their own (D. Walsh, 2001; D. A. Walsh & Gentle, 2001).

Video Games and Education

As just discussed, recent trends in effects research have begun to consider the positive possibilities of video game use. This has led a number of researchers to begin to examine the potential offered by video games as educational tools. Research in this area differs from cultural analysis in its view that technology is neutral and unvalued. Here, video games are merely tools, and no concern is given to the imposition of meanings. Again, however, the vast majority of work in this area has focused on the use of video games in the education of children.

The first examinations in this area attempted to determine whether video games

affected academic performance at all. Some correlation between game playing and poor academic performance has been found, it is unclear whether this is due to decreased time studying or other mitigating factors (M. B. Harris & Williams, 1985). It is interesting to note that while early research on video games and education took an unabashedly negative view, recent work has become much more positive.

An excellent example of this can be seen in the work of futurist public intellectuals. Among these are Nicholas Negroponte and Donald Tapscott, both of whom have extolled the virtues of technology for society and youth. In their view, technology is again a neutral force, but a deterministic one which opens up endless vistas of possibility (Negroponte, 1995; Tapscott, 1997). Both authors have been heavily criticized for their overly optimistic view of technology but have enjoyed a fair amount of celebrity in spite of it.

More critical examinations of video games and technology with children have been undertaken. Concerns over whether we've let a sort of technophilia come to dictate educational policies have been raised (Facer, Sutherland, Furlong, & Furlong, 2001). Typically these examinations have come from outside the United States, but their influence is beginning to be seen in U.S. educational policy and scholarly research.

It is in these discussions of technology as educational tool that the first true criticisms can be seen. Analyses of software design has raised concern over what ways of thinking are being ignored (Friedman, 1993; Morris, 2002; Selfe & Selfe Jr., 1994). A similar, but less focused examination can be in the work of C.A. Bowers' *Let Them*

Eat Data. Offered as a polemic on the dangers of technology to everything from education to environmental sustainability, the questions asked cannot be answered because of how much ground needs to be covered (Bowers, 200).

Feminist critiques of technology also exist, primarily dismantling an almost mythological view of how technology can be used to help disadvantaged individuals and countries (Kramarae, 1998). Though focused on Internet and networking technologies, Kramarae's work suggests limits on the educational uses of any technology being considered, whether for individuals or for community and global development.

In the video game arena, this plays out in two ways. The first focuses concerns over how video games educate us to treat people, based on sex and gender. In contrast, the second attempts to deal directly with portrayals. Scharrer (2004) notes that there is a consistency in violent portrayals in both video games and in their advertisements. Her study, a content analysis of more than 1,000 advertisements found that while violence was often a theme of ads, with high numbers of weapons shown, that violence itself was not as closely tied to gender as may have been expected (Scharrer, 2004). Unfortunately, this study neglects context for the number of violent game sin the market or for other forms of content.

The second major strand of research has come to focus on similar questions – the hyper-feminiization or masculinization of video game characters. Almost without fail, one character recurs over and over again in this body of research: Lara Croft, the heroine of the “Tomb Raider” game franchise. Croft, more Madonna than the singer

these days, has become the preferred site for feminist debate in video games. In the more interesting of these studies, Croft is recognized as a virtual stand-in for all identity – she is what we make of her {Mikula, 2003 #1194). In other cases, the character becomes a cipher for one side or the other, a political tool used to continually appropriate then reappropriate what it may mean to be feminine (Rehak, 2003).

Such discussions have led inevitably to questions about the usefulness of computers in school (Neill, 1995). Such critiques have suggested that the educational values of computers and technology must be carefully considered. In addition, they've provided a groundwork for the consideration of the values encoded in technologies.

Video Games as Cultural Texts

The last major area of research has focused on the ideological impact of video games on players and society. Drawing heavily on cultural studies, this type of research has concerned itself with negative stereotypes – that frequently have been related to concerns over violence in video games – as well as portrayals of race and gender. In these studies, video games are cultural texts to be broken down into signs and signifiers, as well as sites of hegemony and resistance.

The earliest cultural examination of video games dealt with the role of the Military-Industrial-Entertainment Complex in the emergence of video games. Toles (1985) points to the development of video games and their use by the U.S. military as one major source of ideological input. While further research examining the modern industry in light of Toles' work has not been done, it seems warranted – particularly in

light of the U.S. Army's recent launch of its own publicly available video games.

More commonly, however, textual analysis has concerned itself with the representation of characters in video games. Perhaps the most examined character in recent years has been Lara Croft from the "Tomb Raider" video games (Carr, 2002; Grieb, 2002; Schleiner, 2001). These analyses have focused on the nature of gender roles in video games and questioned not only portrayals but subversions of typical gender roles. Lara Croft, in these examples, is viewed as a problematic set of signifiers who, on one level relies on the view of "woman as sex object," while simultaneously existing outside the category of womanhood because of her reliance on characteristics viewed as male. Concerns over the industry's use of gender and racial signifiers have been especially prominent of late. Games such as "Grand Theft Auto: Vice City," one of the best selling and most controversial video games of recent years, has been heavily criticized for its use of violence against women and of damaging racial stereotypes.

Another major area of games research drawing on cultural and ideological understanding focuses on understanding the semiotics of video games (Poole, 2000). Such studies seek to understand the limits on game design historically and the ways in which these elements have been advanced. By allowing video games a distinct system of semiotics, the study of games has progressed, allowing video games to be seen as unique artifacts just as worthy of study as literature and film. Not surprisingly, similar methods to those found in Literature and Film Studies are brought to bear on video games. It has been suggested that such studies have been instrumental in allowing game studies to develop as its own field of inquiry (Kinder, 1991). It is also worth

noting that this shift in how games are viewed has also spawned a field of professional study that seeks to understand the nature of video game design in order to better train students as well as those already employed by the industry (Shafer, 2001).

Finally, cultural research on video games has also been useful in expanding the understanding of players themselves. Too often left out of the popular histories while given only minimal voice in effects research, cultural research has provided a space for players to be more than the passive dupes of violence studies (Southern, 2001). Even though the focus is still primarily on the youth market, the advances provided by this type of research have been important for the study of games.

It is clear that the majority of video game studies has focused on games as cultural texts. Recent works in the area of game studies have focused almost exclusively on games as texts and on the mechanics and semiotics of game design (King & Krzywinska, 2002; Wolf, 2001). What is consistently left out of these analysis is an examination of the economic base which makes these texts possible.

Video Game Economics

Although limited, there has been some examination of the economics of video games. One of the earliest economic examinations of video games provided an excellent linkage between their production and the Western military-industrial-communication complex (Toles, 1985). Little attention has been given to these ties following Toles' work, but in his work the foundation for a critical understanding of the video game industry.

. More recently, economic examinations of video games have focused on the portrayals of economic systems within video games. A number of video games, in particular online games such as “Ultimate Online” and “Everquest”, have developed peculiar “virtual economies” which have begun to spill over into the real world (Castranova, 2001, 2002). Typically this has occurred as a result of the accumulation of virtual property which is then sold to other players in the real world.

Others have moved beyond this to suggest that the study of video games needs to use a more accurate portrayal of the audiences being targeted (J. Newman, 2002). This call is one which is be discussed in more detail in Chapter Four as part of the analysis of the current industry structure. The audience commodity is crucial to the video game industry and has fallen, as have most areas of technology, into gendered categorizations (E. R. Meehan, 2002). This is a dangerous precedent and must be avoided because, as is discussed in Chapter Four, the audience for video games has had to shift in response to evolving logics of consumption.

One move to understand video games as an economic force emerges from the industry and related sectors. These studies recognize video games as entertainment but also as marketing and policy forces that can be understood, controlled, and/or exploited. On one hand, these studies seek to deal with the implied danger of marketing violent content to children as in Anders 1999 study. Ultimately, her examination suggests that the industry has to tow a delicate line on the issue of violence, though she does not address the overemphasis of violence in video games in media and research (Anders, 1999).

Thomas Hemphill attempts to address the problem of violence in entertainment industries, including video games, by suggesting better issue management techniques and ways entertainment media can take better advantage of political views within the United States. While his work does not focus explicitly on video games, his suggestion and concerns are mirrored through the literature – particularly in the news media (Hemphill, 2002)

More recently, however, researchers have begun to acknowledge the similarities and differences between the video game industry and other media forms. Dmitri Williams lays out an initial structure to the industry, consisting of publishers, developers, and hardware manufacturers. He also acknowledges the role of retail and advertising in the economics of the industry. Williams' work, however, exhibits little concern with the level of concentration in the industry. Moreover, he does not address the problematic labor situation or any of the trickier matters of property control within the industry (Williams, 2002).

In contrast, Nick Dyer-Wetherford offers a critical view of the industry's labor practices, noting that the industry is increasingly taking advantage of transnational labor. He also points out that the labor in the industry is highly gendered (N. Dyer-Wetherford, 1999b). His later work begins to suggest a class structure within the industry which tends to fall along income and educational lines in addition to gender and nationality (Dyer-Wetherford, 2002). His work, however, focuses on the console part of the industry, ignoring, in particular, the impact of handheld games on the industry.

The industry also exhibits a particular set of labor practices which rely on the work of consumers. Most notable of these is the concept of “modding” or the creation of game expansions by fans, which tends to occur particularly in the action and RPG game areas. Initial studies of this suggest the way in which fandom takes on the peculiar function of labor in the industry (Postigo, 2003).

Along similar lines, Klang examines the struggles of ownership between fans and the industry. Drawing on ideas raised by Castranova, Klang examines the ways in which “avatars” – or the representations of players in games, particularly RPG and MMORPG areas, become contested zones of intellectual property (Klang, 2004). Raising more questions than it answers, Klang’s study suggests a number of interesting directions video games may force the ongoing intellectual property debates plaguing communication industries.

Perhaps the most in-depth examination of the industry focuses on the battle in the European market between 16-bit consoles in the mid-1990s (Hayes, Dinsey, & Parker, 1995). While primarily a historical study, a number of illuminating features of the industry are first discussed here in the economic literature. As is discussed in Chapter Three, Europe has historically been treated as a secondary market for video games, with hardware lagging roughly a generation behind. It’s in the period examined by Hayes, Dinsey, and Parker that Europe begins to emerge as a primary market with its own systems of production and distribution. But the authors also discuss the use of planned obsolescence as a marketing tool, something acknowledged in earlier (primarily industry) literature, but not examined.

The recent book Digital Play examines similar issues, drawing on political economic concerns as a means of discussing the marketing of video games as a cultural force for audiences to respond to (Kline, Dyer-Witherford, & De Peuter, 2003). While providing some excellent frameworks for understanding the overall layout of the industry, little attention is given here to the system of production itself. Rather, video games are treated as cultural texts which must be understood in terms of their messages and marketing as a system for audience response and understanding.

Finally, the nature of competition internationally within the industry has raised the question of territorial lockouts. Territorial lockouts occur when the industry creates products which only work in particular geographic markets – for example, DVDs which will play on machines made in America but not in Europe or Japan. The video game industry also creates products with these lockouts in mind. Ip and Jacobs attempt to examine reasons for such a practice within the industry, concluding that the video game industry seems unsure of the practice, but has tended to follow it for almost traditional reasons: to protect from piracy and to spur creativity (Ip & Jacobs, 2004). However, their study suggests that both consumers and producers are increasingly skeptical of the practice. Such a practice also raises important concerns in regards to cultural imperialism that go unaddressed within the study and the industry.

One contribution many of these studies offer is that it is important to think of the video games as more than an American product. Like the film and larger computer industry before it, the video game industry has gone global, incorporating not only global audiences but global forms of production as well (Kerr & Flynn, 2002). In

addition, the video game industry has cemented ties and borrowed forms from other industries, most notably the film industry (Howells, 2002). This trend has continued and is reflected in the current structure of the industry discussed in Chapter Four.

The field of video game studies is one that has grown considerably in recent years. It is imperative that this field understand the institutional nature of the commodities and texts being studied in order to better ground their understanding (Douglas, 2002). The study has progressed to being something more than just toys for adolescent boys. Video games are now viewed as unique cultural artifacts – both tool and art – that can be used in a variety of ways for a variety of purposes. And video games are capable of both reinforcing and subverting ideologies and stereotypes. However, what the field of video game studies is lacking must also be considered.

As mentioned in the introduction, with the field of game studies growing little if any work has focused on video games as part of the cultural industries. In order to do so, an in-depth, systematic analysis of the video game industry within its historical context needs to be undertaken. Based on the existing literature discussed above, a number of important trends warrant examination at the institutional level. First, the continued concern of the effects of video games requires a consideration of how games are produced. Though there has been some public concern – and even State interest – in video game effects, the policing of video game content has been left to the industry. Second, the rise of video game studies as a field of academic interest has resulted in the creation of Game Studies programs at a number of universities in the United States. These programs have focused largely on professional development. If only for the

pragmatic reason of understanding the industries that such programs are training students for, a systematic study of the video game industry is needed. Third, histories of the video game industry have managed to present the industry in a largely ahistorical and acultural fashion. Some attempt is needed that considers the industry in relation to the events, institutions and culture surrounding its development. Finally, the shift felt in both effects and cultural research regarding who uses video games and to what end calls for a more thorough understanding of the practices used by the video game industry in directing its activities: to whom are video games targeted and how does the industry target them?

Theoretical Framework

As seen in the relevant literature, there are a number of concerns about video games which need to be addressed. Because of the concern over the effects of video games and with the messages encoded in them, the question of why these games are produced needs to be addressed. However, as the debates over the history of technology have shown, concern must be taken towards a middle path that avoids economic and technological determinism while at the same time insisting on particular contingencies. Finally, attention to the creative process and controls is needed to further the field's understanding. All of these concerns are addressed by an understanding of video games as a cultural commodity and can be studied best through a critical political economic examination of the production process.

An examination of the video game industry as a part of the cultural industries

must take into account the ideological function of video games. Thus, a purely economic examination is of only limited use. As a discipline, economics has attempted to avoid questions of ideology and cultural meaning (Dowd, 2000). Economics is neither able to consider the industry in a historical context nor does it allow for any critical assessment of the industry, its products, or its processes.

In contrast, a political economic study allows not only for an economic examination of such an industry, but also insists on illuminating its relations to a larger historical context, to the society in that it is grounded, and to the potential ideologies suggested (Mosco, 1996). In its broadest form, political economy can be thought of as the study of “wealth and the allocation of resources” (A. Smith, 1993). Mosco, however, suggests that we think of it in even broader terms: “the study of power relations in a society”(Mosco, 1996). Moreover, political economy must be thought of as a holistic and historical stance, concerned with gaining an understanding of the relationship between capitalism and social good (Golding & Murdock, 1991). As a discipline, political economy is inherently and explicitly concerned with the way in that power is distributed and exercised in society. The shift from the study of wealth to the study of power has served to broaden political economy – and in particular, the political economy of communications – allowing it to step away from concerns of economic determinism and to allow for the possibility of resistance (Gandy Jr., 1992; Garnham, 1990; E. R. Meehan et al., 1994). Such a possibility answers criticisms often aimed at the political economy of communications from cultural studies.

Taking these definitions and applying them to the realm of communication, a

political economic examination begins with the acknowledgment that the communication industries – the industries Nicholas Garnham indicates are concerned with “modes of cultural production” – exist within a capitalist framework (Garnham, 1983). The commodities produced by these cultural industries are, in one sense, informational commodities intended to reproduce the ideology of those in control of the means of production. Among the industries of concern are those directly concerned with information content – such as newspapers and televised news – but also of equal importance, those industries concerned ostensibly with the production of entertainment – including film, televised entertainment, recorded music, and video games. To exist within this framework in the institutions involved must all be fundamentally concerned first and foremost with profit in their production of commodities (Murdock & Golding, 1974). In this way, a political economic examination of communications must be thought of as concerned with the relationship between the industries, products, and processes involved to a broader social totality (Mosco, 1996).

It should be noted that much of the work concerned with the political economy of communications (PE/C) has worked to expressly address the need for critical assessment of the means of cultural production (Wasko, 2004). PE/C, then, is able to address many of the assumptions and weaknesses found in positivist work. As such, it has worked to broaden conceived notions of how audiences interact with commodities by insisting that even the most seemingly innocuous communication commodity can be both entertaining and ideological. It is this ability of communication commodities that makes their understanding so vital.

Beyond these prescriptive concerns, PE/C is also concerned with several particular areas of research interest. Among these are the commodification and commercialization of media, media diversification, forms of media integration (horizontal and vertical), synergy, concentration of ownership and power, and media/state relations (Wasko, 2004). While these areas can be examined at a variety of levels – industrial, international, even the micro-economic level of the individual – this study focuses on the industrial level, with examinations of particular institutions and markets in the video game industry.

Just as PE/C has resisted criticisms of economic determinism, it has worked to dismiss notions of technologic determinism as well. The role of technology in the economy has been widely debated. This study relies on a view which allows technology the capability of benefitting society and its economy or of damaging it. This view posits that technology is best viewed as a means of “opening up social potentialities” (Mosco, 1996). Technology, then, can make change possible or ideologies more pervasive, but it must not be assumed to ensure either case. Such an understanding is vital in the realm of video games, which too often have been dealt with as monolithic technologies forcing children to violence.

The Nature of Cultural Industries

The first term of concern in such an analysis of video games is that of “cultural industry.” The term “cultural industry” owes its origins to the work of Horkheimer and Adorno, who discussed the dangers of mechanical reproduction to culture. Through

mechanical reproduction, art and, thus, culture, were subject to monopolistic control similar to that predicted for agriculture and industry (Horkheimer & Adorno, 2001). It was their argument that under a system of mass production, culture in all aspects became monolithic with no one artifact or commodity more important, useful, or worthy of criticism or accolade than another. Both culture and the industry that produced it became monoliths, and the distinction between high and low culture was blurred if not completely erased. Further, through the contamination of reproduction, what once was art could now only be commodity. Thus, no medium involving mechanical production – or reproduction – could be considered art.

One of the key distinctions between Horkheimer and Adorno's "culture industry" and in the current view of "cultural industries" lies in how technology is considered. Since the concept's introduction, it has been modified to view the realm of culture as something less monolithic. It has since been realized that there are a number of cultural industries that, while often interrelated, maintain separate modes of production and underlying logics (Miege, 1989).

Similarly, one of the chief dangers presented by a culture industry was that of technological reproduction, which was thought to lessen the value of art and culture in all circumstances. Technology – such as the photograph or musical recording – were viewed as necessarily degrading. This is a view that even Horkheimer and Adorno's contemporaries disputed, as seen in the work of Walter Benjamin, who recognized the possibility for artistic accomplishment even within a system of mass production (Benjamin, 2001). Under this view, technology becomes something more complex. It

is not deterministic, but is merely an expression of potential (Mosco, 1988).

This change in stance allows for the possibility that new art forms could develop – such as photography – while still allowing for concern over the social dangers posed by the wholesale reproduction of high culture (Miege, 1989). Thus, the cultural industries model allows for the study – and even the possibility of positive social effects – from areas that might otherwise be brushed aside as “low culture.” Such a possibility demands the examination of the cultural industries that focus on entertainment, such as the video game industry.

Just as the cultural industries are distinct from each other, they do have some common characteristics which distinguish them from other more traditional areas of production. First, the cultural industries deal with semi-public goods that have a high costs for initial production but that are much more affordable to reproduce (Hesmondhalgh, 2002). For example, in the video game industry, there is a high cost of production for both labor and time to produce a single game. But once a game has been produced and sold to a consumer, they can pass the game to their friends or, with the right equipment, make copies of the game to give to multiple friends. As a result, these industries must seek to create and enforce scarcity, to control distribution, to control marketing in order to attempt to create demand, and to find ways to offset high production costs. For most of the cultural industries this has meant the cultivation of catalogues of content, in which the high profitability of one commodity offsets the losses of less successful ones or ones which have slipped out of the controls of the industry. Further, those institutions that have been able to cultivate the largest

catalogues have tended to gain comparative advantage in other sectors of the industry.

A political economic approach to a cultural industry finds itself concerned with “the social relations, particularly power relations, that mutually constitute the production, distribution, and consumption of resources” (Mosco, 1996). It is possible to analyze these relations on a number of levels including industrial, institutional, and even in terms of a single product. By examining video games in this way, a set of forces which influence production is illuminated. First and foremost among these rules is the necessity that any product made under current systems of production must be potentially profitable (E. Meehan, 1991). Only after this question is answered will a product, such as a video game, be made available for consumption.

As has been noted, the video game industry did not emerge from a vacuum. The video game industry functions, first, as a part of the computer industry but also like industries dealing with entertainment. In many ways it is a technological extension of other cultural industries. For this reason, this study draws on existing frameworks to help understand how the video game industry functions. Among these industries are the film and recorded music industries.

In her book *How Hollywood Works*, Wasko describes the film industry as one which centers around production, distribution, and retail. In addition, however, the film industry requires extensive marketing and promotional arrangement (Wasko, 1982, 1984, 2003). The video game industry seems likely to rely on similar functions. It has adopted a similar system of small producers who rely on giant trans-national distributors for a wide variety of functions. Indeed, many of the distributors used by the

video game industry are also involved, via their parent corporations, in film distribution.

Studies of the recorded music industry also offer useful suggestions for understanding the industrial structures of the video game industry. Both industries have experimented with a variety of distribution avenues for their products. One such avenue is that of cable television. In recent years, both Sony and Nintendo have started explorations of television channels as a means of both distribution and promotion. In the recorded music industry, such an exploration led to the successful creation of M-TV (J. Banks, 1996; J. E. Banks, 1991). For this reason, an examination both of the music industry's structures and practices is necessary.

Finally, the video game industry relies on many of the same controls as the general computing industry. Among these are what Frith terms problems of "storage," "retrieval," and "occasion." Video games rely on very specific forms of licensing, methods of controlling piracy, and concerns over availability and pricing. With this in mind, this study incorporates Frith's model with studies of the computer industry to help explain similar controls in the video game industry.

The Nature of Cultural Commodities

If the first concept of concern for this study is the cultural industries, the second must be the cultural commodity itself. Generally, a commodity may be thought of "as the form products take when [a society's production] is organized around exchange" (Bottomore, Harris, Kieman, & Miliband, 1983). Thus, at its simplest a video game

could be thought of as a product produced in hopes of exchange for capital. But in Marxist political economy, a commodity goes further. Marx himself saw a commodity as “congealed labor time” (Marx, 1995b). Here then, a commodity – even a video game – becomes a social relation, the embodiment of the work and efforts of an individual or individuals. This is significant because it suggests that video games need be considered in terms beyond their effects or their messages. This gets at the heart of what it means to be a cultural commodity: a product is created for exchange which is actively produced to provide experience and knowledge of a culture. In other words, the acts and information which make a society possible, its culture, becomes commodified (Miege, 1989).

It is also important to note that the commodification process can occur at a number of levels within a single product (Murdock, 1978; Smythe, 1977). For example, within the game “The Sims Online” there are a number of commodifications occurring. First among these is the creation of the video game commodity. Second, there is the reliance on the subscription of each player. This is an effective way to commodify the leisure time of the game players: active playing time takes the audience away from other activities, including production itself. But the game makers have been clever, introducing advertising into the game in the form of McDonald’s food carts and virtual products for purchase by game players such as an “Intel Pentium Computer.” In so doing, they are able to profit from the commodified time of the individual player.

This is not surprising. The nature of capitalism is, after all, to expand (Marx, 1995a), and so any industry cultural or otherwise will seek new markets and ways to

control them. An examination of the institutional environment that produces video games shows an industry that has developed along similar paths as the global film industry (Wasko, 1994). Companies within both industries began first and foremost as businesses, and then once established, began to seek out artistic recognition for their products. At the same time, the video game has adopted a market structure similar to that of the film industry, with the major focus of industrial activity revolving around the control of production, distribution, and exhibition.

Finally, there is not one form of commodity. Miege breaks commodities into three categories: unique products, reproducible products, and non-material performances (Miege, 1989). Under his categorization, a unique product which enables cultural production but which does not carry an overt message or set of messages which can be passed from one individual to another, such as a camera or video recorder. In contrast, non-material performances carry overt messages but which cannot be reproduced because the message is mutually constituted by the producer/performer and the audience/consumer. A lecture is but one example of this type of cultural commodity. The third type are reproducible products. Here, the physical form – such as a cd or video game – is an embodiment of the messages produced and are easily reproduced and redistributed. The ability to easily reproduce such cultural products is a chief source of difficulty for the industries which produce these commodities. In Game Studies, it has been poorly addressed largely due to the limitations of the dominant methods of research conducted.

Theories of an Information Economy

Because much of the focus of this study is on the production of video games within the context of their highly skilled, highly valued nature, a brief discussion of the idea of the Information Age itself is necessary before considering labor and production with those confines.

While exact definitions of what it means to be in an information economy can be difficult to pin down, there does exist a substantial body of literature surrounding it. It should be noted that for purposes of this study, the U.S. is assumed to be only one of a number of societies exhibiting characteristics of an information economy. At the same time, it is also assumed that there is no example of a country which exhibit only those characteristics to the exclusion of other types of economies (for example, industrial or agrarian).

With those proviso in mind, the origin of the U.S. as example of an information economy can be traced to the 1970s, when a majority of the firms in the U.S. shifted from industrial production to service production. Since this time, a number of other factors including pushes for international free trade, the continued transnationalization of companies – particularly in the communication sector, and increasing pressure from the right on all fronts have increased the view that the service sector has come to dominate the American economy. The normalization of these moves has furthered the idea that the U.S. has well and truly entered an information age.

While the shift towards the service sector has continued and reasons for

acceptance of the notion of an “information economy” has progressed steadily, the metaphors for social progress also move forward to reflect these trends. Most notably, as seen with the development of the Internet, ideas of “information economies”, “information superhighways” and other similar metaphors have become common-place. As this has taken place, critics from both sides of the political spectrum have focused attention on the effects of this new economy and on the Internet and its value to society. Such shifts in society are never without turmoil, but, as Vincent Mosco has pointed out, these moments open up a variety of potential outcomes; some of these may well be positive should we be able to find a way to reach them (Mosco, 1988). Under the shift towards an information economy, one institution with the potential to change its fortunes is that of workers and unions.

In order to better understand the way in which an information economy is defined today, a brief history of the development of the term since its origins is order. The first discussions of such economies began in the 1960s in a number of industrialized countries, not just in the United States as much of the current rhetoric would seem to indicate (N. Dyer-Witherford, 1999a).

As has been noted, the ideas behind an information economy are not new. In order to better understand the way in which the concept of an information economy is defined today, a brief history of the development of the term is in order. The first discussion of such economies began in the late 1960's in a number of industrialized countries, rather than just in the United States as much of the current rhetoric would seem to indicate (N. Dyer-Witherford, 1999a).

Indeed, the first mention of an “information society,” and through it, an information economy, is found in the work of Japanese futurists such as Yoneji Masuda, Todeo Umcsao, and Yujiro Hayashi. For these authors, the idea of an information society began with the introduction of computers to industrialization. They argued that because of the ability of computers to increase automation of production, Japan had entered an “informational” mode. Beyond the benefits in automation, they also suggested that by integrating communication between office, factory, and consumer, additional productive benefits would also result. Interestingly, the work of Masuda and his contemporaries also emphasized the potential for these changes to also increase free-time for individuals. Unlike later definitions, their work suggested that such shifts would lead to decreased materialist concerns and, thus, promote a stronger community (Masuda, 1981; Morris-Suzuki, 1988). While consumption has been re-emphasized in later discussions, the centrality of computers and communication technology and the benefits to production are common threads throughout the conceptualization of the idea of an information economy.

Not long after the Japanese theory of an information society was suggested, the United States saw its own version developed. In a 1977 report by Marc Uri Porat for the U.S. Office of Telecommunication, a slightly altered theory was advanced. Porat's report pointed to the rapid growth of information and service sectors within the U.S. economy. It indicated that these sectors had become among the most dynamic contributors to the Gross National Product (GNP). Under Porat's definition, the types of labor crucial in the information and service sectors was greatly varied, including

academics, telephone operators, computer programmers, media producers, and librarians as well as less obvious choices such as insurance adjustors, bank employees, stock brokers, and domestic laborers (Porat, 1977).

At almost the same time, still another report was published in France by Simon Nora and Alain Minc. While many of the premises examined and conclusions drawn are similar to the Japanese and U.S. cases, the French study is significant for its introduction of “telematics” or the convergence of computers and telecommunications as the driving force of an information economy (Nora & Minc, 1981). Unlike previous theorists of the information society, Nora and Minc explicitly placed communication technologies at center of the economic revolution they were documenting.

Perhaps not surprisingly in light of such reports, by the early 1980's the idea of an “information economy” began to take hold across most industrialized nations. Loosely understood as a technological shift with global impacts on production and consumption, comparisons to the shift to mass production in the late nineteenth and early twentieth centuries were made, suggesting the end of the business cycle and the arrival of a new economy (Editors, 2001).

Most modern definitions share many of these characteristics, focusing on neo-liberal, free-market assumptions. Information and the associated technologies are assumed to be the doom of industrialized society (Bell, 1973), great equalizers signaling a shift in our fortunes. Benefits, like a wave, should wash over us and change us forever (Tofler, 1980), leaving us forever changed and better for the experience. However, these modern definitions have taken on a new, pluralist ideal as well,

suggesting that the arrival of the “information age” means prosperity for everyone in a society through a perceived ability gained, through technology, to participate in democratic and economic processes.

Recent dictionaries in economics and media studies provide examples of definitions grounded firmly in the neo-liberal camp. Information economies, they claim, are defined by increased production across industries, particularly in the production of physical goods but also in the areas of communication and information. At the same time, these definitions indicate that consumption changes as well. Here, they argue that information economies are disinflationary, allowing growth without increased prices. Finally, they suggest that information has become a, if not the, primary commodity in society (Epping, 2001; Watson & Hill, 1993).

In contrast, pluralist definitions focus on access and availability of information commodities. In these, what is suggested is that information is freely available to everyone, or eventually will be. Through the use of this freely available information — indeed, through the very fact that it is freely available — everyone will become equal. Such definitions are rarely explicit, however, and often are contradictory. One example points to the liberating benefits of new technology and information for the world in the same paragraph that mentions that more than half of the world's population has never made a phone call (Mazarr, 1999). These definitions suggest the shift in viewing information and access to information as an explicit form of power.

Based on this history and the evolution of the definition of an information economy, the following criteria can be said to define the idea:

- information economies are global economies
- information economies result in increased production across industries, particularly in the production of physical goods and products
- under an information economy, the information sector becomes more dynamic than industrial sectors in the economy
- information economies allow increased consumption without increased price (disinflationary)
- information economies are based in the adoption and development of communications technologies, particularly computers and telecommunication
- under an information economy, money is displaced as the primary form of capital and commodity by information
- information as capital and commodity tend towards equal access and, thus, an eventual equality of power for everyone in society

When defined in this way, a number of contradictions in the nature of an information economy become immediately evident. It is worth noting that many researchers have found fault with these criteria. Some of these refutations are discussed in more detail in later chapters. It is also clear that the neo-liberal and pluralist notions of an information economy go hand-in-hand, and it is as such that critics of the idea of “information economy” have examined them. Most critiques have come from the Marxist tradition of research, a point which this study follows.

The Nature of Information Commodities

Video games exist as the commodity form of a particular information processing event and so must be examined as unique forms, different from automobiles or agricultural products. Only by an examination which is prepared to acknowledge difference in their form and production while admitting there are similarities to other forms can video games be truly understood both as commodities which allow

communication during (and, in fact, because of) the extraction and conversion of value.

Just as the idea of an information economy has taken years to develop, so, too, has the way in which we consider information as a commodity. Many researchers have examined the history of both ownership of information itself and of the mechanisms, such as copyright and labor law, for controlling it. Indeed, as Vincent Mosco has argued, perhaps the most basic function of capitalism is the drive to continually incorporate new things into the commodity form (Mosco, 1988), and while information might not be the latest such incorporation, it has certainly been one of the most disputed.

Dan Schiller has argued that the potential for information to be a commodity has always existed because information has always existed as a resource (Schiller, 1988). Here, then, is a crucial distinction. Information as a resource may be of potential use. However, a commodity not only has actual use, but is branded in a historical context. Thus, the nature of an information commodity is one which is distinct to us and which may be redefined by social change.

Researchers examining the historic development of the mechanisms of information control underscore this point. The example of the development of copyright, in particular, shows a number of dramatic shifts. Not only is what information should be controlled an important question to consider, but also how it should be controlled and who should control it (Rose, 1993).

