Paradigm shifts in the video game industry

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Abstract

Purpose – The purpose of this paper is to identify, characterize, and discuss paradigm shifts that have occurred in the video game industry with some emphasis on competition and competitiveness.

Design/methodology/approach – Basically, the paper depends upon a review of the literature associated with video game development. Past history is taken from texts and academic papers dealing with the subject. More current observations are taken from the business and popular press. These observations are placed within a context associated with the classic papers on industry evolution, paradigms, paradigm shifts, competition, and competitiveness.

Findings – It is difficult to capture present shifts in such a fast-growing industry, but these shifts seem clear: the original entry of video games into the arcade sector that led to the industry and the demise of pinball; the development of the home cartridge and console that made the industry a home-based phenomenon; the entry of independent game-publishers that made the industry a two-tiered one; and the development of massively multiplayer online role-playing games (MMORPGs) that changed the way games are played.

Originality/value – The video game industry is an interesting one to follow. To an extent, its development characterizes our generation – fast paced, technologically oriented, and targeted toward the young and young at heart. This paper takes the subject away from a historical or anecdotal approach and places it within the context of industry evolution, paradigms, and paradigm shifts. It thus should be of value to students of not only video games, but also the evolution of rapidly growing industries and establishment of competitive advantages.

Keywords Video games, Competitive strategy, Entertainment industry

Paper type General review

Introduction

If we have learned anything after five years of writing papers on the video game industry and game development, it is very difficult writing a paper that is not outdated by the time it gets into publication. One finds oneself continually clipping columns from the popular and business press, scouring trade newsletters, and monitoring homepages as well as updating interviews from associates in the industry. Nevertheless, we persist. In this paper, we look at paradigm shifts in the industry. On an overall basis, a paper oriented toward paradigm shifts may actually involve an easier task than those that we have written characterizing industry sectors. In shifts, one is concerned with changes in pattern development (Fulford, 1999). These shifts thus supersede the continual changes and improvements that have made keeping current in previous papers so difficult.

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In a way, one develops an addiction similar to the one attributed to some gamers who pursue this form of entertainment. The industry just remains too fascinating to let loose. Simply put, its development characterizes our generation – fast paced, technologically oriented, and targeted toward the young and young at heart. From the very beginning, the industry has been associated with fun. The construction of the first computer game is credited to Steve Russell, an Massachusetts Institute of Technology (MIT) student who produced the code for Spacewar in 1962 (Kent, 2001) – now less than 50 years ago. As is the case in many developments dependent upon new technology, this advance was done within the context of demonstration of expertise and not for profit. Nevertheless, in a very short time, this game became unbelievably popular and was copied to most computers in the USA. It was not the inventors or developers who gained in the industry, such as Russell, but rather the individuals who made it a business. That is, entrepreneurs interested in making money saw the opportunity to make a business of this development. Specifically, Nolan Bushnell, who enjoyed playing Spacewar while at the University of Utah, went on to start Atari, the founding firm in the industry. These developments were marshalled largely without government subsidy at any level, but depended upon individual or venture financing. Further, the industry quickly became international both with regard to distribution and development. From the earliest days, Atari both shipped to and developed competitors in Europe and Japan. Italian illegal game copies were so good at the time that the only way one could identify them was by a mislabelling of an Atari's address on the products. Finally, the industry has been one of disruptive growth. It takes an older person to even remember the popularity of Atari in terms of today's dominance by Nintendo, Sony, and Microsoft.

The popularity of games continues (ESA, 2008; Snider, 2008). For a decade, total sales in the industry have rivaled similar figures from Hollywood box office revenues; presently, individual blockbuster introductions such as *Grand Theft Auto IV* in the first week, estimated $500 MM, now exceed box-office smashes such as *Spider-Man 3* ($337 MM) and *Pirates of the Caribbean* ($309 MM). Beck and Wade (2004, p. 17) assert that the gamer generation (generation G) is larger than the "baby boomer" segment that has driven the US economy for years. Whereas, baby boomers were associated with a time period, generation G is growing with each new generation. Basically, gaming is associated with culture development in this sector. Consequently, it is expected that not only will entertainment preferences be affected in coming years, but such things as personnel practices and management. Additionally, developments move quickly in this industry, and one year can make significant differences in participants, markets and products. Cadin and Guerin (2006) define this characteristic as the velocity of the industry. There are cycles of purchase throughout the year, "ordinary" product life cycles of games themselves and console cycles. With a growth rate between 10 and 15 percent per year over a 25-year period, velocity is high. That is, cycles are short. The latter cycle of consoles perhaps best defines this rapidity. They are now four to five years in duration – down from six years for the preceding consoles (Cadin and Guerin, 2006).