Similarly current U.S. policy about the types of information which may be owned is in flux. James Boyle, a critical legal scholar, examines the contradictions of

these current policies. He points to a variety of types of “information” which are currently being fixed in a system of control (Boyle, 1996). It is this process of fixing control over something which is the historical process of commodification referred to by Schiller and upon which the idea of an information economy hinges. Boyle argues, as does Lawrence Lessig, that the continued push to commodify and control information for longer and longer periods could have disastrous results for society. Where this disaster will occur they cannot say, though it is being acted out both legally, politically, and economically (Lessig, 2001).

However, other scholars, particularly those in communications, have pointed to a growing centralization of the control of information and copyright. While the work of Rose and Boyle suggests this, more explicit examinations of the nature of control over the information commodity exist. Perhaps the strongest example is the work of Ron Bettig’s analysis of the consolidation of copyright shows that the commodification of information (and of information products) has resulted in controls resting with an already oligopolistic media complex. His work makes explicit the importance of understanding copyright and the information commodity as a socially contested method of control (Bettig, 1996).

With this history in mind, commodities can be thought of in two ways. First, as Adam Smith, discussed them: in terms of use value, or the ability to satisfy human needs and desires (Bottomore et al., 1983; A. Smith, 1993). Second, they can be viewed, as Marx discussed them, in terms of exchange value or the ability to earn their controller an exchange of commodities (Bottomore et al., 1983; Marx, 1995b).

Further, when made into a commodity, information exhibits a rare characteristic. Information commodities are not used up in consumption (Mosco, 1996). The ideas in a book, the content of a television broadcast, the knowledge of a professor are all examples of information commodities. The book can be shared; its ideas discussed. A broadcast can be repeated, can be stored, can be saved. A lecture, one hopes, can be documented; its contents discussed, even elaborated on. This is a crucial distinction from most other commodity forms.

It is also possible that meaning can be attached to information without a laborer intending it. This point was best discussed by Canadian researcher Dallas Smythe, who suggested that the actions of a consumer can be made into a commodity, as is the case of television audiences. As audiences consume a television program, one type of information commodity , their patterns of consumption become another information commodity (Smythe, 1977). Smythe's point blurs the boundaries of what has been considered traditionally productive labor. As an example, consider the creation of a literary work. Under traditional economic definitions, any author who wrote without intent of payment was a non-productive worker, while anyone intending on being paid becomes productive. Charles Dickens and Jackie Collins are productive workers; John Milton and Antonio Gramsci are not. Under this definition, television anchors are productive while television viewers are not; unless, as Smythe points out, we take into account the role of advertising.

These latter two characteristics of information commodities — their inability to be used up and the differing methods of creation — that demand attention. First, such

commodities must be understood because of the difficulty in controlling them. It is this distinction that has garnered the most attention. Copyright, for example, has always attempted to exert a form of control over information. Similarly, the recent battles about file sharing software have ultimately been about control. However, it is the capability of producing an information commodity unintentionally — or at least, unknowingly — that seems most important.

How then do we understand an information commodity? For purposes of this study, what must be noted is that information as a commodity is a form of social relation which has taken center stage over the past three decades. Perhaps more than any other commodity form, control of and access to information has been foregrounded as a path to power in modern society. Unlike most other commodities, information must also be understood as one which is not used up in the process of consumption. In effect, information is a commodity which can be used over and over, combined in new ways with other pieces of information to form not only new products, but also new ways of exercising power. The question this study attempts to address is implicitly concerned with control over a form of information commodity produced by consumers of media and information products.

The information commodity itself may take a variety of forms. The contestation over control of these commodity forms has become one of the chief battles of the information age. As Anne Wells Branscomb has pointed out, there is currently no central rule about control of information because there are a number of different forms of information commodity (Branscomb, 1994).

Based on this discussion, information commodities are defined by the following characteristics:

- information commodities have actual as opposed to only potential use
- information commodities are grounded in a historical context and, as such, may be redefined by a change in society
- information commodities have use value, or the ability to satisfy needs and desires
- information commodities also have exchange value, or the ability to command other commodities for whomever controls it
- information commodities may function as public goods
- information commodities may be infinitely exportable
- information commodities may carry different meanings in different contexts
- information commodities exist in a variety of forms
- information commodities may be produced without the knowledge of the producer

It is the combination of these characteristics which has necessitated the development of controls over information, creating what has been termed “the control revolution,” reshaping controls at both the individual and the institutional level (Lessig, 2001; Shapiro, 1999).

Labor in the Cultural Industries

The last major area of literature which must be considered examines labor's role in the production of commodities. Because this study intends to focus on how video games are produced, the status of labor in the process must be understood as well. As has already been shown, video game production is best seen as a subset of the computer industry in general and so the trends common to the computer industry serve as the logical starting point for examining labor trends in video game production.

Interestingly, the field of economics has largely taken the role of information and of human capital as a sort of uninteresting given. Unfortunately, most communications research with the exception of critical political economy has followed in this tendency. Instead, knowledge is something for firms to invest in which is seen to create somewhat unique managerial problems (Scarborough, 1999) or to warrant investment (Carillo & Zazzaro, 2000) but little other consideration. Knowledge is only a new form of public good — one which has the potential to be shared equally among a society, and so must be monitored and controlled (Bakos, Brynjolfson, & Lichtman, 1999). It can be quantified and measured, gauged and limited. It is a thing to be understood and used. It serves as the key ingredient to game theory, an idea which believes everyone can play and play rationally provided information is distributed fairly and equally (Allen, 1990). However, few of these economic studies take into account the ways in which information — or knowledge, when they choose to distinguish between the two (Armstrong, 2001; Scarborough, 1999) — is actually distributed throughout a society. This consideration, as Fritz Machlup has pointed out, is just the sort that one body of researchers often feels better left to someone else, whoever they may be (Machlup, 1962). In this case, it is the culture industries which are deserving of study, and it is communication scholars who must take up the challenge.

Over the last 30 years labor patterns within the U.S. have taken a pronounced turn. “Human capital” -- investment into training of workers by management -- has increased dramatically in response to changes within the industry (Carillo & Zazzaro, 2000). Information is said to become the primary form of capital; knowledge itself has

become a form of investment. Only some of this can be attributed to technological shifts and economic upswing even in the information industries. These industries, including the high technology and computer sectors, have been in a state of growth for over a decade. One study, conducted by the Information Technology Association of America, found that while more than 1.6 million technology jobs were being created each year, almost half would go unfilled (Obermayer, 2000). In the Internet sector — the sector the AOL division of AOL Time Warner works in -- more than 100,000 new jobs were created between 1995 and 1997.

Despite the high growth of jobs in the computer industry, however, there are few examples of labor unionization; workers are instead lured with promises of stock options and public offerings (Ross, 1999). The service sector in the United States accounts for more than 75 percent of the Gross Domestic Product (GDP). The high tech and dot-com industries have been a substantial part of this (McCammon & Griffin, 2000). However, in 1998, the wild growth the industry had been experiencing came to a dramatic halt (Race, 2001), resulting in massive layoffs. These layoffs have spelled difficulty for the industry, though, at least initially, not for the economy. In September 2000, the national unemployment rate dropped to 3.9 percent, its lowest point since the Nixon administration (E. Smith, 2000).

Because the high tech industry has been, until recently, very loosely defined — including a highly disparate number of sectors spilling over across virtually every industry — exact numbers of workers are difficult to obtain. General agreement suggests that there are several million workers currently, only a small fraction of which

are unionized (Pfleger, 2001). The effect of the wave of dot-com closings has been less hard to discern, as workers entering the high tech industries have begun to decline. One examination found that 20,000 workers have been laid off from Internet related jobs since 1998 (E. Smith, 2000).

With this wave of layoffs and closures has come new worries for workers in the industry. Closings resulted in submerged value of stock options offered to employees — one of the standard benefits of Internet companies (Race, 2001). The allure of dot-com jobs has begun to wear off, forcing workers to reconsider the value of what Smith terms “old economy” issues including job security, eight hour work days, and working in a meritocracy (2000). But most workers in the industry say it was never the stock options that mattered. Instead, most of them were drawn by the opportunity to help build a company and the “feeling like they had a say in which schedules they would work, when they would put in overtime, and whether they would receive raises when they took on extra duties...” (Race, 2001)

While the concerns of dot-com workers have been well documented, there is a second, often-ignored portion of the high tech labor force. Corcoran points out the value of thousands of volunteers and legions of part-time and temporary workers which have made the high tech economy possible. Many have spent considerable time and effort organizing chat rooms, online games, and contributing programming to the full spectrum of companies in this sector (Corcoran, 2001). The video game industry also relies on a core group of volunteers called “Beta Testers” to help in the production of games, a fact which has received little documentation or examination.

Perhaps most interesting, a number of distinct trends in employment can be seen across the information sector. The economy — more specifically, the sector — described by Machlup is one which falls within the larger service sector shift described by Porat. Both rely on a shifting from industrial production to informational and service industries. That these industries emerge only in conjunction with telecommunications and computers — a convergence termed “telematics” (Nora & Minc, 1981) — is a fact which is now tacitly assumed. This should not be taken to suggest that the rise of telecommunications and computers paved the road for the service sector. In fact, service industries have existed in some small form for at least as long as industrial production. Teachers and accountants, for example, are both examples of service sector laborers. Instead, these new technologies allowed these sectors to come to dominance within the U.S. economy.

However long standing service sector employment might be, for the majority of the Twentieth Century, employment within it has been dominated by women (Bell, 1973).¹ Jobs within this sector have tended to pay low-wages, poorly and sparsely unionized, and — contrary to much of the rhetoric about information economies — low skilled (Martin, 2002).

Martin's analysis draws on Machlup's six categories of information workers,

¹ It is worth noting that the role women have played in service industries has traveled similar paths elsewhere. Ellen Balka points to the centrality of women's labor in the formation of the Canadian telecommunications system, despite their small representation in the industry of today (Balka, 2002). Balka's article is particularly interesting because it demonstrates an almost systematic obfuscation of women's roles in the creation of the Canadian telecommunications industry.

allowing her to demonstrate several important historical trends. First, while not all information jobs are low skilled, a majority are, and it is in these positions that women within the sector find the majority of their employment. Second, as the importance of the information sector has grown within the U.S. economy, women have become more likely to lose positions within it (Martin, 2002). The reasons for this become clear when the growth in information is placed in the context of globalized production.

Unfortunately, the trends illustrated by Martin have become more pronounced since her study was completed. Information from the United States Department of Labor indicated that the gradual shift of information employment from females to males has continued (U.S. Congress, 2000). Perhaps just as importantly, while the information industry remains one of the higher wage paying industries in the United States, it is losing ground to high technology production industries — such as the semiconductor industry — and overall wages have failed to rise as fast as the cost of living (U.S. Congress, 2001).

One factor which has come to increasing prominence in the last several years focuses on how the information and service industries have lost considerable ground to global competition, with many jobs either moving overseas (U.S. Congress, 2001) or being filled by immigrant workers who are subject to still lower wages within the U.S. economy (U.S. Congress, 1999). With this in mind, it becomes crucial to examine the status of the information sector in a global context.

Globally, a tendency towards toward longer hours for lower wages has been on the increase, a trend which can even be seen in the richest nations (M. D. Yates, 2003).

Moreover, because there is an increasing trend towards a “horizontal labor market” in which labors shift jobs frequently within an industry rather than moving up within it, the prospects for laborers within the video game industry may be bleaker than they are often portrayed (Florida, 2002).

The high tech industries have also continued an alarming trend towards gendered labor practices which have left female employees excluded from the best jobs in the industry while receiving consistently lower wages for the few remaining jobs (Martin, 2002). This is particularly troubling as the industries involved globalize production. In the video game industry, where much of the content has been directed towards males historically, it would not be surprising to see these trends continued.

Finally, when discussing labor, some discussion of organization among workers is also useful. Typically, such discussions center around whether organization should be based on a skills and trades or whether it should occur across an industry. And while this topic will be taken up, a discussion which weighs the goals of a union against those of management is particularly helpful. Victoria Hattam (1990) provides a useful starting point. She discusses the development of labor unions as contingent upon a number of choices between political action and adversarialism. The first would see unions act as a direct political force, attempting to place candidates in office and affect policy change. The second view sees a more limited role for unions. Under this conception, which became the dominant one within the U.S., unions should act as a direct counter-balance to corporations and no more. Much of the impetus for this view stems from an extensive battle in the courts over workers' ability to undertake collective

action (Hattam, 1990).

Hattam's discussion contrasts with Herrigel's (1993) description of the rise of German labor unions, which ultimately found not only a place within business but also gained a legally recognized position in managerial decisions and in employment considerations (Herrigel, 1993). As noted, the U.S. system of unionization developed under different circumstances, but this comparison becomes useful if only to indicate a broader range of possibilities for the role of unions than is frequently considered.

A useful conception of the range of possibilities for unionization under an industrial system is provided by Barry and Irving Bluestone. They divide their conception into three tracks. The first features unions in an adversarial relationship with management — the situation familiar to most in the United States. Track two allows workers some participation in workplace decisions but lacking a voice in governance in directing the business as a whole. A common feature at this level is the stock option, which hinges on success of the company for reward while not allowing immediate access to decision making. Finally, track three brings workers into positions involving workplace governance and managerial prerogative (Bluestone & Bluestone, 1992). While their models are tested on workplaces involved in industrial production, they are useful distinctions for information economies as well.

A political economic approach to video games allows research to answer a number of questions previously unaddressed in and to avoid many of the pitfalls hampering earlier research. By shifting the focus away from a monolithic technology or ideology to the industry that chooses to produce the technology and the messages

carried by it, it becomes apparent that different processes are at work. It becomes possible to consider proactive solutions to questions of violent content, dangerous effects or questionable use of stereotypes. Under this framework, video games are commodities produced by distinct institutions. And under this framework, it is possible to ask who decides what content goes into a video game and what compels them to make those decisions. It is hoped that in this way, some meaningful suggestions might be offered in answer to the concerns levied against video games and the industry that produces them. Drawing on the existing literature and on the theoretical framework of a political economy of communications, this study examines the current state of the video game industry.

Methodology

In order to answer the research questions from Chapter One, this study draws on three primary methodologies: institutional history, document analysis, and in-depth interviews. Because this study examines an area which has been barely studied, much of its methodology is grounded in qualitative methods, particularly in its use of in-depth interviews. However, by its very nature, institutional analysis is empirical, relying on data about the industry, its main players and markets, as well as descriptions of the workers within the industry. What follows is a brief discussion of each methodology and how each is used in this study.

Institutional History

In order to provide a context for the current video game industry, an understanding of how it developed in relation to what social and historical forces is needed. This is the role of what this study refers to as “institutional history” (Appleby, Hunt, & Jacob, 1995; Nord, 1981). Such histories examine the development of a particular institution – in this case, the video game industry and its components – through the examination of primary sources, including data provided by the corporations, labor unions, and government sources. Examples include annual reports, studies by industry associations such as the International Game Developers Society, and reports by the Bureau of Labor Statistics. Secondary sources – such as newspaper and magazine accounts, articles in the industry trade press, existing histories of the industry and institutions, and relevant academic papers – are also useful in constructing a meaningful institutional history.

Much of the information gathered through this method is economic data – such as total number of employees, total revenues, etc. – and serves to ground the video game industry in a larger social context. However, it also includes the biases of those institutions and individuals who have provided much of the data to begin with – particularly that of the companies involved in the industry. However, without this sort of data, no understanding of the modern industry can be gained.

Such a history also leads to what political economists of communication often refer to as an “institutional analysis.” Such an analysis allows for a broad description of

the overall industry structure – the sites of production, the forms of distribution(including retail), promotion (including marketing and advertising), and consumption discussed by Wasko (1984), as well as the restrictions placed by the industry and the State on what Frith (1997) terms “storage, retrieval, and occasion.” In other words, what are the controls on video game use and which institutions – industrial, governmental, or something else entirely – which produce those controls? Indeed, such a description of the industry should allow for a better understanding of the contributions of labor into the creation of video games, which this study highlights.

It may be noted that an institutional history is as much a goal as a method, and as such, relies on other methodologies to support it, such as document analysis.

Document Analysis

Too often seen as a method only appropriate for history, what Scott (1991) terms “document analysis” has broad application for other modes of inquiry. Document analysis seeks the existing discourse both from within an institution as well as from outside it. While Scott offers caution about the limits of document analysis, it is vital for both institutional history and for the political economic approach to understanding communications.

Document analysis serves as the first step in understanding the policies and practices of the video game industry and its constituent institutions. Further, documents from outside the industry – including discussions of the industry occurring in legal and political forums – allows the industry to be understand in relation to the broader social

structure. Instances where the government – both federal and state within the U.S. and in other countries – have had unique perspectives on how to deal with video games as an industry and as a form of content. Such research is also likely to yield information about the policies of other institutions in relation to the video game industry. Examples include ties between the video game industry and other cultural industries. In addition, the area of labor and its relations to management within the industry is likely to be better understood through this methodology.

Numerous sources for records considered would be included. First are government documents, which are ideal for understanding how the industry is regulated and linked to other industries. Examples include hearings about how to regulate video game content and court cases related to the industry. Further, trade publications, such as *GameWorld*, *Video Gamer*, and the publications of industry trade associations such as IGDA and NPDFunworld provide excellent information about how the industry views itself and how it is facing the challenges suggested in other document types. However, the trade publications of other industries also have much to say about the industry. *Variety* and *Billboard* both frequently deal with the video game industry and its ties to other specific cultural industries. As already noted, original documents from the companies in question, including annual reports, earnings statements, and internal documents, when possible, have been consulted. In addition, the popular press also provides valuable documentation about the video game industry. Numerous discussions of the industry have been found in magazines such as *Time*, *Newsweek*, and *Wired*, while newspapers such as the *New York Times*, the *San Jose Mercury News*, and

the *Wall Street Journal* have all given increasing attention to the video game industry.

As noted in the discussion of institutional history, document analysis requires an awareness of the biases of the institutions and individuals producing the records being examined. It is hoped that by casting the widest possible net – by considering relevant documents from a wide variety of sources – this potential hazard may be avoided. Further, document analysis is limited by access and history; it seems likely that much of the data available has, at best, pointed to the state of the near-current industry rather than the industry as it exists today. For this reason, in-depth interviews are a necessary complement to both institutional history and document analysis.

In-depth Interviews

Because part of this study is geared toward understanding not only the current status of the overall industry but also the particular situation of laborers in the industry, it is imperative that these laborers be dealt with directly. Indeed, interviews with not only laborers but also with managers and employees involved through the complete production and distribution process were contacted. Ethnographic interviews allow for direct contact – and, if needed, some participation – with workers in the industry and their day to day situation. In so doing, it becomes possible to put a face on the production of video games and to begin to understand when and where decisions are made that ultimately result in the commodity of video games.

Interviews serve a number of purposes in this study. First hand accounts of how the industry functions were invaluable, allowing a more nuanced picture of the industry

to be created. In addition, these accounts serve as a check on the portrait of the industry seen through historical and document research. Second, even the closest examination of existing records does not guarantee discovering the current challenges and problems faced by the industry, in particular those faced by its workers. Interviews, then, need to focus on the experiences of employees across the industry, including game designers, managers, as well as those working in promotion and distribution, advertising and marketing, and retail.

Because this study is exploratory, using interviews to help better understand the production process, the scope and focus of the research is subject to change as new information is gained. The study, however, is strengthened by this flexibility. Similarly, interviews allow for the creation of more meaningful categories and description than may be currently available. For example, as it is currently proposed, this study has a particular conception of the division of labor in the industry. As the study progressed, problems with this conception can be corrected, providing a more accurate portrayal in the final product. Under the best circumstances, the study has led to a discussion of the industry's relations or of labor's function within the industry that could then be examined and tested in later research.

Chapter Summary

This chapter has provided a framework for the study of the current state of the video game industry. It has reviewed the relevant bodies of literature and suggested flaws in the field which this study addresses. In order to address these flaws, a

theoretical framework grounded in critical political economy has been adopted. Under this framework, video games have been examined as commodities produced individuals and institutions in the employee of the cultural industries. Finally, methodological considerations were discussed in order to help explain not only how the analysis would be carried out but also how the flaws of existing studies of video games would be addressed.

Chapter Three will examine the history of the video game industry and provide a social context for the industry's development. In addition, the origins of ties between the video game industry and other cultural industries will be discussed. The history of the industry will serve as the stage on which the major players in the industry will be introduced so that they and the industry's current structure can be analyzed in Chapter Four.

CHAPTER III

HISTORY OF THE VIDEO GAME INDUSTRY

As discussed in the theoretical framework presented in Chapter Three, there have been numerous versions of the history of video games. These histories have been largely devoid of context, providing little more than names and dates while ignoring links to the larger context. Moreover, these histories have almost always been simple lists of when games were produced with some notes on why each particular game might be interesting. Again these histories typically have not tied the historical development of video games to any broader social trends. This has resulted in historical accounts not only superficial and uncritical but which have ignored the development of video games as a cultural industry.

This chapter moves beyond such histories, contextualizing video games as commodities. Rather than provide a history of individual games or of particular designers, it traces the video game as a result of decisions within the industry in response to market forces. This does not mean it ignores significant events, whether they be technological or individual. Instead, it places these events into the larger capitalist framework. From their beginning, video games have been treated as - and subject to the logics of - commodities. This study's analysis is accomplished along

three axis: institution, technology, and audience. By examining these three areas, a better understanding of the emerging industry and its various commodities is gained.

From these analysis, three primary discrepancies become apparent, each of which flies in the face of typical “myths” about video games and the industry which creates them. The first of these deals with the industry’s view of itself in regard to function and similarity to other industries. Most studies of the video game industry consider the industry a subset of the toy industry. In contrast, the industry really emerges – and has consistently seen itself – as a subset of the computer industry but with distribution models based on film, toys and recorded music.

The second major discrepancy in the existing histories of video games is tied to the first. Any portrayal of video games which views them as simple toys allows the product to be marginalized into children’s culture. While the impact of video games on children is clearly of great importance, we must be careful not to fool ourselves that these commodities are only designed and used by children. Nor, as the history in this study shows, have they ever been. Particularly in the industry’s historical roots we see that the audience most suitable for many video games is, in fact, adults.

Finally, because the industry and its products have been treated as toys, their function as communication devices has been largely ignored. This has allowed trends towards convergence and ideology within video games to be treated as relatively new. But again, a close examination of the discourse surrounding the development of video games makes clear, video games have always been worthy of consideration in terms of communication and its processes because the convergences currently being witnessed

are neither incidental nor accidental. The ties between video games and other forms of media is more fully explored in coming chapters, but the evidence of these ties is present from the beginning. In spite of the difficulties the industry has faced, convergence has long been one of its goals.

Spacewar: The Emergence of Video Games

As Toles has noted, video games emerged from the highly funded government research in communications and computers in the early 1960s. The first games were developed as part of the mammoth ARPA project which resulted in the creation of the Internet, as well as many of the home computer devices which have since become commonplace (Toles, 1985). In some cases, game development was actively supported, as in simulators. But there was also a considerable amount of unintended development. Many of the earliest programmers experimented with games as a means of testing the capabilities of machines and demonstrating these capabilities to others.

These first games generally dealt with strategy and decision making. In fact, almost since the creation of computers, games have been devised for them including basic versions of tic-tac-toe and similar games. But eventually more sophisticated games, which pushed the capabilities of programming and machines, were made. These games pushed the advancement of games and of computer technologies (Becker, 1976). Because of the close ties between initial game development and the U.S. military-industrial complex, it is not surprising that the first video game was a primitive

game of spaceships shooting each other called *Spacewar*, developed in 1961 (Herz, 1997).

It is interesting to note that video games have reached such legitimacy that various government agencies claimed the most impact on the initial developments (DOE, 2003). For purposes of this study, the difference between the games developed at the Brookhaven Institute and *Spacewar* is that *Spacewar* relied on the use of both video and computing technology while the Brookhaven experiment was entirely solid state technology (Demaria, 2003). While such speculations may be little more than public relations at this date, the ties between the emergence of video games and the military-industrial complex cannot be highlighted enough. Whatever the case, as Nick Dyer-Witherford notes, the impact of video games on our culture has been such a watershed moment that it bears comparison to the emergence of the film and recorded music industries in the early 1900s (Dyer-Witherford, 2002).

Spacewar's claim as the first video game itself is worth some explanation. Computers had been in use for almost two decades by the time *Spacewar* was invented, and as noted above, simple strategy games like Tic-Tac-Toe had been created to test computers in their earliest days, what is it that makes *Spacewar* the definitive first video game? The answer is a technological one. *Spacewar* can and should be considered the first video game for a number of reasons. First, it is the first computer game that relied on a screen for display, the video component. Second, it was the first game which did not rely on punch cards but rather on keyboard instructions, introducing new levels of interactivity as well as the potential for a mass market. This advance shifted the

possibility of consumer use of video games. Now, a user did not need to know how to program a computer. Instead, only access and basic instructions were required. With these advancements in place, it becomes possible for an industry to emerge.

This also marks a significant rhetorical schism which continues to play out to this day: the question of terminology. The question of the best term to use for video games persists in the field of game studies. The development of *Spacewar* marked the first point at which the term “video game” could be distinguished from “computer game” and “electronic game.” Prior to *Spacewar*, games could be created on a computer that included no video component. These are best referred to as computer games. Later, the toy industry began to market games which relied on microprocessors and computerized parts. These are best referred to as electronic games. Lastly, there are products which include computer usage and a video component. These are best referred to as video games.

Spacewar is also significant because of how rapidly it spread. Its creator, Steve Russell, admits to having considered whether he could market the game, but decided that there was no audience. Instead, he allowed the source code to be shared with anyone interested. But this does not dismiss the fact that the first video game was recognized by its creator as a potentially lucrative commodity. That it took almost a decade for capitalist forces to recognize the potential only suggests that initially there was not the knowledge of how to find or create a market.

The game took off across the ARPA nodes, with programmers adding refinements and new features. The spread of the game was so quick and widespread

that by the mid-1960s it was estimated that there was a copy of *Spacewar* for use on every computer in the United States (Herz, 1997). At a time when simply running a computer – giant mainframes – typically required a government grant, the pervasiveness of the game cannot be underestimated. And by the early 1970s, *Spacewar* was being played nightly, during the typical downtime for mainframes, on computers at many major companies as well (Ferris, 1977). Interestingly, *Spacewar* also served to legitimize computer science to a more general public (Herz, 1997). Russell notes that many programmers would show *Spacewar* to friends and family as a means of explaining not only how computers worked but what they could do. Other games developed as well, and the most popular game on mainframes after *Spacewar* was one based on the 1960s television show “Star Trek” (Ferris, 1977).

How then has the production of video games as commodities flown under our radar? In part, it owes to a perception shift in how video games were treated. Until roughly the early 1980s, there was continued acknowledgment in the mainstream press of the relationship between adult usage and the video game commodity. However, at roughly the same time the industry hit its first major stumbling block, coverage of video games begins to shift. First, the industry was treated as something less than serious. The logic seemed to be that if sales started big and collapsed, it must be a fad. In capitalism, nothing assures marginalization quite so readily as failure in the marketplace. But when the industry began to prosper again in the late 1980s, owing much to the success of Nintendo, coverage of the industry also shifted to focus on the impacts of video games on children. This resurgence of the industry was based on two

factors: technological advances and a solidified industry structure based on the modern film industry (Netsel, 1990).

Emergence of an Industry

"[Home computers] are the railroad trains of the 80's."
- Robert F. Wickham ("Hot Market in Electronic Toys," 1979)

Spacewar laid the groundwork for the video game industry. It provided audiences, legitimation and an entertaining use for a technology that was mystifying to most people at the time. Coupled with the rapid development of the computer and hardware industry – particularly the rapid increases in computer memory which have since served as one of the biggest limits on technological development in both the video game and the overarching computer industry – Russell's game set the stage for the emergence of video games as commodities.

From the development of a video game, the wait for a formal industry's emergence was not long. Within a decade, the first successful video game company was founded by Nolan Bushnell (Campbell-Kelly, 2003). The company, Atari, is still a major force in the industry today. Perhaps best known for its creation of gaming consoles in the late 1970s, Atari actually began with the production of coin-operated arcade games. In 1972, when the company was founded and introduced its first major hit, *Pong*, computer technology was neither sufficiently accepted nor accessible to the general public. With the additional limits of size and memory, arcade games were the only viable option for the video game industry.

Atari's emergence is the first attempt of an industry to reconcile the existing logics of three distinct - and until this commodity, disparate - modes of production. A schedule for production came from the toy industry. From computers, a reliance on technology and a means of ensuring its continued need. And from media and communication came a need to control and expand on profit from exhibition.

At the same time Atari was forming, major toy companies were experimenting with what they called "electronic games" which essentially relied on electronic and sometimes computerized parts to make them run(Rice, 1979; Salsberg, 1977). Among the companies in manufacturing these games were Milton Bradley, Fairchild Electronics, and RCA (McQuade, 1979; Salsberg, 1977; "Why Electronic Games Will Be Hard to Find," 1979). These companies experimented with both electronic games and video games. These early attempts proved popular enough that by the late 1970s, video games were seen as competition to other media forms, particularly television (Fincher, 1978).

In contrast to these more established companies, Atari's development in many ways served a precursor to the home computer industry which would begin to emerge only a few short years after Atari's founding and owes considerable success to its first forays into arcade production (Campbell-Kelly, 2003). Bushnell, the founder of Atari, first pitches his video games to an arcade producer, and on the success of these games - and his failure to reap much of the rewards for them - he founded his own company Atari (Cohen, 1984). But the arcade industry peaked around 1982, at around \$2 billion in revenue (Campbell-Kelly, 2003). However, the manufacture of arcade games is still big business today and is often used as a test market for upcoming PC and console

games (McCallister, 2005). With this in mind, the remainder of this chapter focuses on the development of video game sectors of personal computers, consoles, and hand-helds.

It should be noted that the history of video games has been divided into two epochs or generations. The first generation was highlighted by games which included both software and hardware as part of a single production process, limiting the game to a single function (Ferris, 1977). In the first three to four years of video game production, much of what was produced fell into the first generation category. It is the allegiance to this model that resulted in the toy industry's loss of market share in video games, allowing a separate system of companies such as Atari to spring up into the modern video game industry (McQuade, 1979; "Why Electronic Games Will Be Hard to Find," 1979). But by 1975, game production begins to develop into the second generation, with the creation of consoles and corresponding cartridges which allowed systems to be much more flexible ("Demand Overwhelms Video Game Makers," 1976).

What is clear from the early history of the video game industry is that it was contingent on factors of both the toy and the computer industry. There are a number of trends established in the early days of the industry which are still evident today. First, the industry relied on ideas from both toy development and computer development. From the toy industry, it took the schedule focused on the fourth quarter Christmas rush for products, while from computer industry, it adapted ideas of planned obsolescence, particularly in its reliance on the continued development of chips and smaller parts. And like many other media industries, there have always been efforts to control and profit from its content.

With these concerns in mind, an examination of the two primary commodities - hardware and software - is possible. These two sectors of the industry reflect the impact of the toy industry's decline in video game production. Initially, the companies that remain tend to focus into either hardware or software. And ultimately, it would allow outside media companies to take a more active interest in the video game industry.

Historical Trends: Platforms

"[Video games] are like the record business. You just don't put two and two together and say you're going to sell this many. It's entertainment."

*– Allan Alcorn, former Vice President
for Research and Development at Atari (Fincher, 1978)*

Interwoven with the history of the institutions of the video game industry has been the history of computer processors. Just as Steve Russell's *Spacewar* could not be bought and sold profitably because computers in the U.S. required government grants, the emerging video game industry has had to deal with how to make products small enough to be affordable. In the earliest days, video games could only be placed in arcades because the technology could not be made small enough for anything else (Bolter & Grusin, 2000). Indeed, the graphical sophistication in the earliest video games, such as *Pong*, were inherently limited because of the expense of the computers required for anything more sophisticated. As miniaturization occurred and microprocessors became available, the balance of profit in the industry shifted from arcades to home systems. The technology which allows a video game to be played,

Table 3.1: Video Game Generations
Source: (Campbell-Kelly, 2003; Kent, 2001)

	First Generation	Second Generation
Features	Hardware and software combined into single unit	Software separate (via cartridge or other device) from hardware (such as a console or PC)
Limits	Finite amount of information can be encoded	Modularity allows expansion via new software
Example	Atari's "Pong", arcade games	Atari 2600 and later consoles

such as a console or a personal computer, is referred to as a platform.

It is also worth noting that though arcade games make up only a small part of the current market, they still do bring in profits and have introduced a number of important video game franchises which have crossed over to the currently dominant console and PC platforms. Perhaps the best example of such games can be seen in the "Mortal Kombat" series which began in arcades and now continue on a variety of consoles

Microchips have been under development since 1971, when inventor Ted Hoff placed all the essentials needed to run a computer onto a single chip (Thurber Jr., 1995). This allowed the development of the overarching computer industry and, eventually, the flourishing of the video game industry as well. Once microchips became so cost efficient that they could be used in products the average consumer could afford, a time occurring roughly in the early 1980s, the computer industry advanced quickly, bypassing early consoles as the choice way to play video games (Haynes, 1994). Around this time, Atari and many other companies in the video game industry experienced a drastic loss in sales (Cohen, 1984). It was not until consoles found a way to take full advantage of the

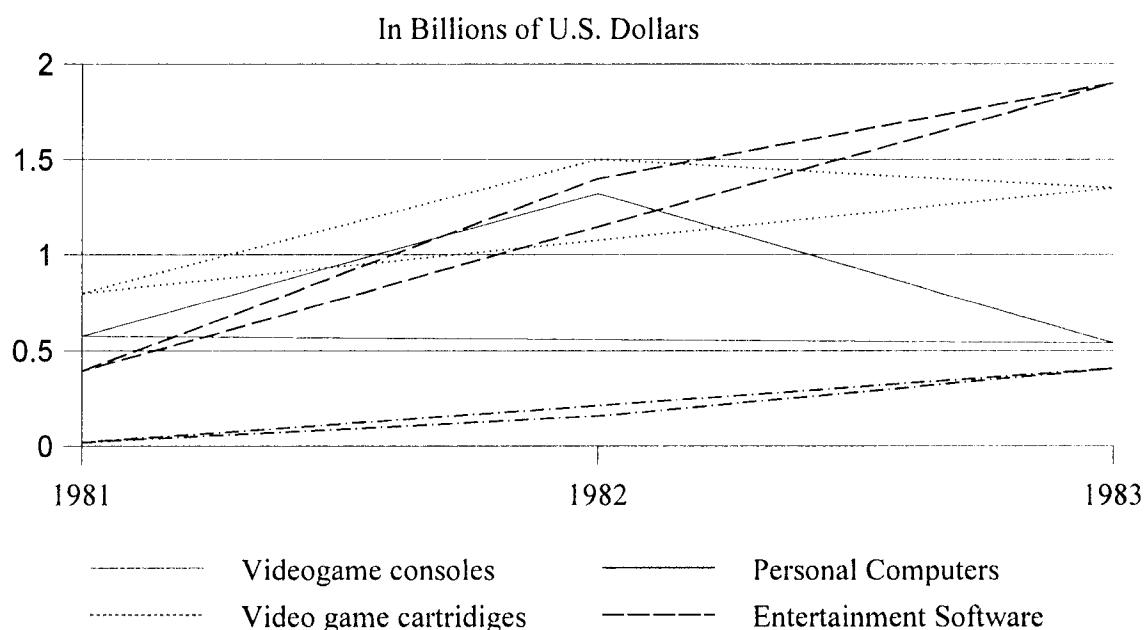
continued growth in microchip power that they again became viable (Sheff, 1993).

In the current industry, graphic power is what is primarily achieved through microchips, and as games have approached movie quality the power of these chips has become increasingly important (Snider, 2004). In the earliest days, however, it was processing power which made chips vital to the industry. The push to develop faster computers may have first influenced the consumer video game and electronic toy market more than the personal computer industry (Nelson, 1990b). Shortages in microchips in the mid-1970s posed problems for both industries and video games suffered much of the loss from the downturn ("Demand Overwhelms Video Game Makers," 1976; Fincher, 1978).

Because the microchip market took several years to stabilize, some analysts noted that it helped fuel the rise of software developers and publishers because they were able to develop along different time frames than console developers ("Colliding in a Low-price Market," 1976). Some microchip manufacturers were unable to fulfill even half of their orders in 1978, making development of new hardware extremely difficult. However, this allowed popular games to sell-out, fueling demand at a time when the industry needed recognition and profitability ("Why Electronic Games Will Be Hard to Find," 1979). Computers did not take off until close to the end of this period. The first home computers did not begin to hit the market until roughly 1978, allowing video games to move from the arcade into the home.

But it is this period of development for both video games and home computers that pushed the development of not only microchips but also semiconductors, an industry

Figure 3.1: U.S. Retail Sales of Video Games and Home Computers
 Source: (Campbell-Kelly, 2003).



which more than quadrupled between 1969 and 1979 (Wiegner, 1979). For instance, microprocessor producer Intel's profits increased more than ten-fold in the five year period from 1972 to 1977 ("The Good Life Beckons," 1977). This is significant particularly because home video game systems took several years to develop before they faced serious competition ("Hot Market in Electronic Toys," 1979). By 1990, the semiconductors and microchips industries earned almost \$100 billion each, due in no small part to the help of consumer electronics (Wiegner, 1979). Electronic games and early video game consoles using these technologies all became major sellers, particularly during the holidays. Companies like Milton Bradley saw electronic games come from nowhere to become a major part of their revenues (McQuade, 1979). Figure 3.1

provides a comparison of the rise of consoles, personal computers and entertainment software.

Once microchip technology took off, however, it became possible to make smaller, commerciallyviable platforms for home video games. In the late 1970s and early 1980s, console platforms and PCs took the lead in the market (Thurber Jr., 1995). It is significant that as PCs became prominent in the 1980s, the video game industry began to lose its reputation as a fad. As PCs became increasingly common in homes, games become one popular use for them. One of the early selling features of low-budget PCs, like the Commodore 64, was that in addition to its office and business functions, the availability of a wide variety of games (Reed & Spencer, 1986). Though they were not popular enough on their own to push the industry to the profitability it would see in the early 1990s, it is the rise of the PC game that kept the industry remotely viable during the protracted sales slump in the 1980s (Lucien, 2002). It was not until the early 1990s that console platforms again became viable in the marketplace.

Two factors contributed to the re-emergence of the console. The first was the increased availability of microprocessors and their continued shrinkage. This allowed the creation of both smaller, faster home consoles as well as the creation of an entirely new form - the handheld platform. In fact, by the early 1990s most consoles had reached a level of complexity in which their processing power was similar to the power of many mid-level PCs (Rogers, 1990). Such game platforms as the Nintendo Gameboy became extremely popular and continue to thrive today, though consoles and PCs continue to dominate the market. The second factor, however, is more significant. Beginning in

the 1990s, video game hardware manufacturers finally found themselves in a market in which they were able to more successfully complete regular upgrades and in which consumers were accepting of them. This allowed platform makers to periodically upgrade products to take advantage of new advancements and to ensure a continued stream of sales. The industry's reliance on planned obsolescence through changes in the hardware sector has allowed two advantages for the industry – a continually changing framework for design and innovation and a regular source of re-stimulating dying markets (Reed & Spencer, 1986). The inability to take advantage of this earlier not only accounts for much of the industry's early problems, but also suggests one of the difficulties early analysts of the industry may have had in predicting its success or failure.

Historic Trends: Software

"It takes a lot of cash to build a \$20 million inventory for a three-month selling season."
- Nolan Bushnell, founder of Atari
("Atari Sells Itself to Survive Success," 1976)

The second major commodity of the industry, software, has experienced some significant changes as well. But it should be noted that there are a number key features which have remained virtually constant since the industry's beginnings. The most important has been the categories of the content or genres. The early industry very quickly developed categories like those used today. While technical quality was obviously lower, there were a range of games that belie the portrayal of video games as

simply violent entertainment. In 1975, one breakdown of games included five categories:

- combat games
- shoot/targeting games
- driving games
- artistic/maze games
- sports games (Fincher, 1978).

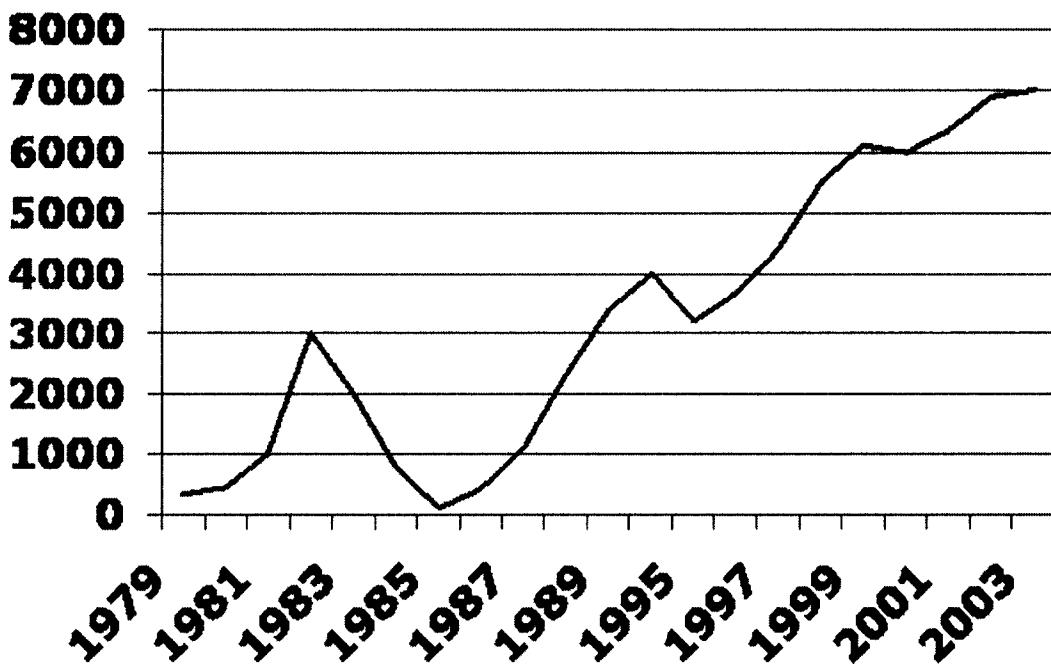
This breakdown is particularly interesting because it is similar to current genres. As will be seen in Chapter Five, the sports genre is one which has played a particularly important role in the success of a number of major industry players. Figure 3.2 traces the historic sales for the video game industry in the United States.

The most important trend seen in the software industry, however, is the trend towards consolidation and control in production. Early software producers tended to be limited not by their ability to create the programs but to package and market them ("Atari Sells Itself to Survive Success," 1976). Similarly, there were difficulties in finding suitable retail outlets for their products (Cohen, 1984). The combination of these two factors resulted in a system in which distributors were able to consolidate control over the industry. A number of sources suggest this model was drawn from the Hollywood system of production in which the locus of power is distribution (Brandt, 1987; "How A Computer-game Maker Fineses the Software Slow-down," 1985; Wasko, 2003).

From the mid-1970s on, software development in the video game industry has worked under a two-tier structure of publishers and developers. Initially the rise

Figure 3.2: U.S. Video Game Software Sales in Millions of Dollars

Source: (ESA, 2002a)



of independent developers had little to do with the interests of the publishers, but rather was a way of forcing their way into the marketplace. Unfortunately, this initially had the result of flooding the market with goods that were often knock-offs of other games at best and, at worst, were not compatible (Cohen, 1984). It was this glut of low quality goods that put the industry into a tailspin in the 1980s, put industry giant Atari into rough waters, and which needed to be dealt with institutionally in order for the industry to stabilize.

Software plays a key role in the industry. As noted already, the planned obsolescence of hardware allows for continued development of new software. This

process is costly and is, in most cases, more than any one company can hope to manage. No matter how advanced a platform's development, a failure on the software side can be fatal to the whole.

Historical Trends: Audiences

"Companies looked at the market and recognized that kids aren't the only ones playing with toys."

- Milton Schulman, former editor of Toy & Hobby World (Rice, 1979)

Perhaps the most important trend, however, pertains to the audience for the industry's products. While it has become more common to see people discuss older audiences for video games today, there has always been a high percentage of adult buyers. Just as video games began in arcades but ultimately found a sort of legitimacy by moving to personal computers and consoles, so, too, has the audience for video games expanded.

In the early days of video games, the players were experienced computer programmers. Because games required mainframes available only to government and university researchers, the players were, of necessity, educated adults. As games moved into arcades, the audience shifted. In a classic example of "early adopters," children and technologically-inclined adults adopted video games as a form of entertainment (Fidler, 1997). This shift resulted in a decline in the importance of age and education, but introduced income for discretionary spending as one of the key factors in who played games. The shift to home consoles continued this trend. Early consoles, particularly in

their first phases of development, could cost several hundred dollars.

It's with the shift to arcades that the first seeds of the idea that video games are a product for children. The view that arcades were primarily intended for children and adolescents was already well established. In contrast, the first PC games were dependent upon highly skilled users, and early systems were considerably more expensive, often relying on one's ability to assemble it themselves, making the initial audiences limited (Condry, 1984)

That these trends somehow allowed for video games to be treated primarily as children's products is interesting, but it did allow for dismissal of the industry prior to the early 1990s. The view of the industry has consistently portrayed the audience for video games through the 1980s as relatively limited. This had another interesting effect, however. As long as investors saw video games as having both a high cost and a market limited primarily to children, they remained skittish (Tapscott, 1997). The explanation for the industry's long road to success owes itself to this (perceived) relatively small audience for video games played a role in the industry's slump. Not just because of investors but because some companies began to believe it as well. If most games were targeted towards the youth audience, not only was there the danger of exhausting the sizable (for that age) but limited discretionary income. In order to guarantee continued sales, the industry ultimately had to find a wider audience.. And it had to convince the world that it had found it. Technology would serve as the primary answer. When advances allowed the industry to shift from one generation to the next, allowing high-end graphics possible on console which would in turn draw in wider audiences, would

revenues and investments again take off (Kent, 2001)

The reality is somewhat different. As early as 1979, the industry was targeting products not just to children but to adults or entire families ("Why Electronic Games Will Be Hard to Find," 1979). It was not unusual to find that even products targeted directly to children became very popular with adults ("Hot Market in Electronic Toys," 1979). Milton Bradley reported that more than half of their electronic games were purchased by people between 15 and 35 years old ("Why Electronic Games Will Be Hard to Find," 1979). This may explain why they launched their Comp IV video game system, they chose to market it in Manhattan bars while their popular game Simon was introduced via an expensive bash at Studio 54 (Rice, 1979).

The trend became so pronounced that interior designers in a number of large cities were approached to design entire rooms dedicated to electronic games. Of course while Milton Bradley produced primarily electronic games rather than video games, other companies focused primarily on video games, particularly Atari and Milton Bradley reported similar trends ("Hot Market in Electronic Toys," 1979). In fact, one estimate suggested that as many as half of all video game purchases in 1979 were by adults for adults. As Milton Schulman, then the editor of Toy and Hobby World put it in 1979, "This is the start of a whole new ball game. Companies looked at the market and recognized that kids aren't the only ones playing with toys" (Rice, 1979). By 1990 adults made up a considerable portion of Nintendo's products, always known for being heavily youth oriented (Moffat, 1990).

Another interesting point is that demand was so high for early video games that

prices were able to stay fairly high. In 1976, when there only two major console producers and the industry was just emerging, console prices typically ranged between \$60 and \$100 ("Demand Overwhelms Video Game Makers," 1976). However, the market for video games was extremely limited, with products being sold almost exclusively in the United States and Japan. It wasn't until around 1990 that video games began to be actively sold in Europe (Moffat, 1990).

Even so, production of games themselves – the software side of the industry – was in full swing. Even though the market was still growing, more than a hundred titles were produced in the early boom years for video games (Ferris, 1977). Exact numbers are difficult to obtain because the services which today track the industry, such as the Electronic Software Association did not exist at the time and have little data on the industry before 1998 (Hewwit, 2005).

The industry today continues, however, to try to make in-roads with new audiences and relies heavily on the adult audience for its profitability. More detail on the ways in which the industry has worked to address new audiences is discussed in Chapter Four.

Two companies provide an excellent examples of how the early industry formed. Atari, the first major video game company, negotiated hardware production difficulties, media tie-ins, and audience demand. In contrast, Nintendo heralded the modern industry with tight control of production and licensing and by pushing convergence and development of new platforms.

Case Study: Atari

The example of Atari is an instructive one in the early history of the video games industry. It also demonstrates a number of the key problems faced in the video game industry's advancement. Founded in 1972 by Nolan Bushnell, Atari rode the wave of the industry from the arcades to consoles only to be undone by a protean industry still searching for stability. Founded for \$250, the company grew to make \$3.2 million in sales in 1973 and \$39 million in 1975 ("Atari Sells Itself to Survive Success," 1976; Langway, Greenberg, & Harper, 1976). The company's first success was the arcade hit Pong (Cohen, 1984). Unfortunately demand for the game was so high that the fledgling company could not gather enough capital to meet production demand, and so lost considerable revenue. Capital continued to be a problem for the company as was the reliance on the toy industry's limited model of sales. In 1974, the company was plagued by bugs in their followup to Pong which cost them \$500,000 – as much as the company earned in the previous year. Bushnell explained it best, noting that "it takes a lot of cash to build a \$20 million industry for a three-month selling season" ("Atari Sells Itself to Survive Success," 1976).

Because of this, almost as quickly as it arrived, Atari faded into the background. In 1976, Bushnell sold Atari to Warner Communications. For Warner, the buy was sensible. In 1976, Atari sold another \$39 million goods and earned \$3.9 million profit, and estimates suggested that the company could sell as many as 500 million units by 1980. If that were the case, the company stood to gain \$500 million in sales ("Atari

Sells Itself to Survive Success," 1976). Briefly, this is true. In 1981, there was a video game machine in 17 percent of American households, a growth of almost eight percent from the previous year (Cohen, 1984). Atari had major success with hit games Pac Man, Space Invaders, and Asteroids (Kent, 2001). Pac Man alone sold more than two million units for the company in 1981, becoming one of the first and most impressive cultural events in the video game industry, spawning songs, merchandise, spin-off games, and even a Saturday morning cartoon show (Cohen, 1984). Of these games, however, only Asteroids was an in-house developed game; Atari had switched to licensing games from outside and re-using existing game engines to produce games in-house.

In 1982, Atari controlled 80 percent of the video game console market in the U.S., and so in some ways its position should have been unassailable. Moreover, it had signed the first deal with Hollywood in the industry's history: to make video games for the hit movies "E.T. The Extra-Terrestrial" and "Raiders of the Lost Ark" (Cohen, 1984). And while "Raiders of the Lost Ark" turned out to be a million selling video game, "E.T." became the stuff of industry legend – the game that ruined Atari (Kent, 2001).

The rights for "E.T." were licensed from producer Steven Spielberg in July 1982, just after the movie had been released. But Atari promised to have games on the shelves in time for Christmas – in some estimates as early as September – a move which left little time for testing and marketing. Atari compounded the problem by ordering five million units (Kent, 2001). The short production time, however, meant the company had to modify an existing game and spent little time developing any sort of plot,

resulting in nearly all the cartridges manufactured being returned.

The failure left Atari in a delicate spot – nearly all its focus for 1982 had been pinned to the success of “E.T.” When that failed, the developers began to raise the costs of licensing for Atari, forcing the company to pay exorbitant rates at a time when sales were already plummeting (Kent, 2001). The failure prompted Warner to rethink its venture with Atari, and in early 1983, it was sold (Nichols, 1988).

Atari’s next owner, Jack Tramiel, was better known for his success with Toronto based Commodore International, Ltd. (Nichols, 1988). Tramiel, who had been recently ousted from Commodore, hoped to restore Atari to greatness by using the same tactics he had used at his previous company. Commodore, once the leader in the personal computer industry, had made its fortune by cutting costs below competitors until they couldn’t afford to continue competing (Kafner, 1986). . Tramiel purchased Atari for almost \$100 million of his own in addition to assuming more than \$300 million in promissary notes (Nichols, 1988). One of Tramiel’s first moves was to extend Atari’s reach beyond just video games and consoles further into the personal computer arena (Nichols, 1988). The company’s computers did very well in Europe, then a secondary market for much of the computer industry, but never did well in the US, a model which continues to dominate the video game industry today (Shao, 1988). While the personal computer may have been the focus, owing to Tramiel’s background, it was not the only area. Tramiel himself recognized the importance of video games, telling nay-sayers years before Nintendo would revitalize the industry, “There will be peaks and valleys, but the category [of video games] will never die” (Shao, 1988).

But Tramiel and Atari had some obstacles to overcome, not the least of which was Tramiel himself. As the leader at Commodore, Tramiel had upset retailers in the industry – at that time primarily small independent stores selling nothing but computer goods – by moving past them to larger retailers where he could put his products on the shelves at lower costs to a bigger audience (Wise, 1985). At the time, this was a risky move as most computer sales occurred in just such small stores. However, as will be discussed in Chapter Four, today larger retail chains are where most computer and video game products are sold.

The company also faced two distinct economic challenges: trying to gain ground in the already well defined and controlled computer market and how to cut the massive debt levels Atari had accrued. Tramiel's first move was to institute massive layoffs, resulting in a streamlining of both the company and its books (Wise, 1985). Then Tramiel made an uncommon move for U.S. computer companies: he moved into the European market (Shao, 1988). Atari's personal computers flourished in the European market, becoming the fifth best selling brand even though they never did as well in the U.S. This move presaged Nintendo's later move into the European market, greatly expanding the video game industry's profitability.

Tramiel was innovative on the video game front as well. First, he resigned Atari founder Nolan Bushnell to a \$5 million contract to produce games for the company (Shao, 1988). And he advertised. In 1988, Atari doubled its advertising budget to \$10 million, focusing on the video game portion of its business. Finally, Tramiel bucked the system of publisher/developer control with growing industry giant, Nintendo. Atari

produced the first game for Nintendo's system not specifically authorized by the Nintendo. Ultimately, this move resulted in a series of lawsuits, but it also re-established the idea of independent software development in an industry that had become too guarded following the failure of "E.T." and other products earlier in the decade ("A Game of Legal Punch-out," 1989).

Tramiel's success is notable for a few reasons. First, the company was profitable again within two years of his takeover (Kafner, 1986). It was under his leadership at Atari that not only were ties between video games and the computer industry cemented, but also the retail system between video game publishers and retailers took on the current form. Finally, it was under Tramiel's leadership that Atari reignited the idea of independent game development, weakening slightly the control of publishers in the industry – something another company, Electronic Arts, was to take tremendous advantage of it beginning in the mid-1990s.

Because it is the leader of the software sector in the modern industry, Electronic Arts, or EA, will be discussed more completely in Chapter Four. But its origins trace back to the early 1980s. Originally, the company produced not just video games but also productivity and educational software ("How A Computer-game Maker Finesses the Software Slow-down," 1985; Pitta, 1990). But by the 1990s, the company had shifted its focus on video games, modeling itself on the film industry (Brandt, 1987). Rather than seek distributors, EA began to forge ties with retailers to secure shelf space in the mid-1980s as a way to insulate itself from big changes in the market ("How A Computer-game Maker Finesses the Software Slow-down," 1985). This early move

allowed the company to make the leap from developer to publisher within a decade. The company's founder and former president, Trip Hawkins, is said to have formed EA with an eye on the Hollywood studio system as a way to allow ideas for games to come from a wide variety of sources with the company in control of what games ultimately went out (Pitta, 1990). In 1990, EA published 350 titles. But only around 100 were developed in-house; the rest were licensed from other developers (Pitta, 1990). One major reason for this came from the cost of developing a title across platforms. According to Hawkins, "for every dollar it costs to develop a new title, it costs another fifty cents to move it to a new platform" (Pitta, 1990). And because EA did not produce its own platforms, but rather licensed across them, it had to adapt to the rapid number of platforms on the market. But one company and its platforms more than any other took control of the video game industry's fortunes in the late 1980s and early 1990s: Nintendo.

Case Study: Nintendo

By 1990, the video game market had stabilized. But the reasons for its resurgence were not because of the typical myths about the industry. Manufacturers were reporting steady growth not just in the number of adult players but in female players as well (Rogers, 1990). In fact, nearly 30 percent of video game players were 25 years old or older. More than 400 software titles were available, twice the number two years earlier (Wheelwright, 1990). The design of games themselves had stabilized, and the industry's structure had begun to solidify with individual workers beginning to

specialize in particular aspects of production, while the relationships between companies involved in hardware production, software production and distribution took on the form they have today (Netsel, 1990).

The U.S. market for video games had reached approximately \$2 billion, a leap of almost 30 percent from previous years (Brandt, 1990). Globally, the industry was worth almost \$10 billion (Neff & Shao, 1990). But the U.S. and Japan were the primary markets while Europe was still treated as a secondary market, receiving products up to three years after other markets (Moffat, 1990). Household penetration in the U.S. had reached nearly 20 percent while Japan had surpassed 30 percent (Shao, 1989). It was Nintendo that would take charge of expanding the video game market worldwide, establishing a subsidiary in Frankfurt (Moffat, 1990).

Nintendo was noted for its forward thinking marketing and tight control of its property. Founded in 1889 as a manufacturer of playing cards, Nintendo has grown considerably from its humble origins (*Company History*, 2005; Sheff, 1993). By the mid-1950s, the company had expanded into the manufacture of arcade games and from there it was a short leap into the video game industry. But much of the company's focus was on the Asian market, and it was not until the 1970s and 80s that it began to expand into other markets (Provenzo Jr., 1991; Sheff, 1993).

Nintendo's major impact on the U.S. video game market was much more recent. Their first products hit the shelves in 1986. By 1990, Nintendo consoles and software made up 90 percent of U.S. sales. And when game sales are counted as part of toy sales, Nintendo made up almost 21 percent of total toy sales for the same year (Peterson &

Shao, 1990). The company had U.S. sales in 1990 of between \$2.5 and \$2.7 million, roughly ten times their sales a decade earlier ("Dr. Nintendo," 1990; Moffat, 1990). In the short period between 1986 and 1990, the company sold over 40 million consoles worldwide (Nelson, 1990a). Globally, Nintendo accounted for more than 80 percent of worldwide game sales (Moffat, 1990).

Sitting at the top of the market would seem to be a blessing, but for Nintendo it spelled trouble. Having proved that there was a path to success in the video game industry, competitors began to watch the company's tactics closely. And more than one analyst suggested that with Nintendo having reached such impressive household penetration, it was possible that demand, too, may have reached the saturation point (Moffat, 1990; "The Next Step Up From Nintendo," 1990; Peterson & Shao, 1990). But while the company's control over the market has slipped, it has maintained a strong presence, particularly in the area of portable consoles. The original GameBoy, introduced in 1989, ultimately sold more than 178 million units worldwide and has spawned a number of successors and competitors (Biersdorfer, 2004).

What made Nintendo successful was more than just its technology or the its grasp of the market. Certainly their products were popular; in 1990, for example, the company agreed to a petition from the Japanese government to release new games only on Sundays as a means of discouraging truancy (Nelson, 1990b). More significant was how the company brought its products into new areas of daily life. Though certainly not the first video game company to recognize the importance of advertising, Nintendo went after it with more zeal than any other company. It is estimated that the company spent

upwards of \$60 million in advertising and promotion in 1989 (Shao, 1989). In addition, Nintendo was one of the most successful companies in the video game industry at finding ways to expand its market and control the entire process of game production. By 1989, the company partnered with Toys'R'Us to create "the World of Nintendo," a shop within a shop with all manner of products including games, t-shirts, toys and other paraphernalia (Shao, 1989). And at the 1990 Consumer Electronics Show, Nintendo's booth was not only the largest, in keeping with its sales, but also contained one of the strangest arrays of products from video games to action figures to breakfast cereals (Rogers, 1990). The cereals produced by Ralston Purina featured prominent Nintendo characters and sold well into the 1990s. The company also had a deal with PepsiCo to market its brand Slice using Nintendo's Super Mario Brothers (Shao, 1989). As a franchise, "Mario Bros." is one of the most successful examples from the video game industry. The property was spun off from an early Nintendo game, "Donkey Kong," and has sold more than 39 million copies worldwide, spawned numerous video games and a movie. One poll of U.S. school children showed Mario himself to be more popular than Disney's Mickey Mouse (Moffat, 1990).

The company also spent considerable effort to make their consoles more than just machines for games. Recognizing the possibility of the rapidly advancing processing power of consoles, Nintendo began to experiment with networking their machines. By 1989, it was possible to connect a Nintendo to a modem and use it to check stock prices and financial information (Rogers, 1990).

Nintendo's control over the products played on their systems was also

impressive. Research and development of in-house products accounted for roughly ten percent of Nintendo games; all other products were developed by licensed affiliates who were also responsible for marketing costs even though Nintendo maintained the right to veto any game from being shipped. Companies with an idea had to develop the game according to specifications from Nintendo, get the company's approval, pay for the cost of cartridge manufacturing, and agree not to supply the game to any other company (Moffat, 1990). Moreover, the company maintained strict control over the technology for making both consoles and cartridges as a way of minimizing the threat of third-party publishers encroaching on Nintendo's market (Pitta, 1990). So restrictive were the licensing agreements that even Electronic Arts, which had been selling games for 15 platforms, only licensed 11 of its more than 350 video games for Nintendo systems in 1990 (Pitta, 1990).

The company's control on the industry was so rigid that it drew attention from outside the industry as well. Nintendo's licensing policies became a sticking point in U.S. and Japanese trade agreements in 1989. Congress created a subcommittee to investigate the company's practices, ultimately resulting in both the Department of Justice and the Federal Trade Commission beginning preliminary investigations (Moffat, 1990). It was during these investigations that Nintendo's grip began to slip. Companies began to reverse engineer, releasing games unlicensed for Nintendo's systems. Among those companies were the still floundering Atari and the ascendent Electronic Arts.

The study of both Atari and Nintendo demonstrate how far back the video game industry's current structure goes. These policies of encouraged extreme concentration

of ownership, tight control of intellectual property, and the need to continually expand markets. There is also evidence of labor practices which, as will be seen in Chapter Six, still exist today. These practices have resulted in a strict division of labor and have limited the effectiveness of workers in the industry to influence production. Finally, they also demonstrate the significant and long-standing ties between the video game industry and other media industries.

Conclusion

This chapter has focused on placing the history of video games within a framework of production and consumption. By recognizing that video games have been commodities from the beginning, it becomes possible to draw valuable conclusions about their production as well as their function and impact on society.

This first of these conclusions is that video games, both in function and design, have always been more than toys. The production of video games owes much to the toy industry, particularly its production schedule. But it also draws heavily from the computer industry as well as the motion picture industry. From computers, video games adopted the use of rapidly advancing technology and planned obsolescence in order to keep its products viable. Moreover, the distinct production of video games as software is a recent phenomenon. A number of important companies in both computer software and video game software have only in the last fifteen years begun to fully differentiate. This accounts for the similarities in production and in attitudes about labor discussed in Chapter Five.

Similarly, the video game industry has modeled its labor practices, the control of its products, its relationships with retailers and advertisers, as well as how to best distribute them from the Hollywood film industry. As the industry has developed, it has recognized the need for both synergy and advertising. The example of Nintendo is particularly instructive on these points. But the current structure of publisher-developer relationships discussed more completely in Chapter Four emerged early on in the history of the industry. And like Hollywood, the industry has sought to retain tight control of its products while attempting to find new ways to synergize them more effectively. These attempts are discussed more fully in Chapter Four.

The second conclusion suggested by this history is that the industry has long recognized how untenable its existence would be if supported only by the discretionary spending of children. From its earliest days, the industry has recognized and courted adult audiences. This has helped them to survive a number of market crises as well as forcing the industry's distinction from the toy manufacturing industry. Where the industry has been traditionally weak has been in courting the global market, something that it has only begun to address successfully in the last decade.

Finally, because video games emerge from the development of computers as a means to train and demonstrate the capabilities of available hardware, they emerge as devices of communication. Further, because video games present examples of some of the first and strongest attempts at controlling content, their role as intellectual property - and as forms of communication - would seem to be unquestionable. That the capability of video games as communication devices is only now truly being explored is a loss, but

it owes itself in part - as does so much in the video game industry - on the limits of the technologies available to it.