It would appear that there are some basic changes occurring in the industry. These changes include attempts to involve a wider market, shifts in game involvement, and locations of game development. The purpose of this paper is to identify, characterize, and discuss paradigm shifts that have occurred in the video game industry. It thus contributes to our understanding of competition in industries that happen to be

characterized by rapid growth, entrepreneurial opportunism, major technology advances, and high, but fickle consumer demand.

Background

Paradigms and paradigm shifts

Words are important. They shape our assumptions about reality. In fact, in the definition of paradigm used by Banner and Gagne (1995, p. 13), they write, "The set of beliefs, attitudes, expectations, assumptions and values that determine how people construct their own personal *reality* is called a paradigm" (emphasis added). It thus is appropriate that we examine the meaning of the word as we write about paradigms and paradigm shifts in the paper. One problem is the increased use of the word in varying situations. In this regard, Fulford (1999) has warned in general upon the trendy use of words and, in particular, upon using the term paradigm loosely. In his reflection on the subject, it was suggested that the word had been used to such a degree both commonly and in a scientific sense that it had tended to lose its original meaning.

Kuhn (1962) is perhaps responsible for attaching importance to the word. We call this form the strong or special usage of the word. That is, in his monogram on the history of science, Kuhn suggested that the term could be used for the set of accepted beliefs about a field. A paradigm in this usage thus went beyond being a theory and in fact included theories. In assessing the classics, e.g. Newton's *Principia and Opticks*, he wrote:

> [...] – these and many other works served for a time implicitly to define the legitimate problems and methods of a research field for succeeding generations of practitioners. They were able to do so because they shared two essential characteristics. [...] Achievements that share these two characteristics I shall henceforth refer to as 'paradigms,' a term that relates closely to 'normal science'" (Kuhn, 1962, p. 10).

Clancy (1989, p. 173) and Banner and Gagne (1995, p. 13) have accepted this "super theory" definition – "when a theory has gained nearly universal acceptance, it becomes a paradigm – the essential manner in which thought is organized for the particular field" (p. 172).

In his postscript to the second (1970) and third (1996) editions of the monogram, however, Kuhn (1996, p. 175) allowed as he had two meanings on the word in mind in his original writing:

> On the one hand, it stands for the entire constellation of beliefs, values, techniques, and so shared by the members of a given community. On the other, it denotes one sort of element in that constellation, the concrete puzzle-solution which employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science.

It is the second meaning that comes closest to our usage of the term in this paper. That is, the word also has a meaning in common usage (Fulford, 1999) and in this paper we return to the common usage of the term that reflects upon the "one sort of element in that constellation." It has been used as a synonym for idea, style, format, pattern, hypothesis, and/or approach. In that regard, we will associate the term with approaches, which closely returns us to the original meaning of the word as a pattern. In our special usage, it will refer to approaches in the industry, most frequently business approaches in the individual sectors being discussed.

That brings us to the term "paradigm shift" and the meaning associated with it. Kuhn (1962, pp. 91-109) noted that science does not progress smoothly, but goes through

periods of turbulence in which one paradigm replaces another. It was during the period that there was a change in beliefs, a paradigm shift as it were. Banner and Gagne (1995, p. 13) state this concept simply as "A dramatic shift in the way a collection of people constructs its personal realities is called a paradigm shift." In this paper, we again have our own usage of this term as we associate it with competiveness and competition in the video game industry. It is necessary to relax the association with a collection of people and frequently refer to a single person or single company insofar as much of the developments in rapidly growing industries to be led by individuals.