Chapter Four examines structure and control in the industry. As such, it begins by providing a snapshot of the current state of the industry, including major players. It then examines the relationships between video games and other industries. Particular focus is given to ties between video games and film, recorded music, telecommunications, and advertising.

CHAPTER IV

STRUCTURE OF THE VIDEO GAME INDUSTRY

As discussed in Chapters One and Two, there has been little systematic research into the structure of the video game industry. As one of a number of cultural industries, video games must be seen in the light of the economics and the logics of production which drive their creation. Chapter Three provided a history of the evolution of video games as an industry from their emergence in the late 1960s from U.S. government research to a modern, concentrated media industry.

This chapter will describe the structure of the current industry and discuss the major players. It also discusses the industry's relationship with its consumers as well as to other industries will be detailed. The chapter will conclude by suggesting some of the primary logics of production which motivate the industry.

Structure and the Cultural Industries

In the broadest terms, cultural industries must deal with both the production and distribution of content. These break down into specific formulations - markets and sectors - for each industry based on historical precedents. For example, the film industry is organized into a system of production, distribution, exhibition and retail, while the recorded music industry follows a production, promotion, distribution format as well as

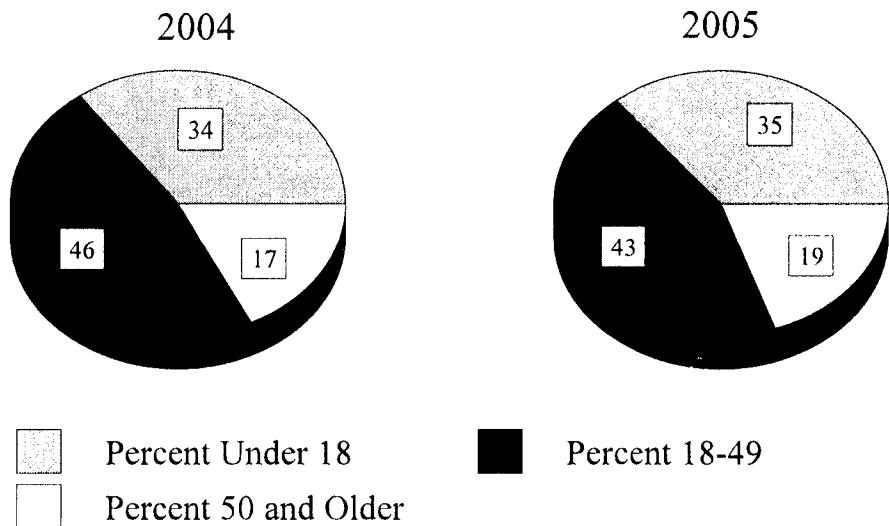
retail. In contrast, the video game industry has developed a structure which is similar to both of these industries but which has been adapted to the logics of a high tech, information industry. What this means is that unlike film or recorded music, the video game industry has incorporated as one of its logics of production a need to keep up with technological advances. In fact, it has incorporated them into its business model as a means of keeping profits up. In contrast, the film industry has been shown to be slow to adopt new technologies and, as with digital cinema, has not yet been able to find a way to make the transition affordable (Wasko, 2003). Similarly, the recorded music industry has found itself unable to adapt to advances in new technology (ESA, 2004, 2005a) and has had to resort to increased legal action to maintain its foothold. (Reuters, 2000a, 2000b; RIAA, 2000).

Video Game Consumers

As a cultural industry, one of the primary logics of production that video games must address is how to view the consumers of its products. As Chapter Three demonstrated, the audience for video games has long been more than just children. But simply having some adults - or some of any demographic - is not sufficient for a cultural industry. Instead, video games are constantly seeking ways to reach more consumers for their products. Thus, the industry seeks more adults and more members of all demographics in order to continually increase revenues.

Video game consumers are surprisingly diverse. Conservative estimates

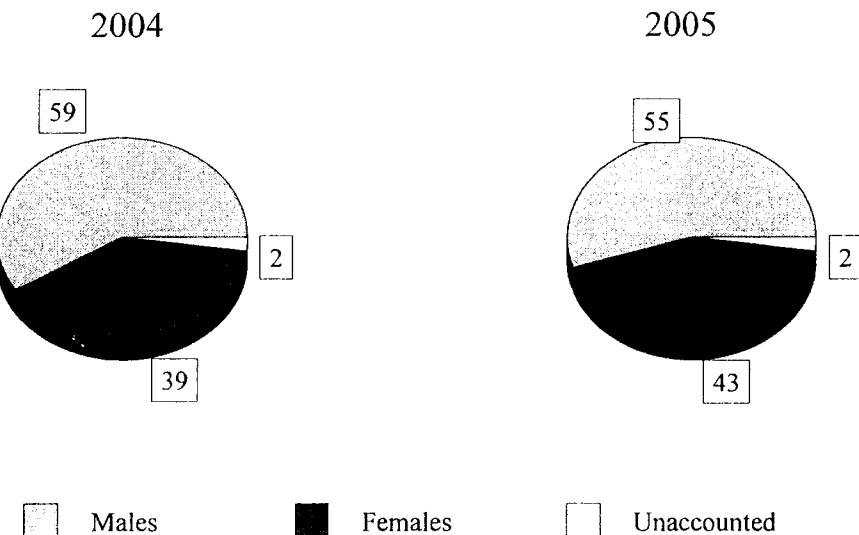
Figure 4.1: Distribution of U.S. Video Game Players By Age
 Source: (ESA, 2004, 2005a)



suggest that as many as 50 percent of Americans over the age of six play video games and approximately 17 percent of computer-owning households include someone who plays online games (Bulkeley, 2003; ESA, 2005b). Not surprisingly, video games are also tremendously popular with college age individuals. In the U.S., more than 65 percent of students indicate that they play video games regularly (Carlson, 2003b). But games are also popular with an older crowd. In the U.S., the average player age is 29 years old, and at least 17 percent of all gamers are over the age of 50 (Emeling, 2004; ESA, 2005a). Figure 4.1 provides a breakdown by age of U.S. video game players.

These trends are true for international consumers as well.. For example, a recent study in Great Britain showed that only 21 percent of gamers were children or teens.

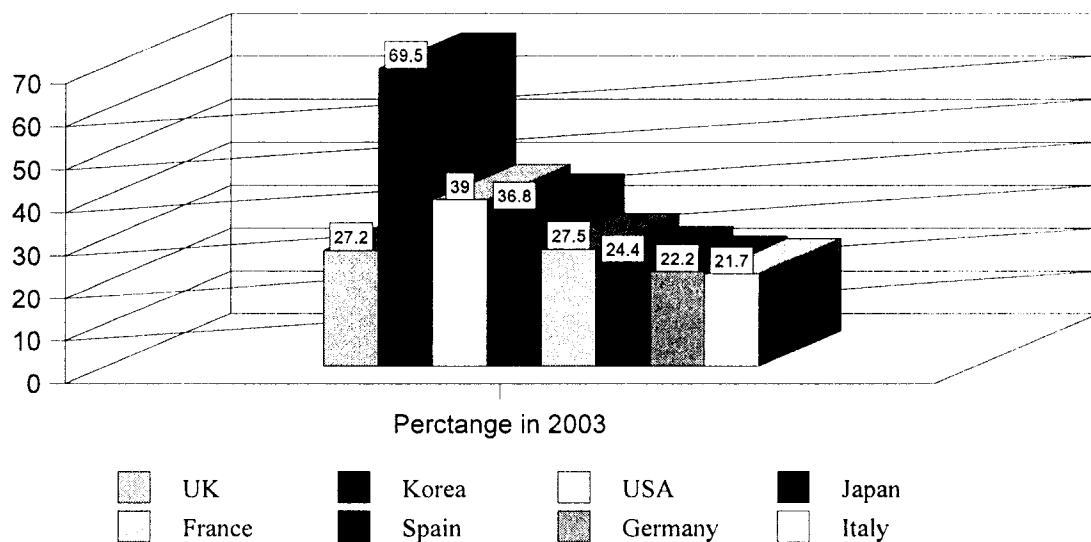
Figure 4.2: Percent Distribution of U.S. Video Game Players by Gender
 Source: (ESA, 2004, 2005a)



Almost eighty percent were age 20 or older, with almost 16 percent reporting as older than 35 (Emeling, 2004). Globally, the average age for a game player is 30 (Wingfield & Marr, 2005). Interestingly, older gamers tend to report an attraction to computer games as a means of social building between generations, a suggestion that researchers have not yet studied.

Having ensured that video games are popular with both young and old, the industry has begun to take steps to bring female gamers into the fold.. Their first targeted attempts have been to base games on other media that is popular with females, including creating games based on Disney's "Lizzy McGuire" and Fox's "American Idol" (Swett, 2003). Studies show that already as many as 39 percent of all gamers are women (Grover, Edwards, Rowley, & Ihlwan, 2005). The ages of female players are

Figure 4.3: Active Female Video Gamers by Country
 Source: (ELSPA, 2004)



striking: girls ages 6 to 17 make up roughly 12 percent of the total video games market, while women over 18 make up 26 percent (Loftus, 2003). Figure 4.1 provides a breakdown of U.S. video game players by gender, while Figure 4.2 provides a breakdown of the importance of female gamers internationally.

The chief difference between male and female gamers seems to be what sorts of games they play and how. Women tend to play more games on PCs and the Internet than men, while they make up an equal share of console players (Carlson, 2003b). Women seem to prefer games, particularly online games, which are less competitive. And the industry has been only too happy to take advantage of the trend. One online game site, Real Networks, reports that approximately 70 percent of its users are female, paying \$6.95 a month for access to their game site. Meanwhile, Lycos indicates that

more than 70 percent of their subscribers are women (Swett, 2003).

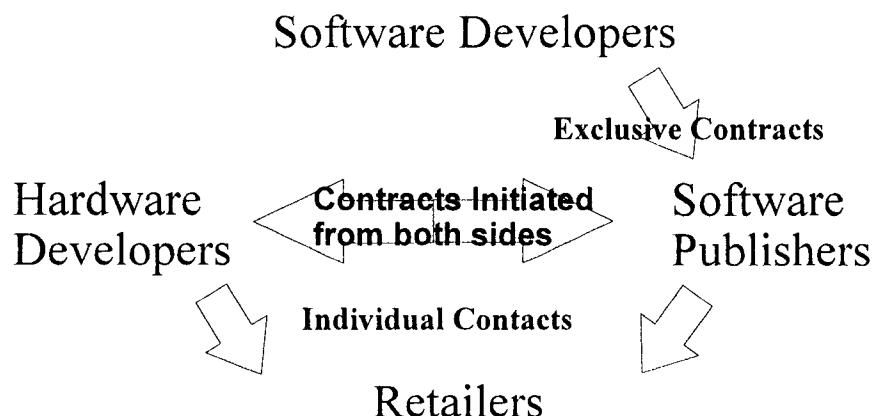
Developers have begun to target older players in other ways. Beyond trying to find television and film synergies, they have begun to experiment with ties to music labels. Some features of these deals have not only allowed music to be premiered in video games, but have also included actual musicians as playable characters. Most notable of these is the licensed “Def Jam” series of games which feature popular musicians from the label and their music (Marr, 2005). The industry has also begun to factor nostalgia into the mix, including re-releasing “classic” video games such as Pac-Man and Missile Command to target gamers with more retro tastes (Schiesel, 2005b). One company reissuing games in this fashion says the audience for its games is heavily - more than 70 percent - people ages 30-59 (Khanh T.L. Tran, 2002b).

It seems logical that much of the recent success of video games owes itself to the industry’s recognition of the true diversity of its players. These differences are reflected throughout the industry, from software production to a number of surprising responses in hardware production as well.

Video Game Industry Market Structure and Revenues

As noted previously, this reliance on new technology is a distinguishing feature of the video game industry. Advances in graphics capability, storage capacity, and convergence of technologies have resulted in a periodic upgrades of hardware. Typically this has taken place over a two to three year cycle, with the major players in the hardware

Figure 4.3: Video Game Industry Structure



sector releasing new equipment with new specifications and higher capabilities which makes the old equipment obsolete. This upgraded equipment then necessitates changes in the games themselves.

As this suggests, there are two key areas of the video game industry structure: hardware and software manufacture. In addition, the industry has developed extensive networks for promotion (and cross-promotion) and retail agreements. Moreover, the development of software, the most lucrative area of the industry, has a distinct structure which encourages the rapid, low-cost development of video game products by small firms which are then distributed or “published” by larger firms which absorb most of the profits. Figure 4.3 shows a map of the industry’s structure.

As noted previously, video games deserve to be considered as a separate industry from toys. Within the toy industry, however, they are the fastest growing segment

Table 4.1
Revenues of the Top Four Companies in the Video Games Industry, 2003-2004

All figures are in millions of U.S. dollars and represent only revenues reported from video game related business segments.

Source: (EA, 2005; Gamasutra, 2005e; Microsoft, 2005; Nintendo, 2005; Sony, 2005)

	EA	Microsoft	Nintendo	Sony	Total
2004	\$2,951.1	\$2,876.0	\$4,689.0	\$7,502.0	\$18,018.5
2003	\$2,482.2	\$2748.0	\$4,203.3	\$7,958.3	\$17,391.8
% Change	18.9	4.7	11.6	(5.7)	3.6
% of Industry, 2004	12.0	11.7	19.1	30.1	73.5

though the rest of the industry remains stagnant over the same period (Kang, 2005). In fact, if counted as part of the toy industry, video games make up more than half of the \$20.3 billion dollar profits (Elkin, 2003). And the impact of video games is only expected to grow. Current predictions suggesting that more the industry's revenues are expected to land between \$50 and \$55 billion in the next several years (Grover et al., 2005; Marr, 2005).

Globally, the impact of the video game industry is even more impressive. In 2004, global revenues for the top seventeen companies in the industry topped \$24.5 billion, with the top four companies earning \$16.7 and \$18 billion on their own (2005c). Table 4.1 provides a breakdown of the top four companies and their revenues.

Domestically, however, video games have had a rougher time, with industry totals dropping from \$10 billion in 2003 to \$9.9 billion in 2004 (Wingfield, 2005).

Domestically, the top five software companies in the industry accounted for more than

50 percent of sales; the number would be comparable to the global market if hardware sales were factored in (Grover et al., 2005). Further, in the U.S. market, software sales grew from \$5.84 billion in 2003 to \$6.75 billion in 2004 (Wingfield, 2005). The profit margin on the development of games has also remained healthy; in many cases, it approaches a 25 percent margin or almost three times that of most motion pictures (Holson, 2005a).

The transnational nature of the video game industry cannot be stressed strongly enough. Currently, there are three main product markets - North America, Europe, and Japan (Dyer-Witherford, 2002). Products in these markets are regionalized, so that a game from one region can not be used on a machine from another region. In Japan, almost 80 percent of households own and play video games (Aoyama & Izushi, 2004). Japan is the second largest market for video games behind the United States and has served as the first market for a number of games (Robert A Guth, 2001). Moreover, it is home to two of the biggest companies in the industry, Sony and Nintendo, both producers of hardware and software. The Japanese market is also notable because it has proven to be a remarkable test of which games will be successful globally (Nelson, 1990a). In contrast, the European market has tended to be treated as the least consequential, and has been - as was noted in Chapter Three - often the last market for new hardware to be deployed (2005b; Ip & Jacobs, 2004).

What is perhaps most impressive about the video games industry is that it is still largely tied to a single quarter of sales for the majority of its profits. In 2003, for example, the industry sold roughly \$7 billion in goods during the holiday quarter alone

(Richtel, 2004). The majority of these profits comes from the sale of software, particularly because many console makers have dropped their prices in recent years ("Technology Briefing: Hardware," 2002).

Hardware

The first major area of the industry is the hardware sector. Video game hardware consists of the platforms which games are played on – consoles, coin operated machines, personal computers, portable game players – and the extra equipment which aids in game play – joysticks, controllers, memory cards, network adapters, headsets, etc.

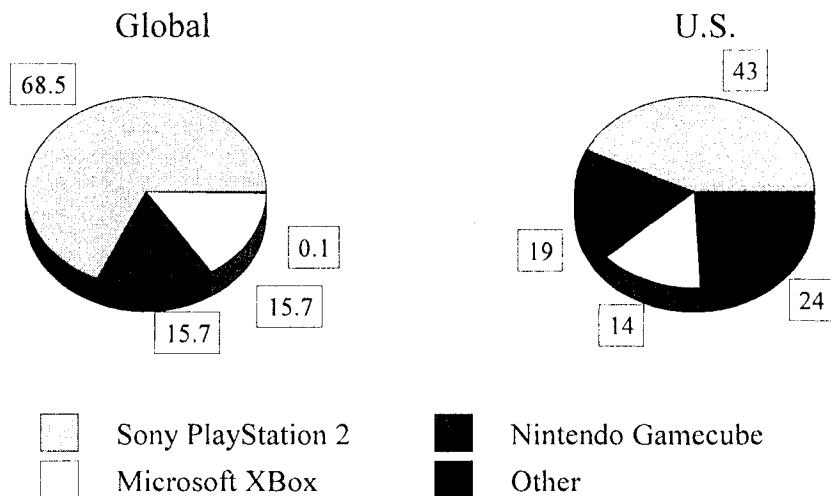
As noted in Chapter Three, the pace of hardware development is a key factor in both the development of the market and new software. This is particularly true in the case of consoles such as the Sony's PlayStation line. But there are also matters of convergence to be considered. Both personal computers and consoles are increasingly being designed as entertainment hubs, capable not just of running software but also of playing DVDs and CDs and even some forms of telecommunication. Similarly, personal computers are being designed with increased multi-media capabilities including the ability to record TV programs, to display images, and manage household functions (Gnatek, 2005). At the same time, it is in the hardware sector that new ways of bringing gamers together is being tested. Among the ideas being considered is online gaming via networked computers. Video game and technology giant Sony has already signed a deal with Butterfly.net and IBM to network mainframe computers that customers would connect to for giant networked games (Bulkeley, 2003). While the deal creates a system

reminiscent of the early days of the ARPANet, it is significant because it would devote mainframes, some of the most expensive hardware available, solely to video games. Such a network would allow as many as a million players to join in a game simultaneously.

Another example of the significance of the video game hardware sector can be seen in its impact on other media technologies. Sony's upcoming PlayStation 3 system is to feature both a new form of computer processor and the use of Blu-Ray optical discs (Robert A. Guth, Wingfield, & Divorack, 2005). The Blu-Ray disc format is one of two forms currently vying to be the format for the next generations of DVDs. The battle over formats has resulted in a number of strategic alliances in Hollywood, with no clear winner decided yet. With no clear successor to the current DVD format, and with the Hollywood majors split, the adoption of Blu-Ray by video games may well prove to be a significant impetus.

And the power of consoles - and so, their reach - is changing as well. The National Center for Supercomputing Application at the University of Illinois at Urbana-Champaign recently created a supercomputer composed entirely of linked PlayStation2's. The new supercomputer is particularly useful at rendering digital displays and as such could be of use at organizations such as the U.S. Defense Department where graphical capability is particularly important (Markoff, 2003). Markoff notes that there

Figure 4.5: Market Share by Console, 2004
 Source: (Slagle, 2005d; Wingfield, 2005)



has been a shift in recent years, with computers with the fastest capabilities being developed for consumers rather than for government or business use. This marks a stabilization in the chip market which, as noted in Chapter Three, had been a problem for the video game industry. But it also represents growth for the semiconductor industry which saw chip sales increase by almost three percent in 2002, in part due to the increased demand for gaming systems ("Technology Briefing: Hardware," 2002).

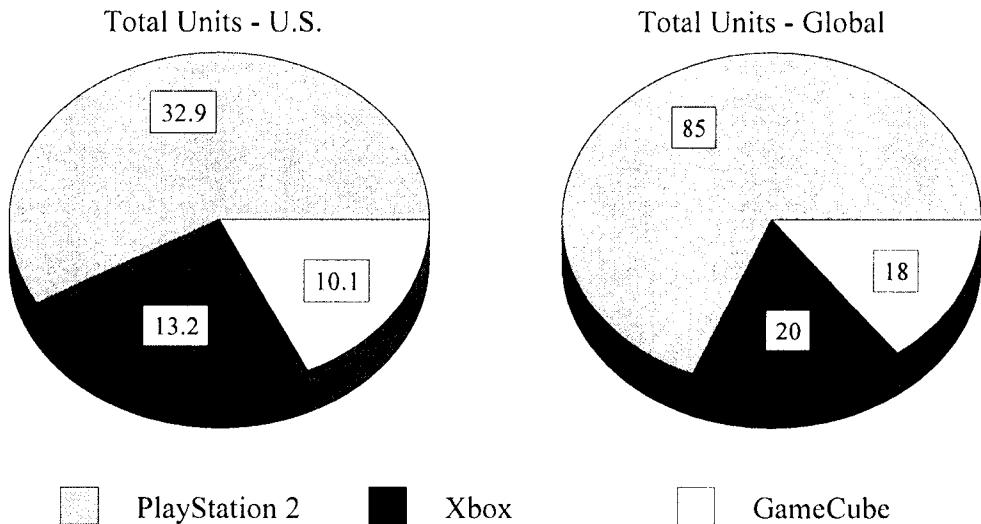
What all of these examples prove is that while the hardware sector may not be the most dynamic part of the video game industry, it has more impact than it is often given credit for. And while there are developments in all areas of the hardware sector, the most significant changes are occurring with the development of consoles. What follows is a discussion of the various platforms for video games..

Platforms: Consoles

By 2004, more than 120 million consoles of various sorts had been sold worldwide (Wingfield, 2005). While this number is impressive as an example of the reach of video games, it is still a smaller number than the number of DVD households worldwide (MPA, 2005). But Sony, Nintendo and Microsoft have new consoles in the works, and historically, each new console generation has led to an approximate 30 percent increase in the number of players (Marriott, 2005a). Figure 4.3 shows the penetration of the various consoles and other media worldwide in 2004.

All three of the major console manufacturers are currently preparing to release new platforms with expanded features. All three have considerable resources and entrenched fans, but some analysts have noted that the console market has tended to support only two consoles over any lengthy period (B. J. Pereira, 2002). But demand has been high even for the soon-to-be out of date consoles. In 2004, both Sony and Microsoft had difficulty meeting demand for their consoles; this allowed both manufacturers to maintain their prices though both had dropped their costs to a loss the preceding year to help drive demand (Richtel, 2004). While the loss certainly had an impact, console makers typically make between \$5 and \$10 in royalties per game sold for their consoles (Grover et al., 2005). In spite of this licensing income, each of the three manufacturers is currently facing major problems. Microsoft has had continual losses from the XBox, which may have been as high as \$1.2 billion per year for the company

Figure 4.7: Console Market Share in Millions of Units
Source: (Taub, 2005).



(Robert A. Guth et al., 2005). In contrast, Nintendo has had to struggle with having a young audience (B. J. Pereira, 2002). Sony's problems have been primarily internal. In 2005, the company has dealt not only with shaky finances but also with the ousting of its chairman (Robert A. Guth et al., 2005).

The current line of consoles are noteworthy for how far they've pushed the industry towards convergence as well as for their extensive catalogues. More than 2,000 games are available for the Sony PlayStation 2 (Grover et al., 2005). And the PS2 is able to play CDs and DVDs, to connect players and allow them to talk over the Internet, . It is currently the most popular console available, with more than 32.9 million units in U.S. households in 2004 (Robert A. Guth & Divorack, 2005; Slagle, 2005c). This is more than triple the number of the nearest competitor. Figure 4.7 shows the market share of the major consoles in the U.S. market for 2004.

The competition has been fierce for market share in the console sector. In 2002, both Sony and Microsoft entered into an intense price war, dropping their prices in the U.S. market to \$179.99 ("Technology Briefing: Hardware," 2002). Microsoft also spent more than \$200 million marketing its console in 2001 to help promote its release (B. J. Pereira, 2002). In spite of this, however, the XBox has lingered in second place in all markets, something Microsoft has been working to address with the release of its next model, the XBox 360.

Analysts are uncertain about how important being the first to release the next generation of consoles will be. One estimate suggests that by getting their product in the marketplace first, Microsoft will be able to move into the lead of the console market. If estimates are correct, this would propel Microsoft to near a 38 percent of the market share while Sony would fall to only 32 percent (Slagle, 2005c). In addition, the company has made moves to draw on converging technologies and to find and promote better software. The first step in this process has been to make XBox 360 games that are high definition (HD) compatible. Their estimates suggest that by 2008, more than 100 million homes in the U.S. will have HD compatible TV sets, and they want to be prepared to take advantage of this (Snider & Kent, 2005). Of the three companies' new consoles, only the forthcoming Nintendo console will not be HD compatible (Taub, 2005). Beyond this, the new console will be able to play DVDs and CDs, just like the previous version, but will also be able to rip music from CDs to a removable hard drive which can be switched among consoles for easier file sharing. In addition, it will be able to stream videos and pictures from Windows compatible devices as well as digital

cameras. The new console will also feature three processors which could make it the most powerful home computer on the market (Marriott, 2005a). This is significant because Microsoft hopes to make the XBox 360 an entertainment hub, and its navigation system will be based on the Windows system (Bajak, 2005). Similarly, the next generation PlayStation will rely on a newly developed processor called a Cell processor, developed with partner Toshiba. These new processors are reportedly ten times as powerful as standard computer processors available currently (Slagle, 2005d). Like the XBox 360, it will be able to play CDs and DVDs, connect to the Internet, and potentially record TV shows (Khan T.L. Tran, 2002).

But Microsoft has also stepped up its software marketing, with more than 900 programmers dedicated to providing software for the XBox and PCs. It is expected that the next generation of consoles will drive development for new software and demand for new hardware devices (Marriott, 2005a). But the change in console capability equals a rise in prices for software development and for new products, possibly pushing the price of games up 20 percent (Wingfield, 2005). Cost increases can be risky, however, because a sizable part of the market are children and teenagers, relying on discretionary income or the parents' spending (Gentile, 2005b).

Platforms - Hand Holds

Like consoles, hand held video games have a long and successful history. Unlike consoles, however, the industry has typically been dominated by a single player: Nintendo. Until recently, Nintendo controlled 98 percent of the hand held market

(Slagle, 2005a). Nintendo's latest product, the GameBoy DS, arrived in U.S. stores in November 2004, and the company sold more than a million units by the end of 2004. This is a rapid adoption even by current standards; for example, it took the Apple iPod nineteen months to reach the million unit level (Biersdorfer, 2004; 2005). Like consoles, hand-helds have begun to emphasize convergence of technology, including the ability to play music and even TV (Khan T.L. Tran, 2002). Users also have the ability to connect and play games with up to fifteen other players in their vicinity through wireless capability (Felberbaum, 2005a).

However, in 2005, Sony entered the hand held market, hoping to cut into Nintendo's market share. With its PlayStation Portable (PSP), the company has attempted to attract a wider audience for hand-helds. Most of the users for the GameBoy line have been children and teens, but Sony is hoping to attract an older audience. In its first month in Japan, Sony estimated sales of close to half a million units (Slagle, 2005a). In the U.S., estimates suggest that more than 475,000 units were sold in the first week alone (Snider, 2005). The initial production for the U.S. market was one million units, suggesting another adoption of technology from video games that is much more rapid than in other industries (Felberbaum, 2005c; Kageyama, 2005). As with most of its hardware, Sony first shipped in Japan, then in the United States, and will ultimately make the PSP available in Europe late in 2005 (Dawtrey, 2005). Like the GameBoy DS, the PSP has online multiplayer functions built in (Felberbaum, 2005a). But Sony has also been concerned with the losses it has given up to the iPod, and so the PSP is functional as an MP3 player as well. Part of the company's strategy has been to

decrease its control over proprietary content, allowing the PSP to play a variety of music formats in order to be more competitive (Kageyama, 2005). Initial game production for the PSP included 15 games by software giant, Electronic Arts, as well as a number of mini-DVDs (Flynn, 2005)

Platforms: Mobile Gaming

One of the most interesting developments in the hardware sector has been the expansion of video games beyond consoles, PCs, and hand helds. The fastest emerging market has developed with video games and cell phones and online markets. In the U.S. there are roughly 190 million cell phone users, but in spite of the high adoption rate, only about 35 percent of the cell phones in the U.S. are capable of playing video games (Noguchi, 2005; Richtel, 2005c). For the cell phone industry, any application which encourages more user time - whether browsing the web or playing games - pushes the profits of the industry up (Marriott & Hafner, 2005). Current estimates project mobile gaming revenue at close to \$1.1 billion annually, with, the vast majority of mobile gaming revenue from Japan and Korea. By 2008, the market for mobile gaming is expected to reach between \$8 and \$13 billion annually (Grover et al., 2005; IGDA, 2005a).

Other Technologies

In addition to the variety of platforms, there is a substantial market for accessories for all of the platforms. Typically, accessories are licensed individually

with the hardware manufacturers as a way to take advantage of platform capabilities. Common devices include speakers, microphones, wireless controllers, dance pads, and even extra power cords (Herold, 2004). A recent attempt at convergence has been the creation of specialized video cameras for console platforms, such as the Sony EyeToy. These devices allow video game consoles to be used for a wide variety of other pursuits, including capturing video and communication (Wadhams, 2004). However, once these devices are created, it is typically up to software developers to find ways to take advantage of them, which has limited the profitability of the hand held sector (Herold, 2004). Currently, hardware development for most of these other technologies, including mobile phones, occurs by small, independently owned companies. However, the rest of the hardware sector is dominated by three companies: Microsoft, Sony, and Nintendo.

Microsoft

Washington based Microsoft is the most recent company to enter the video game industry. Known for its operational and productivity software development, the company has had less success with its attempts at video games. The company both manufactures platforms and publishes video games in addition to its other ventures. Its Xbox platform was launched in 1999 and the company has struggled to make a profit from its video game ventures in spite of the success of its *Halo* franchise. In 2005, the company released the version of its console, the Xbox 360, which the company hopes will become a home entertainment hub. Its success may hinge on its use of the company's Windows operating system. Its ten person board of directors has ties to JP

Morgan, AT&T, BMW, and a number of investment banks. The company was founded in 1975 (Hoover's, 2005; Microsoft, 2005).

Sony

An electronics industry giant, Japanese based Sony has dominated the video game console sector for more than six years. But before the company was known for video games, it was famous for its electronics including the Walkman, personal computers, and semiconductors. In the mid-1990s, the company expanded into media. Through its purchases of film studios, the company became one of the giant cross-industry conglomerates dominating the global media landscape. Its media holdings include Epic and Columbi Records, Sony Pictures, and Columbia TriStar. Sony Computer Entertainment, which manufactures the PlayStation line and publishes games for the company, was founded in 1993 (Hoover's, 2005; Sony, 2005).

Nintendo

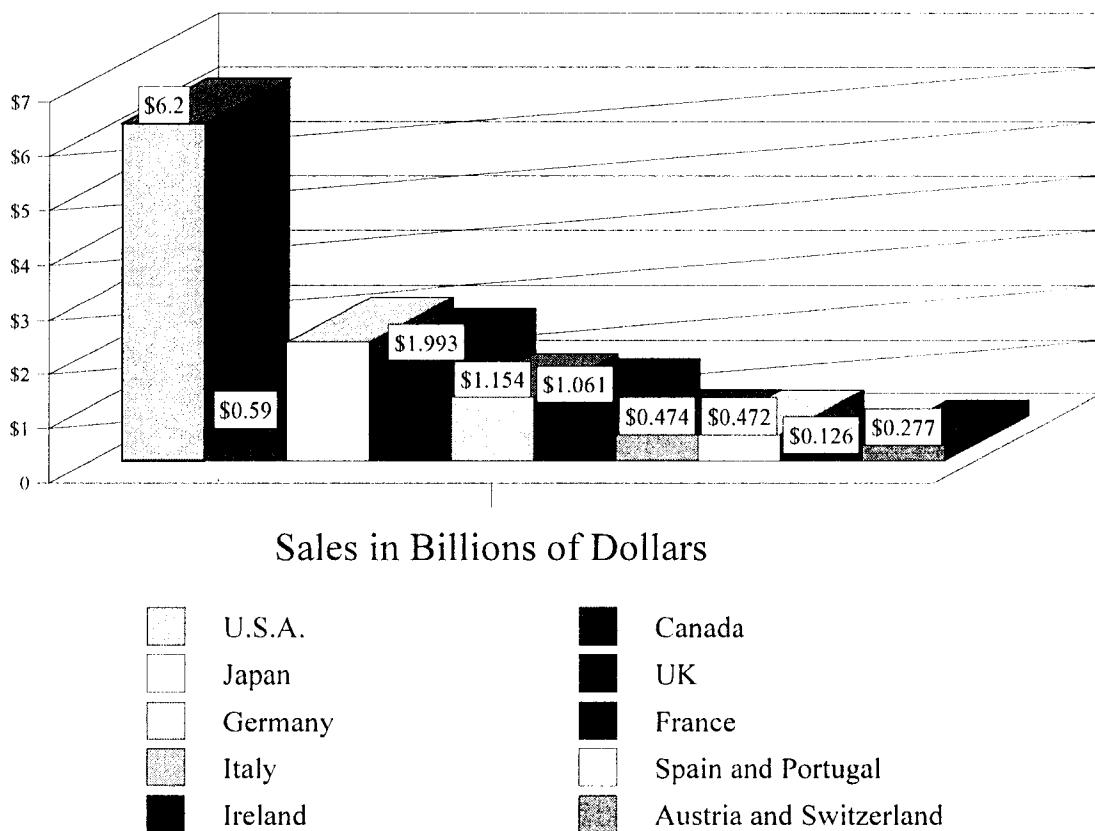
Founded in 1933, Nintendo has worked its way from an arcade industry giant to one of the leaders in video game platform production. Its GameCube console is struggling with Microsoft's Xbox for second place globally, behind Sony's PlayStation systems. But its GameBoy systems, including 2004's GameBoy DS, lead the hand held sector. In addition, Nintendo publishes video game software, and has focused on the children's market (Hoover's, 2005; Nintendo, 2005).