Industry evolution, innovation and organizational development

The description of the development of the video game industry is facilitated by a model that contains the essential features of its evolution. Within this framework, Bhide (2000, pp. 3-19), has made extensive observations on the origin and evolution of new businesses. His work suggests that his main propositions are captured in an investment-uncertainty-profit model. In this model, or paradigm as it were, he observed that new businesses (Microsoft as an example), evolving or transitional businesses, and large well-established businesses pursue opportunities with different levels of irreducible uncertainty, investment requirements and likely profits. He continues:

> At the start-up stage, entrepreneurs [. . .] pursue highly uncertain projects that do not require much up-front investment and that are unlikely to generate large profits. In order to grow, entrepreneurs invest in larger and somewhat less uncertain projects. When companies [. . .] eventually reach maturity, they focus on initiatives that require significant up-front investment – with commensurately large expected profits – and relatively low uncertainty.

In this model, it is suggested (Bhide, 2000, p. 313):

> [. . .] entrepreneurs tend to start businesses in niche markets. They take advantage of small opportunities, serving specialized needs or taking advantage of information gaps to buy cheap and sell dear. Their ventures usually do not have much lasting impact on industry structure. Fragmented markets remain so. But when entrepreneurs, who may have started out exploiting exogenous market conditions, have out-of-the-ordinary will and ability, their effort to build large, long-lived firms help transform the economic landscape." [. . .] The effective pursuit of a strategic rather than an opportunistic approach requires entrepreneurs to have qualities and skills that are not important in starting improvised businesses. The pursuit of audacious goals requires a high level of ambition and tolerance for risk. [. . .] And the effective implementation of a strategy requires constancy, the capacity to inspire and intimidate, and the ability to learn new skills (Bhide, 2000, p. 363).

Both industries and organizations tend to evolve. Mensch (1979, p. 47) has suggested that early in an industry's evolution, basic innovations dominate development. Later, these basic innovations provide the foundation for continued growth of the industry. With regard to specific organizational development in the industry, we have found Greiner's (1972) model to be particularly useful (Zackariasson *et al.*, 2006). One may recall that model asserts that organizations tend to go through five growth stages – creativity, direction, delegation, coordination, and collaboration on their way to maturity. Likewise, there are five sequential crises that organizations tend to experience during growth – leadership, autonomy, control, red tape, and one left unnamed. Insofar as many firms are still relatively young, the ability to maintain creativity and supply effective leadership is still important in maintaining their stability.

Readman and Grantham (2006) have a concise, but comprehensive, historical summary of the industry that includes eight generations of development and thus traces its evolution. As suggested by Kent (2001), early competition was generic – against pinball as it were on the one hand and home entertainment on the other. For the period from the early 1960s to the mid-1980s (Readman and Grantham's first three eras), companies essentially were determining what benefit consumers were gaining from games, what the business was going to be, and whether they would be able to compete. It was pretty clear that opportunity existed, but the question was "for whom?" Consequently, established companies such as Magnavox and RCA from home entertainment, Bally, Mattell and Coleco from toys and games, and Fairchild and Apple from technology were into video games at one time or another and dropped out. Each of these companies had their moment of success in the early industry, but it was a start-up that set the tone for subsequent development.

Paradigms, paradigm shifts, competition, and competitiveness

From this point, we would like to discuss the paradigms that have evolved in the industry, their shifts, and the impact that they had on competition and competitiveness. We see four shifts as being important, i.e. the entry itself of video games into arcades, the development of the home cartridge, the entry of independent game developer-publishers, and the development of massively multiplayer online games (MMOGs). Table I assists in summarizing observations.