Software

As has already been seen, software currently provides a majority of the revenues for the video game industry. But because the software sector is relies on innovation in hardware, adoption of a three to five year production cycle for software has radically altered the software side of the industry. Increasing graphics capability, now approaching movie quality, has lengthened development time and dramatically increased the cost of production (Snider, 2004). The rising cost of production, as well as marketing costs, have consolidated power in the hands of a few large software publishers, forcing smaller companies - or developers - to fall into line (Dyer-Wetherford, 2002). In the U.S. alone, more than 248 million video games were sold in 2004, enough to put almost two video games in each household for that year alone. Almost sixty percent of these sales were for consoles while almost 20 percent each went to PC and portable sales. Figure 4.4 provides a comparison of software sales by sector for 2003 and 2004.

A closer look at the best selling games provides a snapshot of power in the industry. Between October and December 2004, for example, two games sold more than 3.3 million units in the Christmas selling season - *Halo 2* and *Grand Theft Auto: San Andreas* (Richtel, 2004). Other estimates suggested that *Halo 2* sold more than 5 million units by the end of 2004, an impressive feat as it was only available for the XBox console (Fritz, 2004). Another game, *World of Warcraft* sold more than 240,000 units in its first twenty-four hours of sales in the U.S., Australia and New

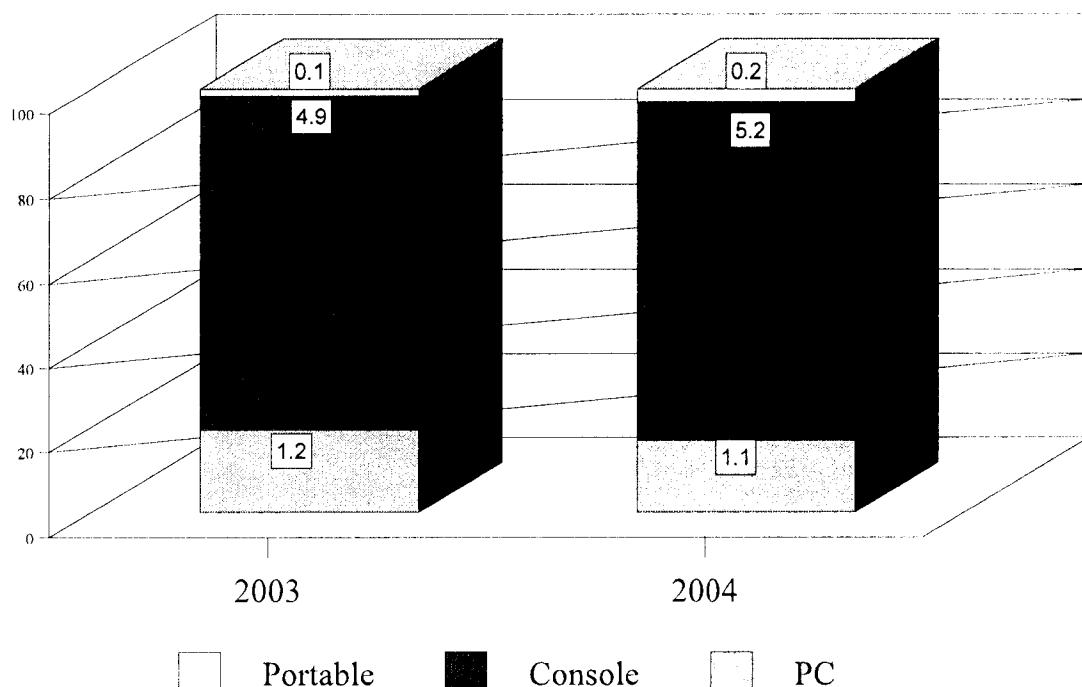
Figure 4.7: 2004 Software Sales by Country in Billions of U.S. Dollars
 Source: (Croal & Itoi, 2004; ELSPA, 2004)



Zealand. These numbers are impressive because in the video game industry only five percent of all games sell more than a million units. Equally impressive are EA's 27 games that broke the one million mark in 2004 (Grover et al., 2005).

Part of the industry's success is due to its cultivation of successful franchises. Microsoft's "Halo" franchise, which originated in 2001, has sold more than 12.8 million units and earned the company more than \$600 million in revenue (Brodesser & Fritz, 2005). It was so highly anticipated that prior to its release, the second title in the series,

Figure 4.8: Software Revenues by Platform in Millions of U.S. Dollars
 Source (ESA, 2005a)



“Halo 2” had sold more than 1.5 million units in the U.S. alone prior to its release (Oser, 2004). It has sold more than 6.3 million units since its release (Marriott, 2005a).

“Halo 2” and “Grand Theft Auto: San Andreas” sold almost as many units as all other top ten selling titles combined (H. Newman, 2005). Table 4.2 details the best sellers and their publishers for 2004.

Like the hardware sectors, software is an increasingly international business. In

Table 4.2: Top Ten Video Game Tittles, 2004
Source: (NPD, 2005)

Game Title	Platform	Publisher	Release Date	Average Retail Price
Grand Theft Auto: San Andreas	PS2	Take 2 Interactive	10/2004	\$49
Halo 2	XBox	Microsoft	11/2004	\$52
Madden NFL 2005	PS2	Electronic Arts	08/2004	\$49
ESPN 2K5	PS2	Take 2 Interactive	07/2004	\$19
Need for Speed: Underground 2	PS2	Electronic Arts	11/2004	\$48
Pokemon Fired w/ adapter	GBA	Nintendo of America	09/2004	\$32
NBA Live 2005	PS2	Electronic Arts	09/2004	\$33
Spider-Man: The Movie 2	PS2	Activision	06/2004	\$43
Halo	XBox	Microsoft	11/2001	\$29
ESPN 2K5	XBox	Take 2 Interactive	07/2004	\$19

1998, for example, Japanese software made up almost 50 percent of the software sold in the U.S. market, although this number dropped to 29 percent by 2004, because of moves by European, Canadian, Australian, and even Chinese software designers (Croal & Itoi, 2004). In China, video games have become increasingly popular, in spite of their unsanctioned status. Games sales experienced a 56 percent growth rate between 1998 and 2003, a figure representing only legitimate software sales in a country where pirated

Table 4.3: Top 20 Video Game Publishers, 2005

Source: (Donovan, 2005; Hoover's, 2005)

Publisher and year formed	Revenue in millions of Dollars	Releases in 2005	# of Internal Studios	Percentage of Externally Developed Titles	Employees
EA (1982)	\$3,129.0	126	10	17	6,100
Activision (1979)	\$1,405.9	76	10	63	1,324
Microsoft (1975)*	\$39,788	20	6	60	57,000
Nintendo (1933)	\$4,869.4	69	7	32	Unavailable
Sony Computer Entertainment (1993)*	\$66,912.0	41	14	37	162,000
Ubisoft (1986)	\$618.9	65	13	55	2,352
Konami (1973)	\$2,427.5	78	6	15	11,047
THQ (1989)	\$756.7	94	11	55	796
Sega Sammy Holdings (1952/1975)	\$4,794.7	75	7	31	5,047
Take Two Interactive (1993)	\$1,127.8	42	13	67	1,435
Namco (1955)	\$2,491.2	35	2	51	Unavailable
Vivendi Universal Games (2000)*	\$29,026.0	43	6	72	55,451
Atari (1983)	\$395.2	67	6	70	492

Table 4.3 continued

Publisher and year formed	Revenue in millions of Dollars	Releases in 2005	# of Internal Studios	Percentage of Externally Developed Titles	Employees
SCI/Eidos (1988/1990)	\$55.7	35	5	51	139
Capcom (1979)	\$498.6	39	4	21	1,206
Square Enix (1975)	\$598.3	19	5	21	1,412
Bandai (1950)	purchased by Namco	49	3	51	Unavailable
Codemasters (1986)	\$110.1	17	2	29	390
Midway (1988)	\$161.6	22	6	32	700
LucasArts (1982)	Unavailable	9	1	89	Unavailable

* indicates that information given is for the parent company rather than the subsidiary

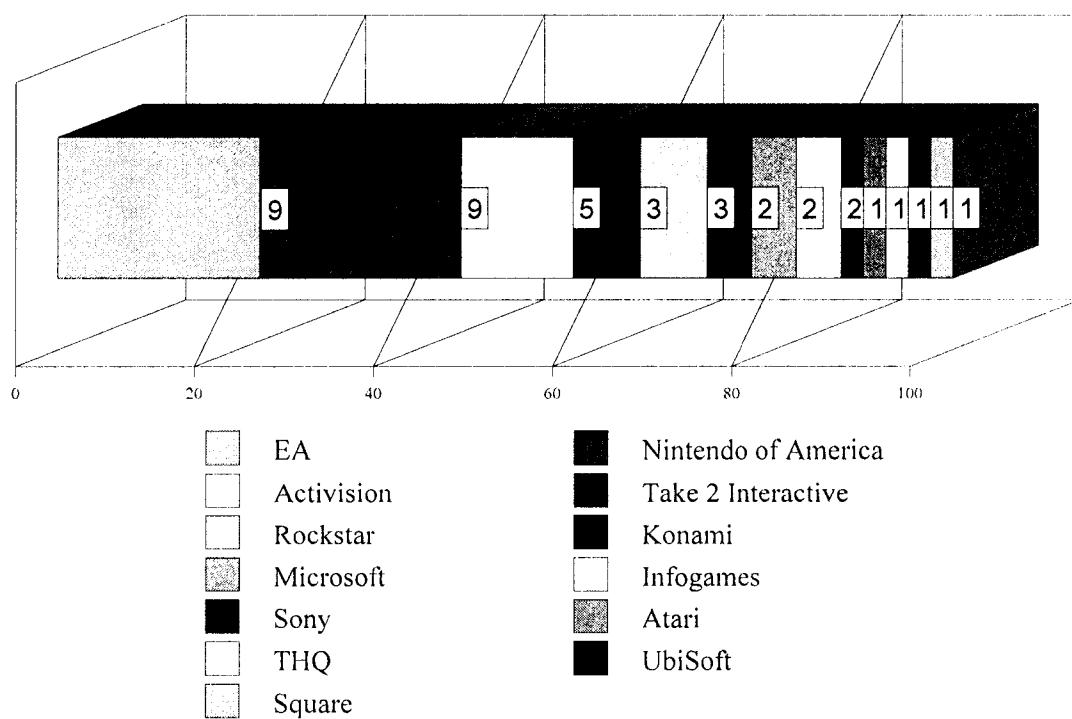
games are the norm (*Executive Summary: Toys And Games in China, 2005*).

Software development also owes to the relationship between hardware and software publishers. It is not uncommon that a hardware manufacturer will license a publisher to create games based on their systems architecture rather than allow open source development (Dyer-Witherford, 2002). Such ties are crucial as the time and budget to develop games have drastically increased. In 1983, the hit game “Frogger” cost roughly \$5,000 to develop; however, a top game in 2000 could cost more than \$1

million to develop and take up to 18 month (Delaney, 2003; Zito, 2000).. Development for major games can now take between 18 and 24 months (Levine, 2005d). Termed “Triple A” titles, best selling games can also cost between \$10 to 20 million to develop (Richtel, 2005b). And with the next advances in hardware due to be released in 2006, some analysts have suggested that game prices may rise another \$3 to 6 million (Dec, 2005; Taub, 2005). Others have suggested that development costs could triple (Gentile, 2005b). As Chapter Six will demonstrate, the labor required to create games is likely to drastically increase, requiring ever larger teams of developers to create each game (Robert A. Guth et al., 2005).

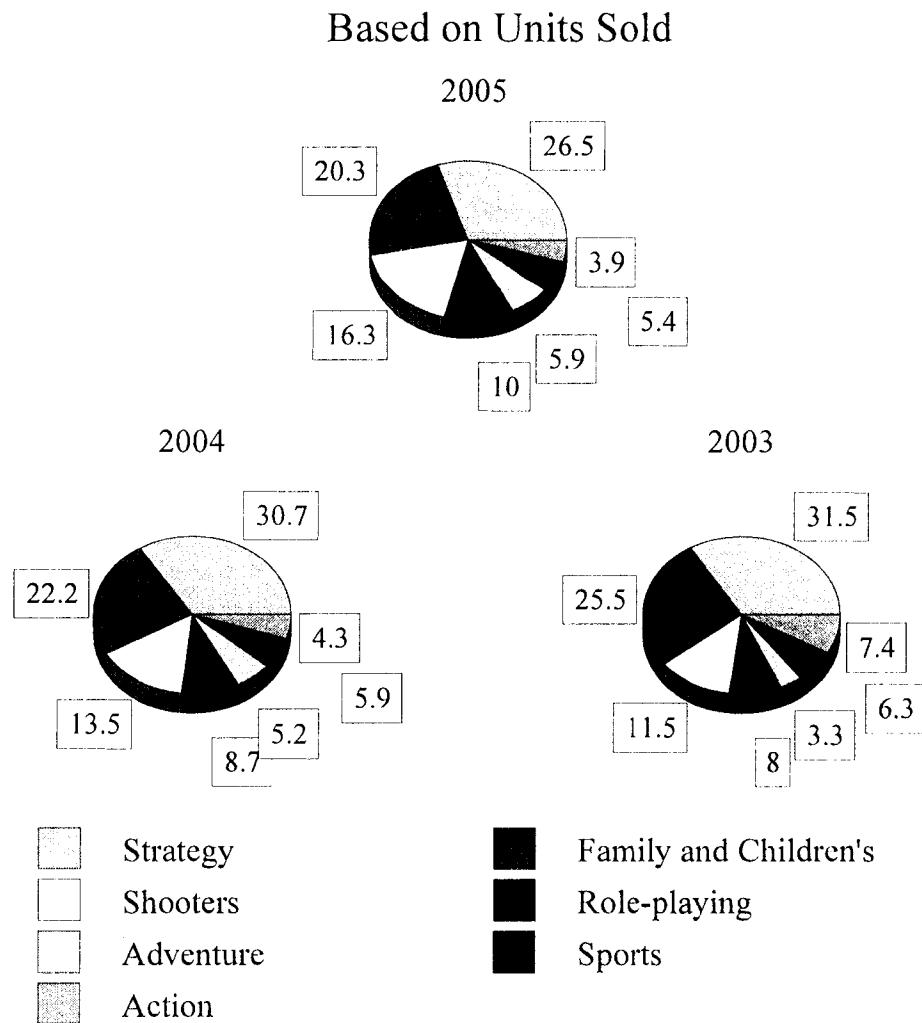
Microsoft, which produces both its console and a considerable amount of software, has begun to cut back production of its own in-house games in an attempt to try and connect with innovative software developers. They've issued special developer packs and signed deals with well known Japanese developers in an attempt to increase their profitability (Robert A. Guth et al., 2005). One of their biggest moves was to sign a deal with Hironobi Sakaguchi, the creator of the *Final Fantasy* series, to design games for the next generation XBox (AP, 2005b). The games created will first be made available in Japan, in an attempt to increase Microsoft's sales in a market where they've been doing poorly. Having a marketable name - either a game creator, development team, or even publisher - can make the difference in a game's success. Microsoft has had fewer major selling games than they would prefer, which has limited the company's

Figure 4.9: Percentage of U.S. Top Ten Titles by Publisher, 2001-2004
 Source: (NPD, 2002, 2003a, 2004, 2005)



effectiveness. Figure 4.9 breaks down the best sellers from 2001 to 2004 by publisher. Licensing is typically arranged between the publisher and hardware manufacturers. This means developers must negotiate, or more likely, be sought out by the more powerful publishers (Williams, 2002). This has allowed most publishers to develop and license games across platforms (Dyer-Witherford, 2002). And, as Chapter Five will detail, publishers also negotiate cross-industry licensing, particularly with the global film and recorded music industries (Fritz, 2005c, 2005d). One of the most notable examples of this is Disney's recent acquisition of software developer Avalanche as well as its creation of a studio in Vancouver (Marr, 2005). The Vancouver

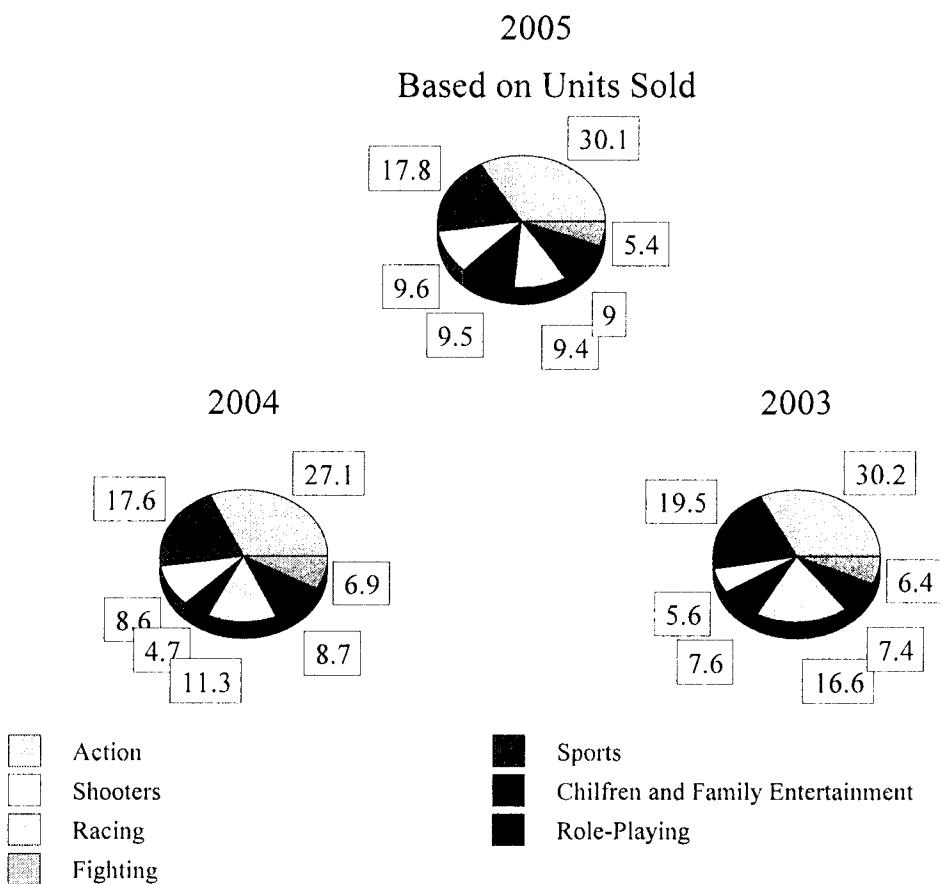
Figure 4.10: Best Selling PC Games in U.S. by Genre
 Source: (ESA, 2004, 2005a; IDSA, 2003)



studio was lured away workers from Electronic arts (Fritz, 2005c). It is Disney's hope that rather than licensing its products to video game publishers, it will ultimately become one itself, making 80 to 90 percent of its video game revenues in-house (Marr, 2005).

Like feature films, revenue within the industry has expanded beyond basic sales. Software publishers have taken a page from the Hollywood book, working to

Figure 4.11: Best Selling Console Games in the U.S. by Genre
 Source: (ESA, 2004, 2005a; IDSA, 2003)



license their products in as many other formats as possible including movies, books, TV shows, and merchandising (Bloom, 2001; Cooper & Brown, 2002; Elkin, 2003; Molledina, 2004a; Wingfield & Marr, 2005). Licensing deals are increasingly competitive and costly. In early 2005, EA spent more than \$800 million to lock up an exclusive 15 year deal with ESPN (Grover et al., 2005).

Software Genres

Currently, most video game revenue comes from the sale of games. In addition, the industry has begun to gather revenue from subscriptions to online games, most commonly the Massive Multi-Player On-line Role-Playing Game (MMPORG). In these games, players are often willing to pay monthly subscription fees in addition to the initial purchase of the game (Irvine, 2004). These games let players create characters - or avatars - that they navigate through elaborate, expansive worlds while interacting with other players. This results in continued work for game designers who must keep the world updated and working (Schiessl, 2005a). But such games are risky and costly to develop; if the popularity isn't there, it can spell big losses for both the developer and the publisher (Delaney, 2003; Levine, 2005a; Slagle, 2005b),

One way some developers have tried to work around this has been to re-release old best sellers for new platforms; this has dropped the cost of development while helping to ensure that they're marketing something likely to sell. French software developer Infogames has begun to reissue old Atari games for the latest platforms. The cost to develop these older games has been a little over \$200,000 (Khanh T.L. Tran, 2002b).

The industry divides games into a very particular series of genres, which shift slightly depending upon the platform being considered. Figure 4.10 and 4.12 break down the genres and how they sell in the console and PC markets. There are a number of distinctions which seem to influence how genres sell. For example, role-playing

games are much more popular in the PC market. This seems to be related to the fact that it is much more common for PCs to be connected to the Internet, though consoles have long had that capability. Surprisingly, the genre which draws the most revenue is not the action genre.

Sports games have become one of the most important genres available, with licensing deals between major leagues and organizations generating tremendous revenue(AP, 2005a; "Business Brief -- Sega Corp.: Alliance Is Formed With ESPN To Improve Sports Video Games," 2002; Fritz, 2005a). For software leader, EA, sports have helped propel the company to its dominant position by providing stable, consistent selling games such as the Madden series of football games (Wahl, 2005). EA's licensing deals with the NFL, ESPN and others have helped to insulate the company even from setbacks such as shortages of hardware shipping (Flynn, 2005). Statistics show, in fact, that EA is "the fourth largest capitalized software maker in the world behind Microsoft, Oracle, and SAP" (Lowenstein, 2005).

Just as the hardware sector is beginning to explore other forms of games - particularly portable and mobile phone games - so is the software industry. One area that is being explored is online games. These are games for which consumers purchase only access - there is no additional software required that cannot be downloaded. As indicated by figures 4.11 and 4.12, very little revenue has been made from games accessible only through Internet. In 2004, these games - referred to in the industry as casual games - cost much less to create. Though their present sales are small - representing only about \$250 million - they are becoming increasingly popular. One

example is a game called *Diner Dash*, which has been sold exclusively on the Internet. It has become one of the most requested games for downloading from a number of sites, including Yahoo Games, Real Arcade, and Shockwave.com. Presently it has sold more than 50,000 units at \$20 per game, and it continues to sell almost 1,000 copies per day (Marriott, 2005b).

One reason that casual games are gaining more attention is the ease with which they can be transferred to mobile platforms, particularly cell phones. In 2004, software for mobile games earned revenues of almost \$204 million in the U.S. (AP, 2005c). Globally, however, one study suggests mobile games have sold more than 42.3 million units with revenues of \$1 billion (Gamedaily.biz, 2005). This has prompted a number of Internet companies, including Internet giant Yahoo!, to enter the mobile games business (AP, 2005c). Mobile games are also significant because customers are typically billed a monthly fee per game, usually between \$1.50 and \$3 per month, with somewhere between 25 and 35 percent of the profit going to cell phone carriers (Richtel, 2005c).

The last area of software development relies on the same premises as casual games - cheap production, simple gameplay - but has focused on integrating the educational and ideological potential of video games. Dubbed "serious games," these are pieces of software which are developed for political or training purposes (R. Wallace, 2004). Examples of these games include "Dean for Iowa," a game used in the Iowa campaign for Howard Dean's Presidency, and "VRPhobia," a game created to treat phobia and other disorders based in cognitive theory. Because these games come from

such varied sources, there has been little success in tracking the costs of development, but they are likely to become increasingly common.

Electronic Arts

Based in Redwood City, California, EA is the world's largest video game publisher. Founded in 1982, the company has seen the industry rise and fall. In its early years, the company produced both productivity and video game software. But in the early 1990s, it refocused, making video games its priority. Unlike the other three industry leaders, it has focused solely on the development of video games. However, because it is not tied to any single platform, it has capitalized on the competition between the three console giants as well as for personal computers (EA, 2005; Hoover's, 2002, 2005).

EA has used its dominance to take the industry lead in licensing and merchandising deals. It has long-term arrangements with the NBA, NFL, ESPN, Major League Baseball, the Collegiate Licensing Corporation, and a number of Hollywood studios. It has also made hit games based on the "James Bond," "Lord of the Rings," and "Harry Potter" franchises. As of 2005, the company's board of directors is made up of nine men. Among them, there are ties to major universities; CBS, Warner and Polygram records; the Omnicom Group, a leader in advertising; Babbages, Inc, a software retailer; General Electric, AOL, and Young and Rubicam advertising (EA, 2005; Hoover's, 2002, 2005).

Activision

Santa Monica based company Activision is one of the oldest software publishers in the industry. Founded in 1979, the company published a number of games for the earliest video game consoles including the hit game Pitfall for the Atari 2600. It's string of successes have continued, with games like Doom, Tony Hawk's Underground, and Call of Duty. The company has also managed a number of impressive licensing agreements for major media products. It has published games based on LucasArts' "Star Wars" franchise, Sony's "Spider-Man" movies, and DreamWorks' "Shrek" (Activision, 2004; Hoover's, 2005).

The company has studios in the United States, the United Kingdom, France, Germany, and Australia. Its eight person board of directors includes one woman. The board has ties to Proctor and Gamble; a number of investment banks; Four Kids, Inc., a company focused on the licensing and merchandising of children's products; Warner Music Group; and Random House (Activision, 2004; Hoover's, 2005).

Ubisoft

French software publisher Ubisoft is one of the most successful software publishers in the world. The company was founded in 1986 and has offices in more than 20 countries. Among the company's hits are *Prince of Persia: the Sands of Time*, *FarCry*, *Myst*, and *Tom Clancy's Splinter Cell*. In early 2005, Electronic Arts purchased a 20 percent stake in the company. The company currently has development studios in

Austin, Texas, Barcelona, Bucharest, Casablanca, Shang-hai, and Paris among other locations. Information about the company's board of directors was not available (Hoover's, 2005; Ubisoft, 2004).

Konami

Japanese based Konami is one of the more diversified companies in the software publishing sector. Founded in 1973, the company has gone through a number of changes over the years. In addition to publishing video game titles for most platforms, the company is also one of the major developers of arcade games. But it also has interests in sports equipment, electronic toys, and casino gaming equipment. Among its hit titles are *Metal Gear Solid*, *Castlevania*, and *Dance Dance Revolution*. The company has studios throughout Asia, Australia, and North America. Was Information about the company's board of directors was not available (Hoover's, 2005; Konami, 2004).

THQ

California based THQ was founded in 1989. The company makes games across platforms, but has had great success making games for hand helds. In part, this is due to the company's agreements with kid friendly companies like Nickelodeon and Pixar. The company has also produced products for Mattel's Hot Wheels, Disney's "The Incredibles," Nickelodeon's "Sponge Bob Square Pants," and for the World Wrestling Entertainment. The company's six man board of directors has ties to a number of investment banks, Target Corporation, and Liberty Media (Hoover's, 2005; THQ, 2004).

Arcades

As video games have moved increasingly into the home, the arcade itself has gone into decline in the U.S.(Vogel, 2004), and there is little cross-ownership by any of the major hardware or software developers and the arcade sector. While figures for the sector are hard to come by because many arcades are privately owned by small companies, one example is particularly telling. Arcade profits at college campuses, where arcades were once hot spots, have fallen steadily over the last decade. At the University of California Berkeley campus, profits have dropped from \$400,000 a year to just over \$50,000 while UCLA's arcade profits have fallen from roughly \$700,000 to just under \$250,000 per year (Rooney, 2003). But it is not uncommon for arcades to be used as test markets for popular games (McCallister, 2005). This is particularly true in other countries where arcade games have maintained their popularity over the past decade. Nolan Bushnell, founder of Atari and one of the initial investors of Chuck E. Cheese Pizza Time Theaters, claims that video games have become about “social isolation” (Richtel, 2005a). This has led Bushnell to create a new series of restaurants with games available at the tables.

Bushnell's attempts to create a new family friendly arcade experience are not the only new visions for the industry. Increasingly, attempts are being made to produce social spaces for older game players. One example is Playdium.net, which opened in College Park, Maryland, in early 2005. A local area network (LAN) was combined with first person shooting games to connect players (Bowen, 2005). Playdium.net relies on

tournament gaming for its profits, but players can also purchase game time in half-hour increments. This is similar to another major game center, Chicago's Battletech Center, which attracts players with high end video games that cost as much as \$16 per hour (Nelson, 1990b). Playdium.net's founder hopes business recruiters and government agencies will begin to use games as a way to screen applicants, a market Playdium that may be able to capitalize on (Bowen, 2005). Such businesses have been more successful in larger urban areas. One such business, which draws on both Playdium's networked gaming model and on the high end games featured at Battletech Center, is Dave and Buster's, an upscale dining and gaming establishment targeted at adults. With more than 44 locations in the U.S. and Mexico, Dave and Buster's has taken the franchise model of restaurants to create an alternative to the single owned arcade model (*Dave and Buster's History*, 2005). An interesting spin on these business models can be found in Eugene, Oregon, but rather than relying just on tournaments and in-store play, Big City Gaming has also incorporated game rentals and sales into their business model (Field, 2005).

Retail

Like the arcade sector of the industry, retail has remained largely unaffiliated with the major producers. The one notable attempt by one of the video game majors to enter into retail has been Nintendo's opening of retail stores. The number has remained small, however, and the success of the stores remains to be seen (Rosenbloom, 2005). But like the film industry, rental revenues of games are becoming increasingly

significant and so it seems likely that the retail sector may receive more attention from hardware and software publishers in the near future. Currently, the largest video game retailer is Gamestop, which has more than 3,800 stores nationwide ("GameStop to Acquire Rival Video Game Retailer," 2005). In the 2004., they account for \$3.8 billion in global sales (Gamasutra, 2005c). But the company's recent deal to purchase rival Electronics Boutique, which has 547 stores overseas will help expand the company's profits and scope. This gives Gamestop roughly a quarter of U.S. sales; its next closest competitor is Wal-Mart, which accounts for another 20 percent of U.S. sales ("GameStop to Acquire Rival Video Game Retailer," 2005). This heavy concentration means that the large number of smaller, independent retailers have a harder time affecting the market in any substantial fashion. Table 4.4 breaks down the market share by retailer of the game sales for 1999.

Video game rentals are also heavily concentrated and share considerable overlap with the film industry. Figure 4.12 provides a breakdown of the market share of major companies in video game rentals. It is important to note that these companies are the same companies which dominate video and DVD rentals in the U.S. (Wasko, 2003). A more detailed analysis of the ties between the video game and film industry can be found in Chapter Five. It should also be noted that game rentals occur exclusively for console and handheld platforms. Figure 4.14 provides a breakdown of the market share of game rentals by platform. It is significant that Sony games dominate rentals to a much higher which accounts for another 20 percent of U.S. sales ("GameStop to Acquire Rival Video Game Retailer," 2005). This heavy concentration means that the large number of

Table 4.4 : U.S. Retailer Market Share of Software Sales, 1999

Source: (Williams, 2002)

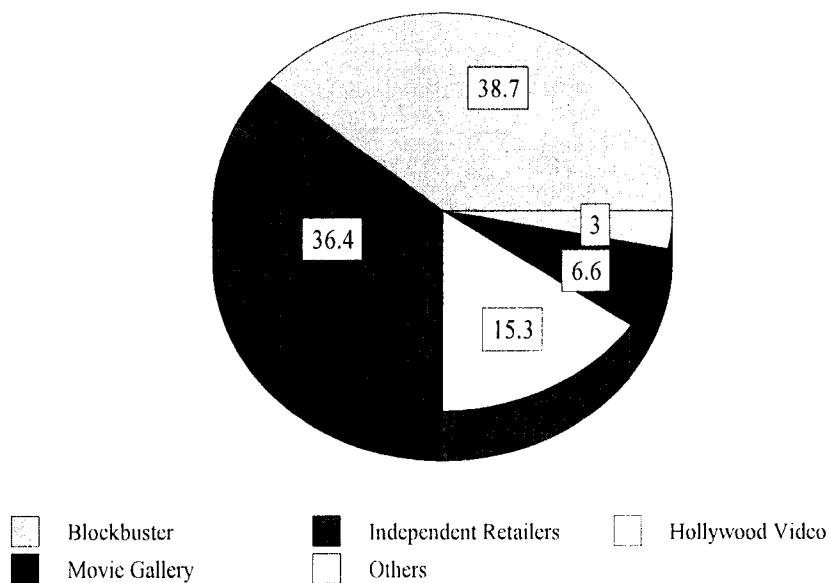
Console Software		PC Software	
Wal-Mart	19%	Best Buy	15%
Toys'R'Us	13%	CompuUSA	14%
Best Buy	13%	Wal-Mart	13%
Electronique's Boutique	11%	Electronique's Boutique	12%
Babbages	8%	Babbages	9%

smaller, independent retailers have a harder time affecting the market in any substantial fashion. Table 4.4 breaks down the market share by retailer of the game sales for 1999.

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The retail sector is the public's primary view of the video game industry and its .

Figure 4.12: Market Share of U.S. Video Game Rentals
 Source: ("Video Game Rentals by Platform, 2002," 2005)

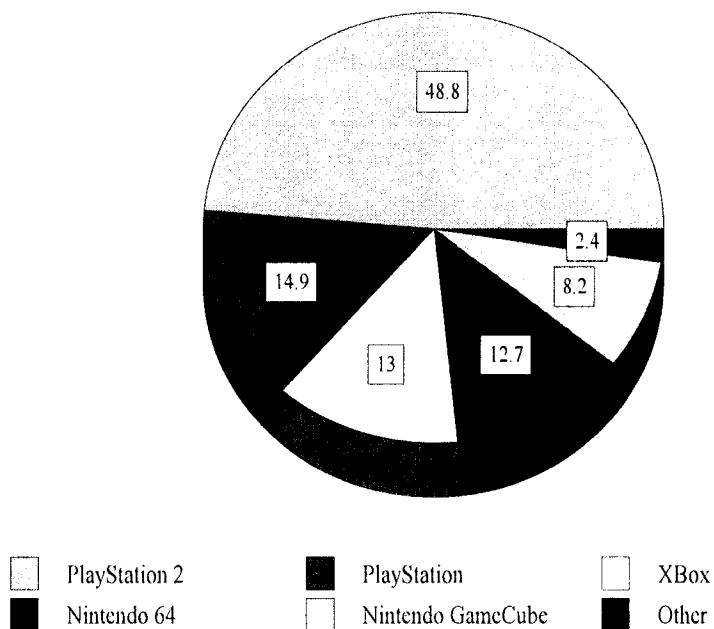


processes. As such, it draws continuous scrutiny from parents' groups, who see industry selling practices as responsible for putting questionable content into the hands of minors. This has led to retailers adopting strict controls on their own employees, such as ages of BestBuy's recent policy promising severe penalties for employees who fail to check the shoppers (Ivry, 2005).

Regulation

Video games, as with many media industries, have been largely unregulated by the government. In part, this may be due to a perception that video games, as U.S. or anything else that could possibly amount to speech." Ironically, this view has been shared even by the U.S. military even as it has adopted video games as part of an

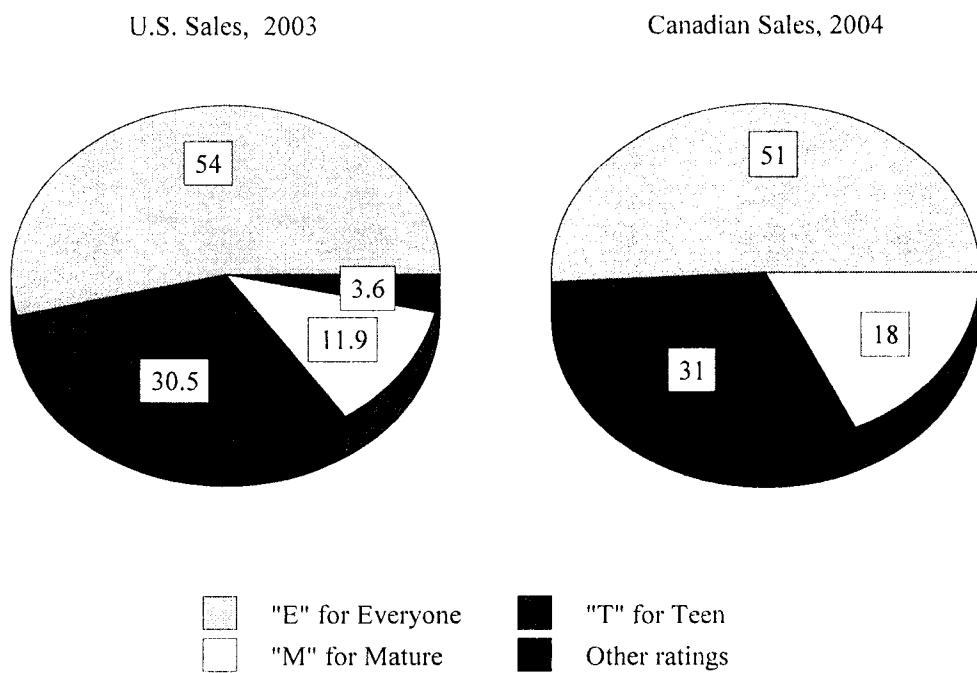
Figure 4.13: Share of Video Game Rentals by Platform
 Source: ("Video Game Rentals by Platform, 2002," 2005)



ongoing public relations campaign for the military. The military view is that video games must be regulated because they are “law enforcement training devices” (Kent, 2003). These views, however, seem to be in the minority, as the most attempts at regulation of video District Judge Stephen Limbaugh has said, “have no consequence of ideas, expression, games have come from state rather than federal government, with attempts to regulate violent content and the sale of games in Illinois, Alabama, Missouri, and Washington (AP, 2005c, 2005d).

Like the film and recorded music industries, most regulation of video games within the United States has been handled by an industry board. The Entertainment Software Ratings Board (ESRB) has been active since the mid-1990s and has rated more

Figure 4.14: Percentage U.S. and Canadian Video Game Sales By Rating
 Source: ("Best Selling Video Games," 2005)



than 10,000 video games (Felberbaum, 2005b). Figure 4.14 provides a breakdown for sales by rating in the U.S. and Canada. The ESRB has been active in maintaining ratings standards. In response to demands for stricter controls in light of recent game scandals such as the discovery of sexual content hidden in the code of "Grand Theft Auto: San Andreas," the industry has even moved to add a new rating, Teen, to its system (Wong, 2005). Ironically, sex has long figured into the marketing of video games with a game called "BMX XXX" having been the first major title to include live-action nudity (Khanh T.L. Tran, 2002c). However, in 2004, games rated that were "mature" increased dramatically, with a 12 percent increase from the previous year

alone. (Wingfield & Marr, 2005). Table 4.5 provides a breakdown of the ratings for the industry and their descriptions. Moreover, the Interactive Entertainment Merchants Association (IEMA), an organization representing 85 percent of game retailers, requires proof of age from anyone purchasing games rated "mature" (Thorsen, 2003). Much of the debate about video game ratings ignores that most games are favorably rated. In 2004, 46 percent of all games sold were rated "E." As noted earlier, there is also a distinction between platforms with 64 percent of all games for Nintendo GameCube carrying an "E" rating (Felberbaum, 2005b)

Ironically, most attempts by states to ban the sale or rental of violent video games have been struck down because they violated free speech rights (Tallon, 2005). Other countries, however, have not had similar difficulties. In New Zealand, for example, the Office of Film and Literature Classification banned its first video game *Manhunt* in Australia ("Computer Game Banned for Repetitive Violence," 2003). Little information is available on the video game industry's efforts to self-police outside of the U.S. and Canada, however.

More significantly, however, the government in the U.K. has made moves to actively support the video game industry in their countries, a factor which may shift the balance of the industry and its employment in coming years (*From Exuberant Youth to Sustainable Maturity: Competitive Analysis of the UK Games Software Sector*, 2001). Similar moves have been discussed in Australia and New Zealand. This suggests that the video game industry is seen as highly desirable for workers and for industry backing. The implications of this are discussed in Chapter Six.

Table 4.5: Video Game Ratings
 Source: The Entertainment Software Ratings Board

	<p>EARLY CHILDHOOD</p> <p>Titles rated EC - Early Childhood have content that may be suitable for ages 3 and older. Contains no material that parents would find inappropriate.</p>
	<p>EVERYONE</p> <p>Titles rated E - Everyone have content that may be suitable for persons ages 6 and older. Titles in this category may contain minimal violence, some comic mischief and/or mild language.</p>
	<p>TEEN</p> <p>Titles rated T - Teen have content that may be suitable for persons ages 13 and older. May contain violent content, mild or strong language, and/or suggestive themes.</p>
	<p>MATURE</p> <p>Titles rated M - Mature have content that may be suitable for persons ages 17 and older. Titles in this category may contain mature sexual themes, more intense violence and/or strong language.</p>
	<p>ADULTS ONLY</p> <p>Titles rated AO - Adults Only have content suitable only for adults. Titles in this category may include graphic depictions of sex and/or violence. Adult Only products are not intended for persons under the age of 18.</p>
	<p>RATING PENDING</p> <p>Titles listed as RP - Rating Pending have been submitted to the ESRB and are awaiting final rating.</p>

In addition to regionally specific regulatory concerns, video games are faced with many of the same problems as other industries. The question of video game piracy has begun to plague the industry almost to the same degree as the film industry. Software pirates from Russia, now one of the global leaders in piracy, have cost U.S. businesses an estimated \$1.7 billion (Chazan, 2005). Similarly, the industry is faced with the problem of on-line file sharing, most recently a service called BitTorrent, which takes parts of files from various computers connected to a computer network. Interestingly, though BitTorrent shares not only game but also movie and music files, but it had only received a single legal complaint as of 2005 (Veiga, 2004).

The question of intellectual property has cut both ways in the video game industry. Because many games, particularly MMORPGs, result in players designing and creating content while they play, the question of ownership has been muddled. While there have been few legal consequences in the U.S., with players mostly selling their “creations” over services such as eBay, in other countries, the legal question has received more attention (Castranova, 2001, 2002). In China, a software company was forced by the courts to compensate a player for lost “property” on their game. The player had spent more than 10,000 yen and two years with the game when his creations were stolen (CNN.com, 2003). Should similar action be taken elsewhere, it would have serious ramifications for the industry which has come to view online games as an important potential source of revenue. It also would suggest a shift in what is meant by labor, an idea taken up in Chapter Six.

Finally, there have been a number of other legal concerns which have impacted

the industry. A number of companies, but most notably Electronic Arts, have been hit with lawsuits from employees citing unfair labor practices (*Jamie Kirschenbaum, Mark West, and Eric Kearns v. Electronic Arts, Inc.*, 2004; Khanh T.L. Tran, 2002a). These cases will be given more focus in Chapter Six, but are significant for their potential impact on industry regulation. A second concern, not uncommon for the computer and software industries, has been the question of patent violations. The most recent of these charges have centered around Sony which has been seeking damages from companies in Australia which have provided hardware that circumvents the company's copy-proofing technology (2005d). But Sony was also forced to pay \$90.7 million in damages after it was found that its PlayStation controllers violated another company's patent (Fordahl, 2005). Similar infringement suits have been filed over software as well. Sega sought damages from Fox Interactive, citing similarities between the company's *The Simpsons Road Rage* and Sony's *Crazy Taxi* (Fahey, 2003).

Because so much public concern over the industry has centered on violent content, it seems likely that the focus of regulation - both within and outside of the industry - will continue to deal with these factors rather than with production issues or struggles over labor and patents. Because there is considerable overlap between the industry's concerns and those of other media industries, a more detailed analysis of how video games are tied to these industries is necessary and will be presented in the next chapter.

Conclusion

This chapter has provided a snapshot of the current video game industry and its structure. As discussed in Chapter three, the early video game business often tried to model itself after other media industries, particularly the film industry. Because of this, there are similarities, not only in their structure, but also in the regulatory environment and legal issues the industries are facing.

The video game industry is divided into four primary sectors: hardware manufacture, software developing, software publishing, and retail. Levels of concentration are highest in the hardware production and software publishing sectors. There is also significant overlap between the major hardware producers and the major software publishers. This concentration ensures that power in the industry rests with the hardware developers and software publishers. As the next chapter will show, this allows a very small subset of the industry to control licensing deals and advertising dollars. Such high levels of concentration make it more difficult for new companies to enter the industry and limits the ability of consumers to influence the market. The retail sector is also highly concentrated, but has not experienced significant penetration from the owners of the other two major sectors. Both the level of concentration within the industry and the system of organization are similar to other media industries. Certainly, this is partly because the video game industry modeled itself on other media industries. But it also owes to the nature of commodification itself, which drives industries - information or otherwise - towards concentration.

At the same time, the industry is seeking a broader consumer base. It has done this by experimenting with new formats like online and wireless gaming. As Chapter Five will show, the video game industry's use of licensing is another way of trying to reach a larger audience. It has also worked to adapt to new platforms in order to stay on the cutting edge of technology. This has been instrumental in contributing to the industry's lead in media convergence. Technology has been at the heart of the industry's logic. By adopting production cycles which rely on planned obsolescence of hardware, the industry found a system of maximizing profits both in hardware and in software. This has also helped to concentrate the industry's power, particularly in the hardware and software sectors.

One significant development for the industry has been the international development which has existed since its beginnings. This is a departure from the models of the film and recorded music industries, which took longer to become international. At the same time, the industry has kept these markets separate through regionalization of products and through localization, a process which will be discussed in Chapter Six. The industry has worked to form ties between these industries both through cross-ownership (as with Sony) and through licensing and partnerships. These ties will be discussed more completely in Chapter Five.

CHAPTER V

VIDEO GAMES AND OTHER MEDIA INDUSTRIES

As discussed in Chapter Three, the relationship between the video games industry and other communications industries has a long history that is often neglected. Chapter Four provided a snap shot of how the current industry is structured. Because most industry revenues for video games have come from the sales of video games - commodities which rarely result in recurring purchases - one of the areas the industry has had seek out new ways to maximize revenue. By fostering ties with other communication companies, the industry hopes to capitalize on established brands.

But the interest in cross-industry ties has not just come from the video game industry. As video games attract an increasing share of the audiences, other media industries are beginning to take notice. Increasingly, video games are becoming part of the synergistic plans for other media products, from films to television and even music. This chapter examines the ties between video games and other media industries.

As video games have increased in popularity, they have consistently drawn audiences from other media forms. One study suggested that 52 percent of video game players are increasing the time they spend playing, taking time away from television viewing (Donaton, 2003). Younger audiences are also spending more time with video games; a recent study found that children had access not only to VCRs and DVDs in

their bedrooms but also had considerable access to computers and game players. In fact, nearly a third of all children reported that when they're doing homework, they're also using other media forms (Armas, 2005). Video games have become so mainstream, that some experts even suggest that they will be a staple in most political campaigns by 2008 (Foster, 2004b).

Video Games, Licensing and Franchises

Video game licensing has become big business. Licensed projects tend to command big audiences, and the industry has found that drawing on concepts with a proven track record increases the likelihood of profitability (Levine, 2005d). In its 21 year history, the Super Mario franchise has grossed more than \$7 billion globally [Guth, "A Global..."]. But such franchises are rare. The most successful games have become franchises on their own, but because their library is limited, the video game industry has begun to seek out proven franchises from other industries, most notably film (Holson, 2005a).

Part of the attraction of other media industries to video games owes to their high profit margins. The typical profit margin for a Hollywood studio on an individual film is around 10 percent, while game makers average 15 percent with the best making as much as 25 percent (Grover et al., 2005). This suggests that film makers can make significantly more money on games than on films (Fritz, 2004). This is particularly impressive when considered in relation to the profit margins of major Hollywood films. For example, each

Table 5.1: Best Selling Video Games of All Time

Source: ("Best Selling Video Games," 2005)

Based on World Wide Sales in Millions of Units		
Game Title	Units Sold	Publisher
Super Mario Bros.	40.0	Nintendo
Tetris	33.0	Nintendo
Super Mario Bros. 3	18.0	Nintendo
Super Mario World	17.0	Nintendo
Super Mario Land	14.0	Nintendo
Super Mario 64	11.0	Nintendo
Super Mario Bros. 2	10.0	Nintendo
The Sims	10.0	EA
Grand Theft Auto: Vice City	8.5	Rock Star
Harry Potter and the Sorcerer's Stone	8.0	EA

of the Harry Potter movies delivered more than \$100 million in licensed product sales (Elkin, 2003). Some licensing deals, however, involve barter rather than cash; for example, the use of the Aston Martin by EA in its games based on James Bond was part of a licensed deal with MGM studios. But the deal resulted in no direct profit for the EA (Elkin, 2002c). Increasing licensing revenue has been beneficial for Hollywood. In 2002, Disney reported more than \$13 billion in licensing while Time Warner drew almost \$6 billion (Elkin, 2003). However, there is a danger in relying too much on licensed products. According to a study by the ESA, more than one third of all video game players would like to see fewer licensed games (Roch, 2004).

Both video game and movie companies have recognized the importance of older audiences and have begun to use licensing as a means to appeal to these audiences (J. Pereira, 2002). But both industries have also realized the importance of broadening the audience to include women, and the rise in women's use of video games is part of the attraction from both sides (O'Connor, 2003). The most successful video game franchises have traditionally been rated "E" and targeted towards younger audiences. Table 5.1 presents the best selling franchises in the video game industry. Currently, when studios license rights to a video game company, they typically expect from \$3 to 5 million up front, plus up to nine percent of the profits(Grover et al., 2005). And because video games typically cost so much more than even the most expensive film ticket, a video game has to be extremely popular in order to be as potentially profitable as a Hollywood film (Fritz, 2004).

But as video games have gained in popularity, the deals have changed, and the video game industry has begun to try for more advantageous deals. When Microsoft's "Halo 2" and Rockstar's "Grand Theft Auto: San Andreas" debuted in stronger numbers than major movies released on the same day, it signaled to many a sea-shift in the power dynamics between the two industries (Fritz, 2004). "Halo 2," for example, generated more than \$125 million in its first weekend while hit movie "The Incredibles" earned only \$70 million in the same weekend (Gentile, 2005b). Hence, the surprise when Microsoft announced it would forge ahead on its own without the help of Hollywood in developing a script and producing a film based on its hit franchise "Halo" (Brodesser & Fritz, 2005).

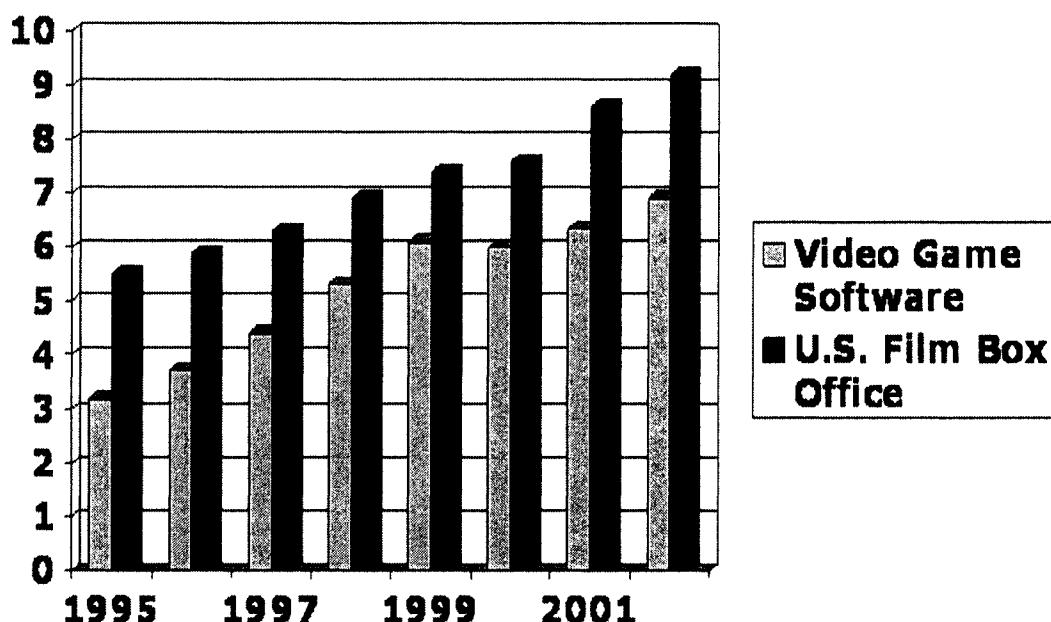
Video Games and the Film Industry

As Chapter Three demonstrated, the ties between the video game and film industries have existed since the earliest days of video games. The first major companies in the industry all viewed themselves as expanding on the film industry and on the possibilities of film itself. Moreover, the film industry invested in video games and experimented with licensing movies to games in the mid-1970s. In fact, it is a video game based on the hit movie “E.T. the Extra Terrestrial” that is often used to mark the first decline of video games in the early 1980s and one of the reasons that Warner Communications pulled out of the business (Kent, 2001). The 1984 failure of the “E.T.” game resulted in 5 million cartridges being sent to a landfill, representing the biggest failure of the Hollywood/video game attempts at crossover (Grover et al., 2005).

But by the 1990s, Hollywood was again interested in games. Companies like Dreamworks SKG, Time Warner, and Disney, as well as other media giants, began to build their own game development units. Ultimately, these developments faltered due to high development costs and a limited view from Hollywood about what video games could do (Holson, 2005a). Figure 5.1 compares the revenues from software sales and Hollywood’s box office from 1995 through 2001. By the late 1990s, Fox and Dreamworks had all but abandoned their game units, preferring instead to license their content and allow the video game industry to risk the high costs of development (Grover et al., 2005). But it was during this period that the first major in-roads for licensing games into Hollywood films began. Table 5.2 details movies based on video games

**Figure 5.1: U.S. Video Game Software Sales and Film Box Office Receipts
In millions of U.S Dollars**

Source:(ESA, 2002a; MPA, 2005)



during this period. And yet, starting in 2003, a third foray into the video game industry is in progress with Hollywood majors restructuring their franchise models to better allow game development of a variety of properties from the extensive libraries of content owned by the major Hollywood players (Diamante, 2005).

With the video game industry again appearing highly profitable, it is not surprising that Hollywood is again trying to figure out its relationship to video games. In spite of the high profitability of video games, which has surpassed U.S. box office sales, Hollywood is still the stronger party (Diamante, 2005). Not only does the film industry have a more extensive catalogue, but they also have more ways to ensure profit from a concept. By marketing the idea for a film or a video game through all of film's

ancillary markets, profitability is much more certain for a company than it is with just a single commodity. In contrast, video game revenues depend primarily on sales with a small amount coming from game rentals. Moreover, video games typically have a shelf-life of roughly three months, unlike films which can be released and re-released over a longer period of time (Grover et al., 2005). But increasingly, video games and film are becoming an integral part of the synergy strategy. In 2002, more than 100 games were being developed based on movies and video releases (Tramain, 2002). And in 2005, when Sony scheduled the launch of its PlayStation Portable platform, United Pictures International released a number of movies specially formatted for the device (Dawtrey, 2005). While typically video games have been released on or close to the release date of major films, in order to benefit from the marketing of films, increasingly the release date is being pushed back to coincide with DVD releases and other film promotions (Elkin, 2002c; "Video Games Go to the Movies," 2003).

Owing perhaps to their past failures, this time, Hollywood has been slower to dive into the video game waters. Among the first to look into the market were Viacom and Time Warner ("Media Giants Suit Up to Take On Video Games," 2004). But Disney has taken more decisive steps, purchasing a Vancouver studio and luring a development team away from Electronic Arts (Fritz, 2005c). After the success of its "Toontown" game, Disney has begun to eye the online game sector in particular and plans to develop an online game based on its successful "Pirates of the Caribbean" franchise. The game is due to launch in the summer of 2005 (Fritz, 2005d). In addition, through the acquisition of Avalanche studios, Disney hopes to find games that the

company can develop movies from (Fritz, 2005c). However, Disney faces one problem - currently 90 percent of the company's video game revenue comes from sales to children while the industry is shifting towards increasing adult sales (Marr, 2005).

Other companies have limited their involvement to licensing. Paramount has begun to license video games from Midway Games for film production. Three movies were released in 2003 based on video games, *Resident Evil*, *House of the Dead*, and *Tomb Raider 2* (Herold, 2003a). Films are slated to be made based on at least two games, *Area 51* and *Fear and Respect* (Holson, 2005a). And producer Uwe Ball has raised more than \$47 million to invest in Hollywood versions of games *Bloodrayne* and *Dungeon Siege* (D. Harris, 2004). All of these games fit the Hollywood action formula, which has been so successful internationally (Wasko, 2003). Surprisingly, the type of Hollywood companies seemingly best capable of making the leap to producing their own video games - animation studios - have been preferred to sign outside licensing deals. Among those companies seeking outside game production include Pixar, Dreamworks Animation, and Fox' animation studios (Fritz, 2005i).

One of the biggest areas for development has been children's entertainment franchises. Pixar's deal with THQ Games is just one example. More significantly, the adaptations of "Shrek 2," "The Incredibles," and "The SpongeBob SquarePants Movie" were among the biggest sellers of 2004 (Fritz, 2005i). And video game publisher UbiSoft has recently agreed to a multi-picture deal to produce games based on two of Sony Pictures' animated movies, "Open Season" and "Surf's Up" (Fritz, 2005i). But

Table 5.2: Top Ten Movie Grosses of Films Based on Video Games
Source: (ELSPA, 2003; Wasko, 2003)

Film Title	Film Studio	Game Publisher	Adjusted Gross in millions of U.S. Dollars	Release Date
Lara Croft: Tomb Raider	Paramount	Eidos	\$131.2	2001
Pokemon: The First Movie	Warner Brothers	Nintendo	\$95.5	1999
Mortal Kombat	New Line	Midway	\$91.7	1999
Pokemon: The Movie 2000	Warner Brothers	Nintendo	\$45.9	2000
Street Fighter	Universal	Capcom	\$45.3	1994
Mortal Kombat: Annihilation	New Line	Midway	\$44.3	1997
Final Fantasy: The Spirits Within	Sony	Square/Nintendo	\$32.1	2001
Super Mario Bros.	Disney	Nintendo	\$28.6	1993
Resident Evil	Sony	Capcom	\$17.7	2002
Pokemon 3: The Movie	Warner Brothers	Nintendo	\$17.1	2001

movie tie-ins are not guarantees of success. Of all the video games based on films in 2004, only the game based on "Spider-Man 2" made it into the top ten sellers for that year (Levine, 2005d). Because of this, Hollywood and the video game industry have been cementing their ties, particularly focusing on children's games. Among the higher profile deals was a five year exclusive arrangement between Nickelodeon and THQ,

which was reportedly worth more than \$75 million (Fritz, 2005a).

One of the more interesting licensing trends is the video game industry taking advantage of Hollywood's extensive catalogue of films. Based on the success of recent licensing deals like "Harry Potter" and "the Lord of the Rings," a number of games are going to be released based on older movies (Wingfield & Marr, 2005). EA recently licensed the rights to the "Godfather" trilogy from Paramount and is hoping to build buzz in time for a Christmas release (Grover et al., 2005). Similarly, Take Two Interactive Software has released a game based on the 1979 cult hit "The Warriors" (Wingfield & Marr, 2005). There is even a game being made based on the character of "Dirty Harry," produced in conjunction with Clint Eastwood's Malpaso Productions and Warner Brothers Interactive Entertainment (Robischon, 2005; Wingfield & Marr, 2005). The game is reported to include scenes and characters from across the franchise, though no reference to the previous Dirty Harry game, made in 1990 for Nintendo, is expected (Robischon, 2005). Other movies from the vault due to be transferred to video games include "Taxi Driver" and "Scarface," produced by Majesco Entertainment and Vivendi Universal Games respectively (Wingfield & Marr, 2005).

For the video game industry, the move to exploit Hollywood's catalogue makes sense. The rights to older films are much cheaper than developing a new concept. Estimates suggest that the rights to an older film can run between \$150,000 to \$400,000, much cheaper than the \$1 million and more for a new release. But unlike releases based on current movies, such games don't receive the benefit of the marketing provided by the promotion of new Hollywood films. Because major games can now cost more than

\$10 million to produce, without the benefit of Hollywood's marketing dollars, a licensed game may need to sell as many as half a million copies in order to be profitable (Levine, 2005d).

Perhaps no better example of Hollywood's exuberant adoption of video games can be found than the recent "Enter the Matrix" online video game developed by Shiny Entertainment and published by Atari (Herold, 2003b). With a budget of roughly \$20 million, higher than most video games, the game included an hour of filmed scenes and another hour of animation. (Declaney, 2003). The game, released more than two years after the last "Matrix" movie, was hoped to bring in \$500 million between 2003 and 2006 if successful. Unfortunately, the game has proved relatively unpopular and has received bad reviews, resulting in its sale from Warner Brothers to Sony (Fritz, 2005h).

But the future may not be all roses for video games and Hollywood.. Recent plans by Microsoft to work around Hollywood and develop its own movie for the "Halo" franchise has raised eyebrows in the film industry(Fritz, 2004; Grover et al., 2005). Though not directly a response, a number of Hollywood companies are considering tightening policies on video game production. The head of Warner Brothers' new game division, Jason Hall, stirred the hornets' nest by insisting that licensed games that do not meet minimum quality standards set by Warner Brothers will receive decreased royalties (Holson, 2005b).

The second major area of confrontation has centered around the increasing need for Hollywood talent to work in video games. Increasingly, video games are requiring A-list voice talent to help them succeed (Brodesser, 2005). But Hollywood and the

Screen Actors Guild have been insisting on higher royalties for voice work, something that the video game industry isn't certain it can afford (Fritz, 2005f, 2005g). In most cases, unless a game company has permission from an actor, it cannot use the actor's likeness in a game (Wingfield & Marr, 2005). This has led to some strange conflicts, including the absence of Michael Corleone (voiced by Al Pacino) in the games based on "The Godfather." Even the Governator, Arnold Schwarzenegger, has begun to license his voice to games based on "The Terminator" franchise (AP, 2003). But, as will be seen in Chapter Six, the video game industry - like most high tech industries - has little experience in dealing with unions and guilds.

Finally, the increasing sophistication and availability of game design programs included with many video games has begun to encroach on Hollywood. A number of games include built in movie-making tools that allow players to make and modify their own animation ("Deus ex machinima?", 2004). This animation, termed "machinima," can rival the graphical capabilities used to create movies like "Shrek" or "Finding Nemo" ("Deus ex machinima?", 2004; Levine, 2005c). Machinima has been used by Spike TV to help create shorts for its 2003 video game awards program and by Stephen Spielberg to help storyboard his movie "A.I." ("Deus ex machinima?", 2004). It has also become a staple of video game marketing campaigns and has influenced the development of a number of television shows and Internet shorts based on video games (Levine, 2005c).

Television and Cable

Like motion pictures, television and cable been forced to come to grips with the increasing popularity of video games. Because viewership for top broadcasters fell almost 22 percent in the 18 to 34 age bracket and was down 7 percent overall in 2003, both the cable and television industries have been seeking ways to take advantage of video games (Donaton, 2003). In an attempt to avoid declining audiences, television – and particularly, cable networks - has begun to try attract audiences by experimenting with video games. In 2003, two series, “Pirate Island” and “...hack/sign” featured characters trapped in video games (Herold, 2003a). And major cable networks like Spike TV, MTV, and the Game Show Network are getting involved as well, focusing on original programming that relies on video games (“TV Execs Go Gaga Over Gaming,” 2003). Spike TV hosts annual game awards, the second of which featured not only award winning games but rock stars and previews of upcoming games (Breznican, 2004). Comcast launched its all video game network, G4, in 2002 (Sieberg, 2002), which was estimated to reach somewhere between 15 and 54 million viewers (Stanley, 2004a).

Like the film industry, major players in television and cable are signing licensing deals with the video game industry and making games based on hit TV shows. Toy and video game producer Bandai has signed deals with a variety of networks, including the WB, the Disney Channel and the Cartoon Network, to make games and toys based on their properties (Fritz, 2005c). Fox Network has even signed a deal with Will Wright,

the creator of EA's hit game *The Sims*, to create original television projects for the network ("TV Execs Go Gaga Over Gaming," 2003). Popular program formats include comedies based on video games, game award ceremonies, and even interactive shows which work in conjunction with games and online web sites. Licensing for television and cable is becoming a vital source of revenue. For instance; Nickelodeon's various deals brought in more than \$2.5 billion in licensed sales in 2002 (Elkin, 2003).

No network has been more aggressive in its work with video games than MTV. The network has been at the forefront of promoting games with their advertising and in their programs. Typically this promotion has been in exchange for a take of game revenue. MTV's first major agreement was with Midway Games, a company majority owned by Sumner Redstone. The first game in the alliance is to feature the stars of MTV's "Pimp My Ride." As part of the arrangement, MTV will consult on the game's soundtrack, will sell in-game advertising and lend its logo to the package (Levine, 2005b). MTV has also experimented with machinima. On its second network, MTV2, one of the most popular shows is "Video Mods," which features music videos designed by machinima and featuring popular video game characters (Donaton, 2005). And just like the popular music network, musicians are finding new ways to get into the game as well.

Recorded Music

Of all the media industries, recorded music has one of the longest and most consistently profitable relationships with video games. In 1994, *Road Rash* was

released by Electronic Arts, and it was one of the first games to embrace music tie-ins (Cunco, 2004). Since then, a number of major games have featured new music and record deals. In October 2002, Epic Records released seven albums to accompany the hit game ‘Grand Theft Auto: Vice City,’ featuring a wide variety of formats (Garity, 2003). For some, video games have become the “new radio,” the ideal way to get exposure for new and upcoming releases (Cunco, 2004).

The most notable collaboration between the recorded music industry and video games was the recent deal signed by Electronic Arts with Def Jam Records. As part of the deal, EA is to pay Def Jam’s parent company, Universal Music, licensing fees, while Def Jam is to receive royalties for use of the label’s name. The first release under the deal, “Def Jam Vendetta” featured more than ten of the label’s artists and previewed a number of their songs (Tramain, 2003). The move is significant because it was an active attempt on both EA and Def Jam’s part to target older audiences (Marr, 2005). The second collaboration of the two games was introduced by rapper Snoop Dogg at the second Spike TV video game awards. The game combines wrestling and rap, and is titled “Def Jam: Fight for NY” (Breznican, 2004).

One other interesting licensing development has been developed in conjunction with the music industry. Pointing to the success of Christian pop music, which now makes up roughly seven percent of all pop music sales worldwide, consumers have suggested that Christian video games might also be a lucrative area to be tapped. Based on this success, game developers are beginning to experiment with formats for designing Christian based niche video games. One company, N’Lightning has shipped more than

80,000 units of its first game *Catechuman*. There are even Christian first person shooters, such as the game *Eternal War*. Development costs for these niche games have run between \$2.5 and \$4 million, a large portion of which - roughly \$500,000 - has gone to license the game engine (Dee, 2005).

Books and Publishing

One area of the video game industry which hasn't received much attention is the publication of strategy guides. Currently, the strategy guide industry produces roughly \$100 million in sales each year (Snider, 2004). This area is dominated by a single publisher, Prima Games, which controls more than 90 percent of the industry ("Strategy Guide Industry," 2005). It is not uncommon for strategy guides to sell more than a million copies. Prima's strategy guide for "Halo 2" sold more than 250,000 in its first day at a cost of \$16 per guide. And it is becoming more and more common for "making of..." guides to games to be released and become best sellers. Del Ray Publishing distributed 50,000 of its book "The Art of Halo," at a cost \$21.95. (Snider, 2004).

Books have also inspired video games. Ubisoft is creating games drawing on the work of Tom Clancy who helped create the successful *Splinter Cell* franchise. The first two games in the franchise have sold more than six million units worldwide. Clancy has created two other game franchises: *Rainbow Six* and *Ghost Theory*. And these franchises have been so successful that there is Hollywood interest as well. Paramount slated to make a film based on the "Splinter Cell" franchise (McNary, 2004).

Sports and Video Games

Sports, too, have felt the impact of video games. Since 2000, television broadcast ratings for sports programs have fallen among males between 12 and 34 (Schiessl, 2005c).

No genre maximizes economies of scale and the benefits of licensing quite as well as sports video games. In 2004, these games made up 19% of the \$6.2 billion in U.S. software sales (Wahl, 2005). But how much impact do video games have? As Sandy Montag, agent to sports commentator John Madden, puts it, "John Madden's Q rating is in the top ten of all sports and higher than any current football player, and a lot of that is due to the video games." (Schiessl, 2005c).

For a franchise that hit \$1 billion in sales by 2004, that statement should be surprising (Cuneo, 2004). In 2004, "Madden NFL 2005" for the PlayStation 2 ranked third in games sold for the year. The 2003 version ranked first (Wahl, 2005). And for the developers of the Madden Franchise, Electronic Arts, that's just the beginning.

Competing against Sega Sammy Holdings and Take Two Interactive in the sports genre, EA has scored a number of coups (AP, 2005a). In 2004, EA signed separate deals with the NFL, ESPN, NBA, and the Collegiate Licensing Association (CLC). The ESPN deal is a record 15 year exclusive arrangement, and drew ESPN licensing away from competitor Sega (Fritz, 2005a; Wahl, 2005). The deal is part of a growing trend for long-term arrangements rather than one-off licensing pacts. In exchange for the exclusive use of ESPN's logo and images, EA is believed to have paid more than \$750

million with some of the money earmarked for marketing, commercials and other promotion (AP, 2005a). Similarly, EA signed a five year exclusive deal with the NFL . But perhaps most stunning was the six year deal with the Collegiate Licensing Corporation (CLC), which grants EA exclusive rights not only to NCAA teams, but also to stadiums and schools for college football games. Financial details are not available, but since the CLC doesn't sell their games internationally, it is expected to be less than either the ESPN or NFL deals. In addition, the deal allows the company to produce games for all consoles and platforms, including handheld devices (Gamasutra, 2005a). Like the Madden brand, EA's NCAA Football 2005 was a major seller, topping more than 1 million copies in 2004.(EA, 2005).

The NBA, however, has taken a different tact. NBA Commissioner David Stern describes the league's dilemma this way:

I was on a panel recently where someone asked me what my worst fear was. It was that as video games got so graphically close to perfection and you could create your own players - their hairdos, their shoes - that there might be a battle between seeing games in person or on television and seeing it play out on a video game (Schiesel, 2005c).

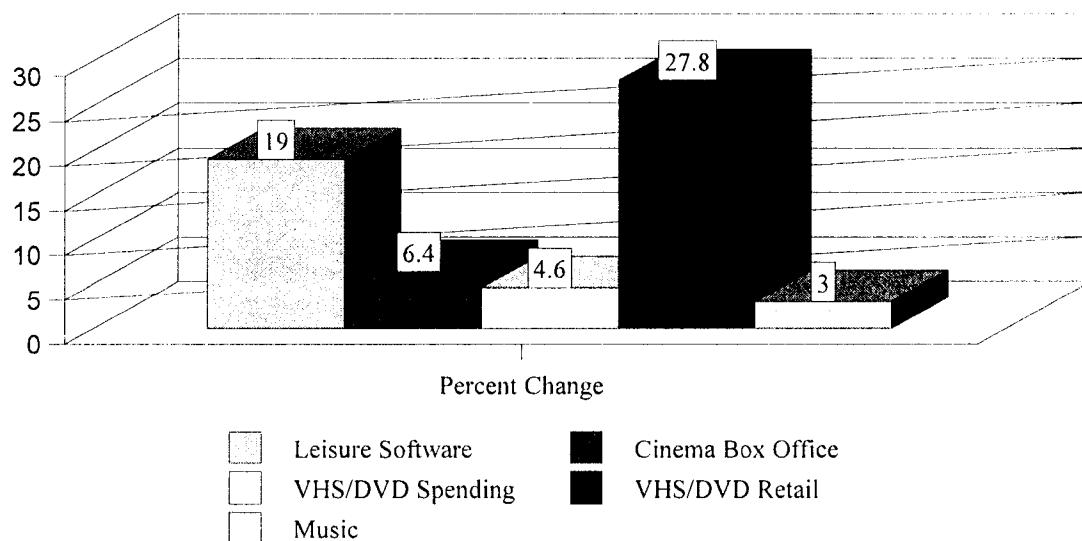
And so the NBA has opted to license to five publishers rather than any single one. Its arrangement, lasting between five and six years, was worth \$400 million. The five publishers were EA, Take Two Interactive, Atari, Midway Games, and Sony Computer Entertainment ("N.B.A. to Announce Deals With Five Video Game Publishers," 2005).

Video Games and Advertising

Unlike most media industries, the relationship between video games and advertising is still in a state of flux. While the industry has recognized the importance of marketing and licensing, it is still struggling to find a way to take best advantage of the demographic it is pulling together. Roughly 36 million people in the U.S. play video games at least five hours a week. That population is expected to double by 2009; among those players are a substantial number of 18 to 34 year old males, one of the most coveted groups in advertising (Stanley, 2004a, 2004b). In 2003, marketers spent a little over \$414.1 million on advertising in video games; in contrast they spent roughly \$8 billion on television advertising (Stanley, 2004a). This is just a small portion of the advertising spending in the U.S. For 2003, while consumers spent almost \$178.4 billion for media, advertisers spent \$175.8 billion on ads. When institutional ad spending is factored in, the amount increases to \$316.8 billion (Donaton, 2005). Figure 5.2 compares the increase in U.S. marketing expenditures by industry.

Put in context of such spending, it is no wonder the video game industry is working to ensure its products are well received. This helps explain the reliance on franchises and licensed games in spite of increasing pressure from audiences to minimize them. As video games become more integral in brand building, their placement into media campaigns has changed. Increasingly games are being released further from the release dates of the products they're being tied to. For example, both *The Incredibles* and *Shrek 2* video games were released months after the films they were released months

Figure 5.2: Average Change in Market Spending by Industry, 1997-2002
 Source: (ELSPA, 2003)



after the films they were based on, but this may have allowed the franchise's profitability to be extended (Diamante, 2005). The video game industry has adapted this practice, using marketing from previous games to help its own franchises. Sequels have become common practice in the industry because they are seen as a way to decrease risk and development costs (Wahl, 2005). Unlike the film industry, however, many video game companies try to integrate marketing from the very beginning of the process of developing a game (Miller, 2005).

Video game industry spending on ads is already significant and seems poised to grow. In 2002, in conjunction with the launch of the PlayStation 2, Sony spent \$250 million in marketing in North America alone (Cuneo, 2002). Microsoft topped this amount in promoting the XBox. Globally, the company spent \$500 million, with \$350 earmarked for the United States (Elkin, 2002d). And because the industry still relies on

a production cycle geared towards Christmas sales, a majority of advertising dollars have been spent in the fourth quarter of each year (Hein, 2002).

But the perceptions of the importance of video games and advertising are changing. By 2009, advertising revenue for the industry is expected to reach \$562 million (Gentile, 2005b). While the most recent video game marketing has relied on the instincts of the advertisers, moves are being made to become more systematic (Waugh, 2005). First, advertisers are recognizing the variety of promotional potentials offered by video games. The marriage of video games and advertising has been along three broad lines:

- Internet games in which ads surround content
- in-game advertising
- custom published games as advertisements (Webster & Bulik, 2004).

This combination has proven particularly effective in helping games to attract word of mouth publicity and industry buzz (Waugh, 2005).

In-game Advertising

One of the big questions for the video game industry has been how to incorporate advertising directly into games. Advertisers spent \$34 million on in-game ads in 2004, considerably less than is spent on most other media, but analysts have suggested that it could generate as much as \$1 billion by 2010 (Gentile, 2005b). Advertising in games can work in two ways: static and dynamic (Bulik, 2004). Static product placement puts advertising into the games in specific ways. This is becoming increasingly common in sports games which incorporate advertising into arena depictions, for instance. But it is

possible in other games as well. For example, in EA's *The Sims Online* advertisements abound, with everything from fast food to apparel and even computers represented (Elkin, 2002a). In a more subtle manner, Activision has placed Puma products throughout their game *True Crime: Streets of L.A.* But the main character is also decked out in his Puma finest (Bulik, 2004). Sony is also experimenting with in-game advertising. Hoping to hype its MiniDisc Walkman, the company re-tooled "Tony Hawk, Pro Skater" into an online game christened "Sony SkatePark." Players played an average of 2.8 times during the game's twelve week run (Elkin, 2002b).

Dynamic advertising promises to be the more interesting of the two styles of in-game advertising. In dynamic ads, the products placed throughout the game change periodically. Obviously, such games require an Internet connection in order to be effective (Bulik, 2004). Activision has also taken a step towards measuring the effectiveness of such ads; in its game *Tony Hawk's Underground 2* the company embedded markers in each Jeep image to help count player contact with the placements (Gentile, 2005b).

But currently, industry revenue from advertising is minuscule. Electronic Arts, while earning \$4 billion in product sales in 2004, only earned \$10 million from advertising (Richtel, 2005d). When video game advertising matures, however, marketers are already planning ways to launch products from video games (Bulik, 2004). It is estimated that publishers - and not developers - could eventually earn from \$1 to \$2 in advertising per game played . The promise of such lucrative revenues has spawned the creation of a new advertising group, Massive, which plans to create dynamic ads in

PC games. The company has deals with at least ten publishers, and clients such as Coca Cola, Intel, Paramount Pictures, and Universal Music Group. But not everyone is a believer. Industry giant EA has refused to sign with Massive, indicating that they don't feel Massive's method is proven. The biggest deal Massive has brokered is with Nielsen Ratings in order to help determine whether in-game advertisements are effective (Richtel, 2005d).

Custom Games

Major companies particularly have begun to experiment with custom published games. Companies including Jeep, Nike, Volvo, Levi Strauss, Coca Cola, Nokia, and Kraft Foods are experimenting with custom games to help promote their products (Bulik, 2004; Stanley, 2004a). These games draw on the casual gaming trend and allow advertisers a great degree of control over how their brand is presented (Diamante, 2005). Because of how simple the design of casual games can be, they are also extremely flexible for international marketing. One game designed by WildTangent for Nike called *Skorpion K.O.* was released in eleven different languages and was played by more than 600,000 people world wide (Elkin, 2002b). Another Nike sponsored game, created in conjunction with Weiden and Kennedy advertisers titled *Game Breakers* was so popular that game makers considered expanding it into a full fledged game (Stanley, 2004a). But how effective are these games? According to Chrysler, which put a variety of simple puzzle and sports game on their website as well as on CDs distributed in magazines, 3.5 million people registered on their site and downloaded games. And of those, roughly

10,000 eventually bought Chrysler vehicles (Gentile, 2005b).

Case Study: “America’s Army”

But not all custom games are such simple affairs. When the U.S. Army began missing recruiting goals in 1999, the military considered new ways of marketing themselves to potential recruits (Hodes & Ruby-Sachs, 2002). The result was “America’s Army,” released on July 4, 2002. The game cost the Army more than \$5 million to develop; the total reached \$16 million with marketing (Hodes & Ruby-Sachs, 2002). But it has attracted more than 4.6 million registered players and approximately 100,000 more try the game each month (Grossman, 2005). In fact, within one month of the game’s initial release over 500,000 people had downloaded the game (Hodes & Ruby-Sachs, 2002). Surprisingly, 30 percent of Americans between the ages of 16-24 indicate that some of what they know about the Army has come from the game (Grossman, 2005).

The Army’s game was developed to help recruiting and to give players an idea of what life in the Army is like (Wadhams, 2005). The game consists of two parts; the first is a role-playing game designed to teach useful values for military service, while the second part is a first person shooter (Hodes & Ruby-Sachs, 2002). Releases and updates for the game are periodically issued to help keep the game fresh (Grossman, 2005). The Army has even found a means to capitalize on recent battles, with a number of sequences in the game based on campaigns in the Middle East (Hodes & Ruby-Sachs, 2002).

The game was initially only available for PCs, but in the summer of 2005, versions were made available for both the PlayStation 2 and the XBox (Grossman, 2005). The game was initially designed by a team at the Naval Postgraduate School's Modeling, Virtual Environment, and Simulation Institute. The game has maintained a commitment to realism, right up to the moment of death. For instance, characters who get shot hear no noise and only see a small red circle. This has helped to earn the game a Teen rating, but has raised concerns from critics (Hodes & Ruby-Sachs, 2002).

The game is particularly significant because it represents a major foray into games as advertisement. Such games result in restrictions on content in order to serve the advertiser's message. Just as the Army's game minimizes the impact of death, other advertisers would likely choose their content to minimize the facts and impact of whatever products they're marketing. This chilling effect would not be limited to custom games. Just as other media companies have to resolve problems between content and advertising, so, too, will video games. Of course, the Army is taking no chances with players passing on this game. To help ensure their message reaches as many consumers as possible, they have also begun to advertise in other games (Brickner, 2004).

It is significant that members of the Army development team have taken the stance that video games are simply training tools that should be regulated but not qualify as speech. The commodification of video games has resulted in the ability of State institutions to recognize the ideological implications of video games while simultaneously denying any responsibility in overseeing them. Only by accepting video

games as a commodity with no artistic or free speech merit can the State both decry the violence in video games while using them as training for war.

Conclusion

This chapter has focused on establishing the ties between the video game industry and other media industries. Currently, the most impressive ties are with the film industry and organized sports. Both allow for easy licensing of products which maximize the revenue a company can gain from a concept. This no doubt owes to the video game industry's similarity to Hollywood's system of organization discussed in Chapter Three. While licensing of products between the film and video game industry has been instituted from both directions, the current power dynamic seems to favor Hollywood if only because of their considerably larger catalogue which the video game industry has started to tap for major games. But it also draws on the periodic changes in team rosters which allows for periodic licensing as well as the potential for in-game advertising.

The high levels of industry concentration discussed in Chapter Four also influence how the industry relates to other media, particularly in the area of licensing. By consolidating their power, video game publishers have ensured themselves the ability to draw more revenue from licensing and advertising. As seen with Electronic Arts, the bigger the publisher, the stronger their position in licensing deals. This is particularly apparent in for sports video games, which not only serve as a consistent revenue source for the video game industry, but has also represented highly contested battles for

licensing rights in 2004 and 2005. Most of these battles have been won by industry giant Electronic Arts.

Finally, the links between the video game industry and advertising have been examined. Currently, the industry spends considerably more on advertising than it earns, but intense focus is being given to ways to incorporate advertising into games. Three categories of video game advertisement were discussed. Of these, the most promising appears to be the custom advertisement-based video game, as exemplified by the game "America's Army."

With an understanding of the industry's structure from Chapter Four and its ties to other media industries discussed here, Chapter Six focuses on the production of the games themselves. The focus of the chapter will be on labor conditions and on the educational and employment requirements of employees in the industry.

CHAPTER VI

LABOR IN THE VIDEO GAME INDUSTRY

This study has established video games as a fundamental part of the cultural industries, but has also revealed the logics of production which drive the industry. As discussed in Chapters Three and Four, the video game industry has emerged as a hybrid of the computer, toy, and media industries. This has resulted, first, in an industry which produces commodities geared towards planned obsolescence occurring roughly every two to three years. Second, the industry is organized around a production schedule which attempts to place most products into the market in time for the Christmas buying season or, to a lesser extent, in time to take advantage of the marketing of related licensed products. Lastly, the industry has sought ways to expand the market for its products both in terms of who plays video games, but also in terms of where and how video games are played.

With this in mind, this chapter focuses on the production of the commodities themselves. In order to better understand the process of production, particular focus is given to the situation of workers in the industry, as well as how they are organized and educated. The video game industry's ties to other media industries, particularly the film industry, has resulted in tensions about how labor is organized that distinguish video games from the rest of the software industry.

On the whole video games industry is an ideal example of what it means to live and work in an information society. Programming and design jobs require both high skill levels and, in many cases, high levels of creativity. In keeping with this, workers tend to be highly educated. Because the jobs often use computers and high speed internet connections, higher than usual levels of employee mobility are possible. According to theories of information society, this combination of skills should grant workers in the video game industry more influence in the labor market. Because their combination of skills are rare, highly sought after, and in demand, video game workers should be more able to switch jobs within the industry and more secure in their jobs. It would be expected that they would earn more wages, have better benefits, and experience higher job satisfaction than employees in most other sectors. This, in turn, should result in higher productivity for the industry and its sectors compared to other non-information industries.

Labor and the Production of Video Games

As has been noted previously, the increasing technical capabilities of hardware platforms, particularly consoles, helps to drive the production of new video games. It also has resulted in higher production costs and longer production times required for games. Because the industry is constrained by the two goals of meeting Christmas demand and promoting brand recognition and licensing obligations, there is intense pressure on workers in the video game industry.

Figure 6.1: The Process of Video Game Development

Source: (Wattenburger, 2005)

Four Phases of Game Development

Design:

Small staff, often 6-8 people to create concept

Pre-Production:

Staff increases to perhaps 15-20 to bring together ideas and prototypes.

Production:

Staff maximizes to as many as 200 workers to create full game. “Crunch Time” begins towards end of this period.

Polish:

Product is localized, tested, and prepared for shipping. Testing occurs during this point. Crunch time extends into this period, which may last 3-4 months.

Game production may take between 14 months and three years (Levine, 2005d; Wattenburger, 2005). For Triple A games, the industry equivalent of a blockbuster film, costs are expected to top \$10 million for games created for the next round of hardware platforms like the XBox 360 and PlayStation 3 (Robert A. Guth et al., 2005; Richtel, 2005d). Some analysts have even predicted development costs will rise to between \$15 and \$20 million within the next few years (Gentile, 2005b; Grover et al., 2005).

Figure 6.1 details the rough process of designing video games and how workers are brought into the process.

One of the major costs for game design is the cost of labor, which increases as game development becomes more complicated. Manufacturing the physical commodity is comparable in price to manufacturing a DVD or CD. This means that the majority of the cost of game development is labor, making labor one of the most important markets for the industry. In 2000, the industry paid approximately \$7.2 billion in wages. In the

U.S., more than 220,000 people were employed by the industry, more than any other country (Aoyama & Izushi, 2004). In the U.S., salaries range from around \$20,000 to slightly over \$100,000 (Deutsch, 2002; Zito, 2000). Entry level game designers may make as much as \$45,000, while experienced designers may earn up to \$120,000 (Deutsch, 2002). On the lower end of the spectrum, paid beta testers may earn \$9-11 per hour and up to \$25,000 per year (Hutaff, 1996; Zito, 2000). The work that testers perform, however, only accounts for approximately \$50,000 to \$100,000 out of a game's production budget. For Triple-A games, this accounts for ten percent or less. Workloads become heavier, particularly in the polishing phase, with employees being routinely asked to work 80 hours or more. EA typically employs 40 to 50 testers, but during the summer crunch time that is necessary to release games for the holiday season, it has been known to employ as many as 250 workers. However, smaller publishers and developers often cannot afford their own paid testers and either have to farm the job out or rely on volunteer testers (Zito, 2000).

Industry labor practices draw heavily on ties with the computer industry; in other words, much more on Silicon Valley than Hollywood. As power has concentrated, the industry has relied increasingly on stock options and intangible benefits as motivators for employees similar to the computer industry (Richtel, 2005b). And like Silicon Valley and the computer industry in general, there is little union presence in most of the industry. One estimate suggests that less than 15 percent of all games are produced under any form of union contract, though information on which unions is not available (Gentile, 2005a).

At the same time, the video game industry is experiencing the same problems that the larger computer industry is facing. Increased labor costs, combined with labor pressure for better benefits and wages, has resulted in both the larger computer industry and the video game industry looking abroad to manufacture their products. Howard Stringer of Sony recently oversaw a corporate plan referred to as "Project USA" which, in order to save the company \$700 million, cut 9,000 jobs (Reuters, 2005b). Moreover, it is predicted that as many as 15 percent of high tech workers in the U.S. will abandon the profession by the year 2010, and this figure does not include deaths or retirement. The software sector of the computer industry lost 16 percent the jobs from March 2001 to March 2004. And in the first quarter of 2005, information technology firms in the U.S. laid off approximately 7,000 workers (Konrad, 2005). It is possible, however, that those positions are only being relocated to cheaper markets around the globe.

Exporting of jobs has become big business of itself, with companies formed specifically to help outsource labor. The value of all outsourced jobs surpassed \$16 billion in 2004, and it placed more than 500,000 jobs in Bangalore, India alone (Reuters, 2005a). The average programmer in India earns the equivalent of \$20 an hour in wages and benefits compared to \$65 per hour for U.S. workers (Konrad, 2005). For some, the threat of more jobs being sent overseas suggests the need for workers to consider unionization, particularly in industries like the video game industry which have traditionally resisted unions (Richtel, 2005b).

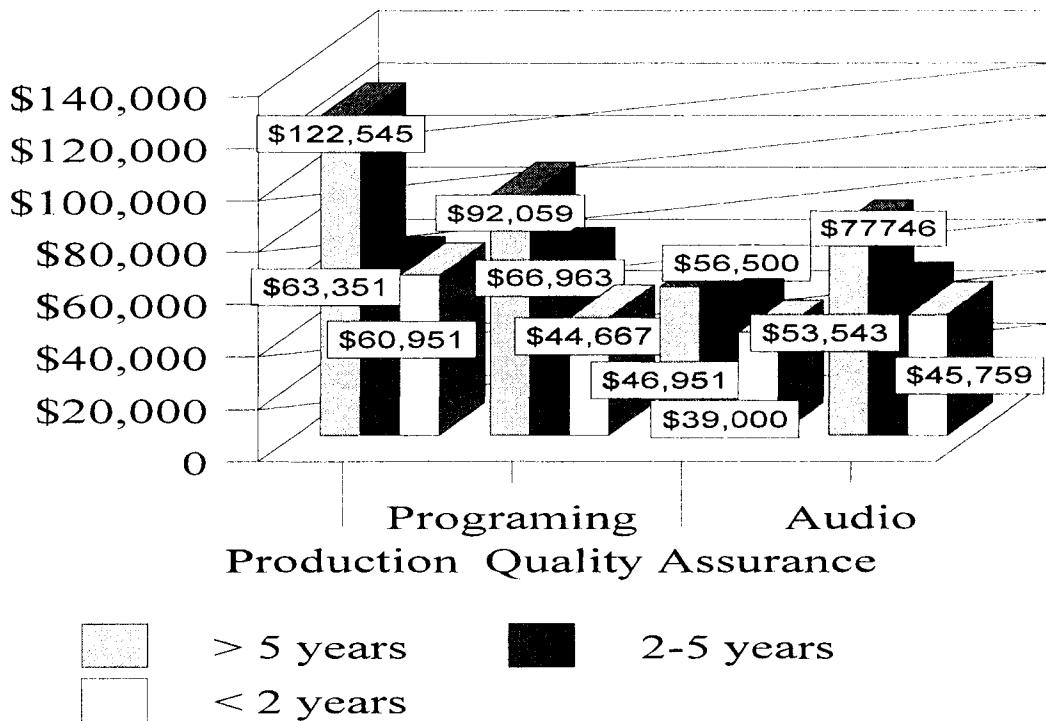
It's also important to realize that the products being produced by the computer and video game industries are, like films, increasingly global in nature. As discussed in

Chapter Three and Four, the international markets for video games have come to serve as predictors of what may be successful in the U.S. The drive to create products that will work in all markets has resulted in a need to localize products. In some cases, this serves to remove questionable content considered inappropriate for a particular market, while in other cases, it may be because additional explanation or content is needed.

Employment in the Video Game Industry

With both governments globally subsidizing national video game industries while video game design programs are being created at universities around the world, it is clear that work in the video game industry is seen as desirable. For this reason, increasing attention is being given to understanding who is working in the industry. The Information Technology (IT) industry has demonstrably higher levels of male employment (Martin, 2002). The video game industry is no different, with one study demonstrating that 92.9 percent of employees in the industry are male (IGDA, 2004b). Female employment in video games is higher in the United Kingdom, but not by much. In the UK, almost 10 percent of employees of the industry are female (ELSPA, 2004). Employees in the industry are also typically much younger than in other industries. Approximately 18 percent of employees were over the age of 35; the remainder were between 18 and 34 in age. In keeping with this, most employees reported that they've been working in the industry less than eight years, which would put them at the lower end of the wage scale (IGDA, 2004b). Figure 6.2 compares salaries by job type and years of experience within the industry.

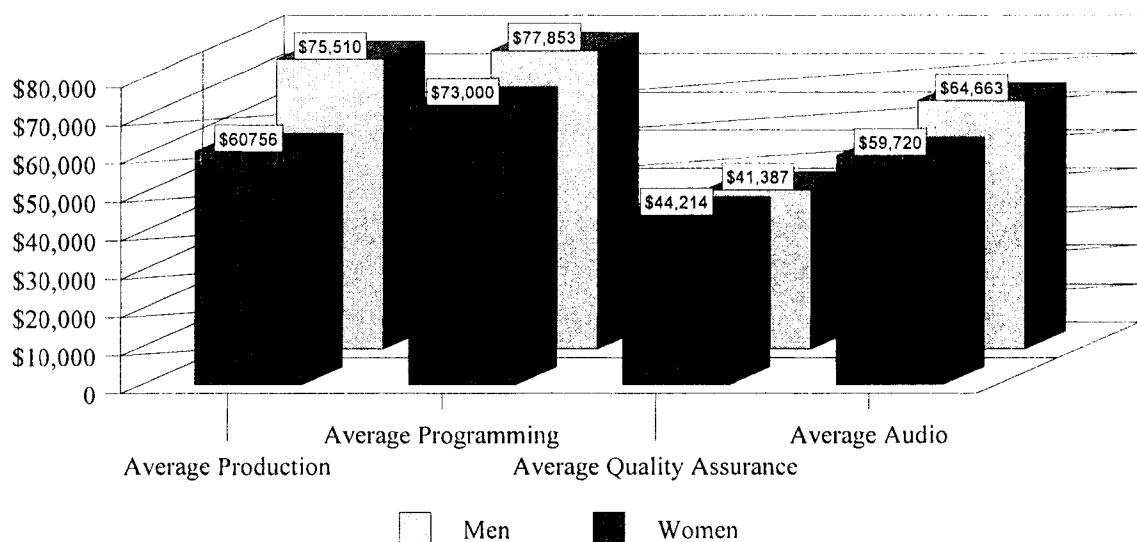
Figure 6.2: Video Game Industry Salary Comparison by Career and Years Experience
 Source: (Olsen, 2003)



Job satisfaction within the industry has been one of the key issues faced by those employed in game design. According to the ELSPA study, the typical worker stays in the industry only three years (ELSPA, 2004). This trend is seen in the U.S. as well. Most U.S. video game employees indicate not only that game production wasn't their only choice of careers; in fact, 34 percent planned to leave the industry within five years (IGDA, 2004b).

Careers in the industry can be divided into four broad categories: programming, design, quality assurance, and audio positions. Industry surveys demonstrate that two factors have more impact on salary within the video game industry: years of experience

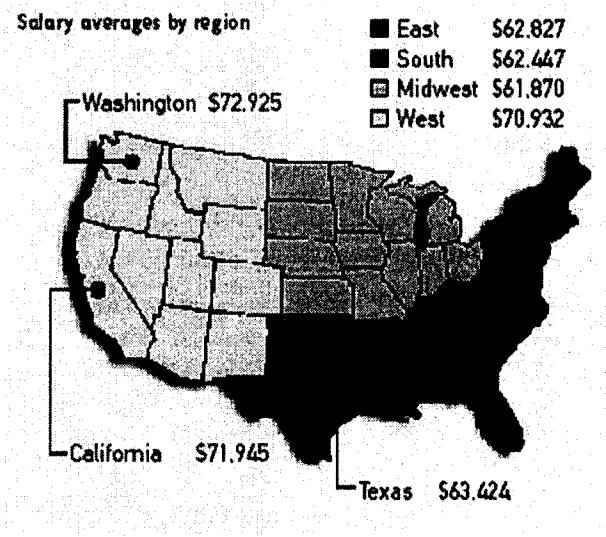
Figure 6.3: Video Game Industry Wage Comparison by Gender and Career Path
 Source: (Olsen, 2003)



and gender (Olsen, 2001, 2002, 2003). Wage disparities by gender abound, with female employees likely to make less than their male counterparts with the same experience in all careers paths except in quality assurance positions (Olsen, 2003). Figure 6.3 breaks down comparison in wages by gender for the three fields.

But the highest wages in the industry go to management positions rather than to the creative positions, as would be suggested under theories of information labor (DOL, 2005). Exact figures are hard to obtain, not just because of the transnational system of labor and ownership in the video game industry, but also because the systems of categorization of work within the U.S. have recently changed to a new form (DOC, 1997). Moreover, the measurement scale is not precise enough to separate video game labor from other information in the economic census. What does become clear is

Figure 6.4: U.S. Video Game Industry Wages by U.S. Region
 Source: (Olsen, 2003)



that the industry is going to move towards increasing international ownership and towards international audiences (Dyer-Witherford, 2002).

Within the U.S., there are also wage differences by region. The differences seem to reflect the industry's reliance on the computer industry's organizational structure. The highest paying jobs are centered on the west coast, with the northeast and the south vying for a distant second, and the Midwest region last (Olsen, 2003). This likely owes to the organization of the high tech industries around tech centers, such as Silicon Valley, Austin, Texas and major cities in the Northeast (Mosco, 1999). Figure 6.4 provides a breakdown of the industry's view of the major regions of production and their corresponding average salaries.

One factor not included in these industry surveys is that of education. This is surprising because education is typically one of the defining features of laborers in

information industries, but also because there is an increasing focus on creating education programs targeted specifically at the video game industry. These programs will be discussed in the next section.

Education and the Video Game Industry

As Chapter Four indicated, the video game industry has been increasingly targeted as a possible site of government support in many countries. One way this has been instituted has been through education. In the United States, a number of schools, including the University of Southern California, Massachusetts Institute of Technology, the University of Washington, and Carnegie Mellon University have instituted video game design courses and programs (Loftus, 2003). As the technologies used to create video games have become more affordable, it has become possible for even small universities to incorporate video game studies and design into their programs (R. Wallace, 2004).

These programs tend to be professional in nature and heavily interdisciplinary. For example, Carnegie Mellon University's Entertainment Technology Center draws faculty expertise from both the University's Fine Arts program and from the Computer Science department (Deutsch, 2002). While a majority of programs target undergraduates, there are also graduate options available. The first Master's program was at the Rochester Institute of Technology in New York, but both Georgia Tech and USC recently now offer Master's programs in game design (Deutsch, 2002; Schiffmann, 2002).

Video game design programs tend to be small. Southern Methodist University accepts only 100 people per year for a program which will take 18 months and cost students \$37,000 in tuition (Carlson, 2003a). Some programs are even smaller. The DigiPen Institute of Technology in Washington, sponsored in part by the industry, graduated eleven students in its first year, and only 36 in 2001 (Schiffmann, 2002). The programs also reflect the industry's gender breakdown, attracting predominantly male students. This is the case at the Institute of California, in Orange County, where only 25 students out of 150 are female (Swett, 2003).

The industry, too, has taken the idea of games education seriously. The larger software publishers have leveraged their power to help support particular programs. These ties have also allowed the major companies to use access to college students for research and marketing purposes. EA, for example, sponsors college advertisers and what they term "guerrilla marketing tactics" to help promote their game to college students. (Miller, 2005). Each year, Game Developer Magazine publishes a career guide for the industry and sponsors surveys on employment. One concern expressed by the industry is how well such programs actually prepare students for jobs in the industry (Moledina, 2004b). Such programs may face particular problems as the industry is experiencing not only rising labor dissatisfaction but also high levels of outsourcing. Table 6.1 provides a breakdown of the number of schools offering video game studies programs by country.

Case Study: EA and Labor

Perhaps the most extreme example of labor difficulty in the video game industry centers around practices at software publisher Electronic Arts. As discussed in Chapters Three and Four, EA modeled itself on the Hollywood film industry. However, unlike Hollywood, EA and the video game industry have evolved with little union representation. This is because the video game industry, like the computer industry it formed from, has tended to reward employees with stock options and bonuses based on company performances. But such bonuses have become increasingly rare even as the video game industry has increased its profitability. Moreover, because Electronic Arts is the largest software publisher in the industry, exhibiting considerable power, its employees serve as an excellent gauge of industry trends.

In the past five years, there have been two high profile cases of labor disputes in the video game industry. The first involved software giant Electronic Arts. EA, based in Redwood, California, has become the banner case testing whether Silicon Valley practices will continue to hold sway following the dot-com fall (Richtel, 2005b). The company, which employs more than 5,800 people, has relied on the industry standard production time period, complete with the mandatory “crunch time” at the end of the production cycle (EA, 2005; Fritz, 2005b). More than half of the company’s employees, however, work outside of the United States, including 1,700 employees in Vancouver, Canada (Richtel, 2005b).

Table 6.1: Number of Programs with a Video Game Studies Component by Country

Source: (IGDA, 2005b)

Country	# of Programs	Country	# of Programs
Argentina	1	Italy	1
Australia	9	Japan	2
Austria	2	Malaysia	2
Belgium	1	Mexico	2
Brazil	4	Netherlands	2
Canada	38	New Zealand	3
Chile	1	Norway	1
China	1	Pakistan	1
Denmark	3	Singapore	4
Finland	1	South Korea	2
France	3	Spain	3
Germany	3	Sweden	11
Greece	1	Switzerland	1
Hong Kong	3	Thailand	1
India	2	Turkey	1
Ireland	2	U.K.	38
Israel	1	U.S.	169

The crisis at EA began when the wife of an employee posted an anonymous blog describing the labor conditions of her husband, an unnamed software engineer at EA.. Her complaint indicated that her husband, who earned somewhere between \$50,000 and \$70,000 a year, worked so much unpaid overtime that were he paid for it, he would stand to gain an additional \$15,000 to \$20,000 annually (Richtel, 2005b).

EA employees also get no compensation time for their overtime work, which prompted other lawsuits against EA (*EA: The Human Story*, 2004). The first lawsuit was filed in California in July 2004, and a second was filed later in the year. A similar suit was also filed against Sony Computer Entertainment (Richtel, 2005b).

These lawsuits have caused workers to question the computer industry practice of rewarding employees with stock options and bonuses. Bonuses at EA range from five to thirty percent of employee salary. But according to the industry managers paying overtime would change the industry from one valuing entrepreneurship to one where employees simply punch a clock. EA considers employee benefits to include an on-site gym, flexible work schedules, and on-site amusement facilities which include basketball courts, pool tables, and, of course, video games. Also available for employee health are a masseuse and acupuncturist. (Richtel, 2005b). One result of the complaints leveled by ea_spouse was the creation of an organization geared to monitoring industry practices, called Gamewatch.org (*Followup to EA: The Human Story*, 2004). Beyond this, however, these lawsuits raised the question of unionization in an industry which has always resisted unions. Part of the difficulty centers around EA's use of a standard Silicon Valley measure of productivity: revenue per employee. EA claimed a million dollar per employee rating in 2004, but this would change drastically if overtime and comp time were factored in. EA, however, has stated that if workers demand too much, the company would have no choice but to find new sources of labor outside of California and possibly even in another country with cheaper labor costs (Richtel, 2005b). The company already has a major studio system

in place in Vancouver (N. Dyer-Witherford & Sharman, 2005; EA, 2005) and already reduced productions at its West L.A. studio which was only recently opened. The company laid off 60 workers and is down to 320 developers and 50 individuals working in music, marketing, and mobile content as part of this reduction. Among the games produced at the EA Los Angeles facility include *Lord of the Rings: The Battle for Middle Earth* and *Golden Eye: Rogue Agent* (Fritz, 2005b). Even with the current labor difficulties, few experts predicted any success in unionizing the video game industry from within. One union organizer, from WashTech, has been trying to unionize high tech workers for years, but has only attracted 450 members since 1998 (Richtel, 2005b).

But a second labor problem has presented itself to the industry. As discussed in Chapter Five, the video game industry has formed close ties with the Hollywood film industry and is relying on more and more content from the film industry's catalogues. But as this has occurred, video games have also become more dependent upon Hollywood talent, particularly for voice work. Again the video game industry must ask itself how to deal with unions.

Case Study: Hollywood Unions, Video Games and Labor

With the increase in licensed games discussed in Chapter Five, the video game industry has become more dependent on unionized talent, particularly for voice work. In 2004, almost 2,000 unionized actors found work in video games, including such notables as Ewan McGregor, Toby McGuire, and Willem Dafoe (Gentile, 2005a). As

the profits in the video game industry have risen, actors have begun to demand a bigger share of the pie. Recent contract negotiations between the industry and the Screen Actors Guild (SAG) and the American Federation of Television and Radio Actors (AFTRA) focused heavily on ensuring that voice actors for video games received compensation including health care, pensions, and residuals (Brodesser & McNary, 2005). Unlike film and TV, however, the video game industry does not have a history of negotiating with unions or of paying residuals to anyone involved in the creation of games (Brodesser, 2005). And because video games' profitability is less than films, residuals were a hotly contested issue in the negotiations. The previous contract provided minimum pay rates with no provision for residuals, in part because so much of video game voice work has always been done in house (Brodesser, 2005). The video game industry is also wary of residuals because currently only 10 to 15 percent of all games involve unionized workers (Fritz, 2005f).

The negotiations were also difficult because representatives of the video game industry had come together informally, rather than as a unified group (Brodesser, 2005). Ultimately, a contract was ratified between the representatives of the industry and AFTRA., calling for a 36 percent pay hike but still grants no residuals (Fritz, 2005f). SAG's negotiating committee endorsed the same deal, but the general membership voted it down. This will likely limit future negotiations with SAG, making AFTRA the powerhouse union to deal with the video game industry (Fritz, 2005g). Part of SAG's worry was the unchecked ability of the video game industry to act like movie studios and television networks, rather than simply as publishers

(Brodesser, 2005). As discussed in Chapter Five, this tendency is only likely to increase and will no doubt result in more heated negotiations between unions and the video game industry in the future.

Part of the trouble faced by union organizers is that union membership has been declining across media industries. In some industries, like telecommunications, labor membership has declined by as much as fifty percent since 1985 (Grover et al., 2005). And as these industries continue to expand internationally, the difficulties of organizing will only increase.

The Player Challenge to Labor

Finally, the video game industry is also sensitive to questions of player-centered labor. This is particularly true for multiplayer online games, where players contribute to the play environment. In 2004, there were almost 350 such games, with more than 10 million players (M. Wallace, 2005). In these games, players often create virtual goods for trade, and these goods have made their way into real markets via online services like eBay (Castranova, 2002). For instance, a player of the hit game “Ultima Online” earned more than \$25,000 by trading in goods he created in the game.

Estimates suggest that the real world value of these virtual goods and services yields almost \$880 million per year, which does not include the cost of the games or subscriptions (M. Wallace, 2005). The industry has tried to enforce the idea that any such property belongs to the company, but this has increasingly been challenged by governments and players alike (Klang, 2004).

One game, titled *Second Life*, has taken a different approach, allowing players full intellectual property control of what they create in the game. Estimates suggest that an average player's transactions are worth almost \$1,000 a month, and this amount is increasing roughly 25 percent per month. One player even claims to have made \$100,000 per year in the game's real-estate business (M. Wallace, 2005)

Like play-testing, which, particularly for smaller publishers and developers, is often done free by players and fans of a game, persistent online worlds develop in part because of the value added through player interaction. And because of how much time players have spent working, the reaction to changes in these unintentional markets has prompted players to demand a change in industry practice (IGDA, 2004a). Industry response has been mixed, with some companies trying to techniques similar to *Second Life*, though rarely granting full control over property. These games are particularly popular globally, and so it may be that the U.S. industry has to take its cue from foreign countries and foreign game designers. One such example is the Chinese company, Shanda Entertainment, which has created its own eBay-like market for players to sell characters and game-produced goods, with Shanda taking a cut of the profit (Grover et al., 2005).

Video Games in the Larger Industrial Context

The high technology and computer industries have been growing for over a decade. One study, conducted by the Information Technology Association of America, found that while more than 1.6 million technology jobs were being created

Table 6.2: Revenue Per Employee Comparison
Source: (Hoover's, 2005)

Company	Employees	Revenue (millions of \$)	Revenue per Employee
EA	6,100	\$3,129.0	512950.8
Atari	492	\$395.2	803252.0
Microsoft	57,000	\$39,788.0	698035.1
Sony	162,000	\$66,923.0	413104.9
Disney	129,000	\$30,752.0	238387.6
Time Warner	84,900	\$42,089.0	495747.9
General Electric	307,000	\$151,300.0	492833.9
General Motors	324,000	\$193,517	597274.7
Monsato	12,600	\$5,457.0	433095.2
Haliburton	97,000	\$20,464.0	210969.1

each year, almost half would go unfilled (Obermayer, 2000). In the Internet sector that includes companies such as AOL primarily, more than 100,000 new jobs were created between 1995 and 1997. Despite the high growth of jobs in the computer industry, there are few examples of labor unionization; workers are instead lured with promises of stock options and public offerings (Ross, 1999). The service sector in the United States accounts for more than 75 percent of the Gross Domestic Product (GDP). The high tech and dot-com industries have been a substantial part of this (McCammon & Griffin, 2000). However, in 1998, the wild growth that the industry had been experiencing came to a dramatic halt and, ultimately, led to layoffs (Race, 2001). These layoffs have spelled difficulty for the industry.

The software publishing sector, which includes video games, is ranked by the U.S. Department of Labor as the fastest growing industry in the U.S. economy. But, in fact, it represents only a small portion of overall employment in the United States. According to the U.S. Bureau of Labor Statistics, there were 128,827,360 employed individuals in the U.S. However, less than one percent of the population is involved in the video game industry and their wages are largely comparable to other sectors of the economy (BLS, 2005a, 2005b).

Moreover, as with video games, the software industry as a whole is consolidating, with less than seven percent of employers accounting for more than two-thirds of employment (DOL, 2005). Employees in the video game industry are typically younger than workers in other industries (Zito, 2000). In addition, as jobs begin to migrate overseas, the perception of employment in the software industry is becoming more and more negative (Konrad, 2005).

But the industry has used a peculiar measure of success - revenue per employee. As Table 6.2 shows, however, this measure skews the value of companies, allowing even small companies to appear disproportionately valuable. A small company like Atari, with a small revenue, appears more productive to investors than industry giant EA, agricultural giant Monsanto, and industrial titan General Motors. Such a measurement allows an industry which produces a small part of the nation's Gross Domestic Product to much more instrumental, even as jobs its jobs are being moved increasingly overseas.

Conclusion

This chapter examined the nature of employment within the video game industry. It began with the assumption that such employment would be an ideal example of information labor, as it is creative, requires a high degree of education and skill, and because it relies heavily on the creation and manipulation of information itself. It must be noted that virtually all studies of labor in the computer and video game industries have focused on software production rather than hardware.

One of the most important things to realize about the production of video game commodities is that they are heavily driven by the value added of highly skilled employees. The overall cost of manufacture for video games comes almost entirely from labor costs. This makes the labor market one of the most important factors in understanding the video game industry. Video games workers meet the criteria of information laborers but do not have the power in either markets or production that theories of the information society suggest.

The study of the video game industry confounds the myths of information labor's giving workers more power and satisfaction. Not only do industry studies show that an increasing number of video game employees experience decreasing job satisfaction, but they also show that as the economy falters, the perceived benefits of such employment are progressively eroded. The fall in the value of stock options and bonuses in the industry following the dot-com collapse of the late 1990s is only one example of this.

It is also significant that gendered patterns of employment can be seen in the industry, with the most technical and creative positions not only going to males, but often with significant wage disparities. Combined with the skewed gender representation in video game employment, it seems likely that the industry's desire to market more effectively to wider audiences may suffer due to lack of representation within the industry.

Both of these concerns are related to the industry's current labor disputes, which have brought the question of unionization to a sector of the economy known for its wariness to unionization. Although attempts at unionization have thus far been ineffective, because the industry is strengthening its ties with already unionized entertainment industries such as film, television, and recorded music, this may change in the future. The potential for unionization faces one other limit which is increasingly globalized production. This system of organization has proven particularly difficult for skills-based unionization to overcome, which may suggest a change in union tactics and organization are needed to more adequately respond to high tech industries.

Finally, the question of what it means to work in video games is influenced by the challenge of value added labor by players. While player added value is currently limited to players of MMORPGs, as the sophistication of new systems continues and the convergence of technologies into consoles and portable devices allows them to become media hubs, the problem will grow. And the industry will find themselves faced with questions about both the ownership of content created by paying players.

CHAPTER VII

CONCLUSION

This study has attempted to contextualize the production of video games within the framework of the cultural industries. This view sees video games as commodities produced according to particular logics with particular goals. It is hoped that by explaining these logics that some light can be shed on the more common questions surrounding games. But this study has also argued that video games do not function like other cultural industries, but are, in fact, representative of information industries.

In addition to describing how the industry is organized, this study has tied the video game industry with other media and communication industries. There are a number of limits on the success of video games, and because of this, the video game industry seeks ties with other successful media industries. Because video game popularity has led to the rise of game studies, and to the rise of academic programs, an understanding of how the industry and its processes relate to other forms of communication is important.

In order to better understand these areas, this study has relied on a variety of methodologies. It has drawn on institutional history to help provide some understanding of how the video game industry developed and why. In-depth interviews were used to help understand the process of production and to document the

experience of individuals working in the industry. Document analysis was used in conjunction with both of these methodologies to help discover not only what the industry has said and done in its development, but to help understand how the industry is perceived by other institutions. By studying the documents of the companies and individuals involved in the industry as well as the historical documents describing the industry's formation, a very detailed understanding of the system of organization and negotiation within the industry was made possible.

In order to address these issues, this study focused on six research questions. These questions helped to structure the study and its organization. The research questions were as follows.

R1) What is the structure of the video game industry?

R2) What is the relationship between the video game industry and other communications industries?

R3) What are the commodities produced by the video game industry?

R4) What markets are involved in the video game industry?

R5) What is the production, distribution, and promotion process involved in the commercial video game industry?

R6) What is the role of labor in the production of video games?

R1) Industry Structure

As Chapter Four discussed, the industry has been organized into a system that draws on the computer industry, the toy industry, and, in particular, the film industry.

Chapter Three demonstrated that this evolution was not accidental. Rather, the industry actively tried to mirror these industries, drawing particular on logics of production into their own industry in the process. The major sectors of the industry are hardware manufacture, software development, software publishing, and retail.

Power within the industry has been concentrated in the hardware manufacture and software publishing industries. Four companies, Sony, Microsoft, Nintendo, and Electronic Arts, dominate the industry, accounting for a majority of revenues. The first three companies represent both hardware manufacture and software publishing, while Electronic Arts has managed to achieve its success based solely on software publishing. Currently, a majority of the revenue for the industry comes from software, but this owes to an intense competition between the three console makers which has driven them to drop the prices of their consoles to a point that they gain little profit from them.

The concentration of power maintained by Sony, Nintendo, and Microsoft has allowed the companies to insulate themselves from market shocks, regulatory demands, and efforts from other sectors to influence how the industry functions. Because all three companies manufacture both hardware and software, they are less subject to demands from the software sector about control of content and questions of labor practice.

When negotiations between these sectors does occur, it is typically through strict licensing deals, with hardware manufacturers dealing with software publishers rather than smaller developers. Again, this has served to limit the ability of small

companies and their workers to exercise power within the industry. This has led to increased consolidation in which software publishers have bought smaller developers. In contrast, the retail sector of the industry has had to deal with both hardware and software manufacturers. It remains largely unaffiliated through ownership or licensing with either the hardware or software sectors, and while concentration is high, there is still a significant amount of room for small vendors to enter the market.

The industry is also highly globalized, relying not only on international audiences, but on a system of production and ownership which is also international in scope. This has led to interest from a variety of government initiatives, particularly in Europe and Australia, hoping to draw production to their countries. At the same time governments around the world are struggling to deal with issues of public perception about the industries (such as media violence).

Regulation of the industry is primarily accomplished through self-regulation. The industry's rating system is one of the most stringent of any communications industry. And retail associations have responded to consumer pressure by increasing regulations and punishments for retailers selling games to inappropriate individuals. But there is still intense scrutiny from various State sources, both within the U.S. and outside. While their investigations initially focused on violent content, increasing attention is being given to worker's rights and to matters of intellectual property.

R2: Relationship with Other Media Industries

As Chapter Three demonstrated, even from its earliest days, the video game industry relied on its ties with other media industries. Ties between the industry and film extend back into the late 1970s, when film companies first began to explore the possibilities of video games as licensed properties. The relationship has not always been successful, however. Both the film industry and the video game industry have experienced losses in the process. Setbacks hit the video game industry first, almost ending one of the major companies, Atari. But Hollywood has taken its lumps, as well, having bought into and then sold out its interests in the video game industry in both the early 1980s and the mid-1990s.

But as the video game industry stabilized, video games again became attractive to other media industries. And when the industry recently surpassed Hollywood box office revenues, it was seen as a signal that the industry was around to stay. A relationship between video and film provided a number of advantages. Video games have become important to other industries as well. Both television and recorded music have experimented with licensing their products through video games. The advantage of these ties is three-fold. First, it allowed the creator of a brand to earn additional profits. Second, it has allowed the product of one industry to piggy-back on the marketing of the other. Third, reliance on such products has been seen as a means to minimize the risk of releasing products for both industries. The downside of this alliance has been an over-reliance on licensed content in spite of consumer

demand as discussed in Chapter Five. Industry concentration and strategic alliances with other industries has served minimize the industry's responsiveness to consumer and labor demand in the market.

The impact of video games on other media industries goes beyond their licensing ability. In part this is due to the industry's ability to bring technologies together, allowing their products to be used on a variety of platforms and to mimic the functions of a number of other industries. The release of the next generation of consoles by Sony, Microsoft, and Nintendo is expected to bridge the gap between video games, television, and personal computers among other devices. In part, Microsoft's foray into video games can be seen as an attempt to ensure its influence over as many computer devices as possible. Two other examples of this convergence can be seen in the growing ties between the video game industry and the mobile phone and online markets. This has allowed video games to draw audiences away from other media. Studies have shown that increasing numbers of people in the 18 to 34 demographic, one of the most important groups for advertisers, are shifting their time away from television and other media to video games.

The cultivation of this demographic by the video game industry has led to increased interest from advertisers. Currently, the majority of video game revenue comes from the sales of the games, but it is expected that advertising revenue will become a major source of income in the future. Already a number of experiments incorporating advertising into video games are being conducted. Of these, the most problematic is the creation of advertiser driven games. The rise of advertising in video

games will likely result in further insulation of the major companies from consumer demand while also raising the question of advertising's impact on content.

Video games also pose other problems to other media industries. The increasing sophistication of video game technology coupled with the frequent inclusion of game engines has resulted in unexpected consequences for other industries. Players can now produce their own movies using tools included in their games. This development has been dubbed "machinima" and is drawing increasing attention from film makers and advertisers.

R3: Commodities

As Chapter Four demonstrated, the primary commodities produced by the industry are video games. But there is increasing focus on licensed products related to video games, including specialized hardware. These products, however, are typically licensed to smaller producers who shoulder most of the risk.

As the industry has matured, other product lines have emerged. Increasingly, the industry licenses its products to toy manufacturers and other media industries for conversion into film and television. Such products are prone to becoming advertising driven. In the television and film industries, this has resulted in a reliance on formats seen as most reliable, such as the action film, at the cost of innovative content. It is not hard to imagine such a fate befalling the video game industry. Typically, these licensing deals have originated from industries other than video games. But an example of the video game industry moving its commodities into other areas can be

seen in Microsoft's announcement that it would produce its own film based on its "Halo" franchise.

But increasingly the industry has developed its second commodity: the audience. This is similar to the dual-product market formula characteristic of most media industries and will force the industry, albeit not unwillingly, to consider the role of advertising in its games. For some game genres, such as sports, this shift will be less problematic, but for others, it may prove particularly intrusive.

The other major concern for the industry has been the increase of player created content. This value added problem is particularly crucial for online role-playing games in which players devote increasing hours to creating virtual goods. These goods, which often include the avatars that players use, have started to seep into the real world. Items are being traded on eBay, and some companies are beginning to work on ways to negotiate the ownership of these goods.

The commodification process is a means of making social relationships concrete. By producing video games as commodities, not only are items being created for exchange, but eventually, the way in which they are created and how they are used comes to be seen as a natural state. At the same time, the relationship between labor and management undergoes a similar process. In the video game industry, the production of video games as a commodity has evolved into a system in which dissatisfied laborers come to view their dissatisfaction as natural and unassailable. But there is a second relationship which is also cemented by the creation of the video game commodity: the relationship between the consumer and producer. In this case,

expectations become fixed about what types of games should be made and when. Costs, planned obsolescence, and what types of games are made seem natural. This results in the view from outside the industry that video games do not function as art, nor do they function politically or as acts of speech. They are simply playthings, with nothing to say and unworthy of consideration.

R4: Markets

Increasingly, the video game industry is developing international markets for its products. However, most markets are currently in industrialized countries. The industry has worked to maintain distinctions between these regional markets. This has been accomplished in two ways. First, products developed for one platform in a particular regional market do not work on platforms in another regional market, a tactic also seen in DVDs. Second, there is an increasing tendency to localize a product, tailoring a game's contents to particular local attitudes and practices. Product markets have focused on platform developments, and as the industry seeks out ties with other media industries, it is incorporating a variety of capabilities not previously seen in video games such as the ability to play music, display photographs, and access the Internet.

But as Chapter Six showed, one of the most crucial markets for video games is labor itself. While the video game industry seems the ideal example of an information industry, the ability of workers in the industry to influence production doesn't match the myths of the information society. In an information industry, labor is seen as

having significantly more power than in other industries. Labor is seen as having higher mobility, higher education and skill levels, and higher job satisfaction. And yet this isn't the case in the video game industry. Because the development of software is structured with most major producers owning or licensing with small, production groups, this has resulted in a situation in which workers need to work harder to ensure they will continue to find new projects. It is significant that workers in the industry are expressing increasing job dissatisfaction and often view the industry as a stop over on their way to more stable, lucrative careers.. The rise of game studies programs in universities is seen by the industry as one way to address the continuing need for labor. But the high levels of industry concentration will continue to limit the effectiveness of labor to influence the production process.

R5: Production, Distribution, Promotion, and Retail Processes

The typical production time for a video game is increasing, now taking as much as two years for a product to be created. As the development time for games has increased, so has the cost of development. Because of this, the industry is looking for licensed content from other media industries. This allows the industry to both minimize risk and take advantage of marketing and advertising paid by others.

Game development involves four main phases, with the labor required increasing as the project nears completion. It is at the end of the process that localization of products occurs. It is also during this end period that the “crunch time” which is at the center of much of the job dissatisfaction in the industry centers.

During this period, employees are often called upon to work 80 hour weeks with no days off and no compensation for overtime.

The promotion of games has became a major part of the process, and budgets often equal that of production costs themselves. Like the toy industry, the video game industry has focused the majority of its production on the Christmas buying season, and to a lesser extent to tie ins with Hollywood's summer blockbuster films. This has resulted in a majority of advertising dollars by the industry being spent during the holiday season.

The production of games is driven by the capability of the hardware. The hardware sector has worked on a system of two to three year periods of planned obsolescence. As the capability of hardware increases, the demands and costs of software development rise as well.

Distribution of products is handled by the major companies - the hardware manufacturers and the software publishers. As with DVDs and recorded music, large general goods stores like Wal-Mart and Best Buy have come to make up an important part of the retail process. But rental of games is on the rise, and here concentration is similar to video and DVD rentals. At this time, the major companies in the industry have expressed little interest in gaining control over the retail side of the industry, but this may change in the future, particularly as the cost of development rises.

R6: Labor

Labor in the video game industry exhibits a number of interesting characteristics. Theories of the information society would suggest that labor should be highly satisfied, educated, mobile, and compensated. But industry studies suggest that not only employee dissatisfaction is on the rise, but that compensation has been limited to models based on the overarching computer industry. Worker mobility is increasingly limited by industry consolidation and transnational production practices.

Beyond this, however, there is a distressing breakdown in terms of gender. In this sense, the video game industry is similar to the computer industry. Less than ten percent of the video game industry's employees are female, and in almost every career track, are paid less money even with similar levels of experience. The industry is also dominated by younger workers, on the lower end of the pay scale.

Contrary to what theories of the information society would suggest, the best paying jobs are not the creative, highly skilled positions. Instead, management makes considerably more though it makes up a smaller part of the industry as a whole. And because employees are increasingly treating the industry as a stepping stone, fewer and fewer employees are reaching the higher pay levels contingent upon experience.

In part the desire of employees to find more stable jobs in other industries owes to the video game industry's measure of its own success as revenue per employee. Such a measure overvalues the industry's production, as compared to other companies and industries indicates. This measurement provides disproportionate value to

smaller companies with even a single big hit because it doesn't account for other debts of the company or for fluctuations in audience demand. As such, management must seek to drive employees to work more at lower costs in order to guarantee favorable productivity within the industry.

Because labor makes up the bulk of production costs, as game complexity increases, so will industry costs. This has prompted the industry's reluctance to change its wage and benefit packages. In spite of this, unionization is not seen as an option by most people, including workers and managers, within the industry. This may change, however, as video games become increasingly tied to licensed Hollywood products and Hollywood labor, which is highly unionized. But unions themselves are embedded within historical contexts. Present union formulations may not work well with the video game industry, but a shift in organization - from trade unions to industrial unions, for example - might allow unions more success in gaining members from the video game industry and other high tech industries.

Limitations

Perhaps the greatest difficulty in this study was the problem of gaining access to sources within the industry as well as in supporting industries. The structure of the industry creates a number of disincentives to employees' open discussion of industry practices. While interviews were conducted, it became very difficult to find anyone willing to go on record about industry practices in regards to labor. To help address this problem a variety of primary sources were used, including reports by industry

organizations and companies. These included reports on labor practices, employee satisfaction, annual reports, industry responses to regulation, as well as testimony in court cases. Among the groups consulted were the Entertainment Software Association, the International Game Developers Association, the European Leisure Software Producers Association, as well as the Motion Picture Association. The historical section also relied on documents from industry observers in the time period, particularly news reports and industry discussion. In addition, the posts by ea_wife and others were invaluable in framing the discussion of labor in the industry.

This study did not attempt to address concerns of audience reception or effects. While an understanding of production certainly helps explain the nature of some video game content, it is not sufficient to account for audience demand or the impacts of exposure to such games. What is provided by this study is a description of how video games are created as commodities. Institutional constraints that affect these other areas of concern – effects, audiences, and content – can only be understood through such an examination.

Suggestions for Further Research

There are a number of areas suggested by this study which warrant future observation. Many of these relate to the industry's exploration of other media functions. In particular, a more thorough examination of the impact of advertising and video games is needed. Similarly, the ties between media industries are increasing, and while ownership is currently distinct, it seems likely that cross-ownership may

again become desirable, particularly to already large media conglomerates seeking greater control of their licensed products.

The impact of video games' convergence with other forms of communication, including telecommunication, also warrants further study. As the industry vies to create "media hubs," the scope of what video game hardware may incorporate is likely to increase in unforeseen ways. But this should also result in increased competition from outside the video game industry. Such moves are already being seen from the online industry, as companies like Yahoo begin to explore ways of incorporating video games into their business model.

Finally, there has been little concern given to the impact of video games outside a very few countries. Because the industry is becoming increasingly international, the demand for an understanding of the formation of national industries, markets, and audiences will be needed. Moreover, the current focus has been on industrialized countries. There is little data on the reach of games elsewhere in the world, though it seems likely that they are beginning to play a more vital role in a variety of other cultures.

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