Initial shift – establishment of the sector
It is reported that Russell and his student colleagues considered briefly the opportunity to develop a business around his innovation, but came up empty (Kent, 2001). That step

No.	Development	Impact	Nature of shift	Change in competition and competitiveness	Characterization
1	Entry of video games into arcade sector	Shift from pinball to electronic entertainment	Major – changed way segments looked at entertainment	Rapid rise of new entrants. Established firms faced change or decline	Initiation of a sector in the entertainment industry
2	Development of home cartridge	Shift from arcade to home and eventually hand-held	Business approach in taking advantage of available technology	Similar rise of new entrants with eventual shake-out	Could be seen as an industry life cycle change
3	Entry of independent game developers – publishers	Changed industry structure, but increased market size	Major within the industry	Shook power of integrated developer-to-platform firms	Eventually set up co-opetition presently effective
4	Development of MMOGs	Changed way games were played. Emphasized computer nature	Shift in both distribution and payment	Sophistication helped some firms, hurt others. Big impact in far east	Really an industry life cycle change

was accomplished by Nolan Bushnell, Founder of Atari in 1972, who developed the archetypical firm in the industry and perhaps the industry itself. A complete theory on successful entrepreneurs remains elusive (Bhide, 2000, p. xvii). Nevertheless, enough is known of the framework generally associated with success among these individuals to appreciate that Bushnell saw the opportunity that existed in video games, had the background to pursue it, and possessed the persistence to convince others to cooperate with him in his endeavor. Within five years, the industry grew to the extent that Coleco and Nintendo entered as competing firms. Within seven years, the industry had added home and hand-held systems to arcades as the primary outlet for games.

A paradigm was thus established that suggested that firms could succeed in satisfying the need for entertainment through the offering of "video games." This paradigm featured strong individuals around whom integrated firms were formed. That is, although all individuals were not as famous as Bushnell, Kent in his history was able to associate developments in the industry with strong, known individuals. The firms tended to be vertically integrated. They were built upon a system that incorporated construction of the equipment on which games were played, the games themselves and distribution of this combination to secondary suppliers. The general business model, as exemplified by Atari, was one of selling consoles as cheaply as possible and making profits from the game software (Kent, 2001, p. 193). From the beginning, these firms supplied their domestic market and exported to an international market in an oligopolistic fashion.

The early market for games was in the arcade sector, which thus established the first shift to be associated with video games, i.e. they became a substitute for popular, coin-operated, mechanical devices that could be played in public places for a small fee. Initially this market had to be developed and one of Atari's early businesses was developing and servicing a local network of outlets in which its video games were played. This entry was the first paradigm shift and it was a major one; it initiated video games into the entertainment segment of the economy. As it turned out, Atari grew rapidly; pioneers are not always so lucky. The growth of a single start-up company, however, is not felt initially in the industry that is being displaced. That comes later. Bally, in this case, for instance, attempted and did get into video games for a while (Readman and Grantham, 2006) but was not nearly as successful as the new entrants. The industry held on until the late 1990s when it was hit hard by the evolution of high-tech arcade games and affordable computer video console games like Xbox and Playstation. Pinball manufacturers such as Bally have fallen by the wayside, and now there is a single remaining maker of pinball machines (Pollette, 2009).

Switch to the home and beyond
Although commercialization of video games occurred through coin-operated machines in arcades, there were other individuals who saw a future in home entertainment. Magnavox, in fact, had work being done as early as 1968, which resulted in the development of its Odyssey system and a number of patents protecting the system (Baer, 2005). Commercialization was attempted in 1972, but the approach never really got off the ground (Stahl, 2006), undoubtedly due to some combination of wrong product, wrong price, wrong promotion, and wrong distributor. It did, however, introduce the actual attempt to place games in the home and was a paradigm shift.

Readman and Grantham (2006) place the first generation in the 1972-1977 period with the boom coming in 1977-1981. Participants in addition to Atari were Bally, Magnavox, Coleco, and Mattell. In terms of competition, the innovator got some competitors and financially strong ones at that. In terms of competitiveness, however, Atari held its own. Three of the other four dropped out of the industry in the 1982-1984 period (Readman and Grantham, 2006). Basically, we see this shift as being an industry life cycle change. Such things tend to be common in growing industries. Firms that can keep up, in this case with continued game development, stay in the hunt; ones that cannot, drop out.

Redefining the industry
A significant event during the evolution of the industry was the formation of Activision in 1979 as a third party video game developer-publisher (Kent, 2001). This paradigm shift redefined the industry and is a major shift (or at least close) as defined by Kuhn. The old paradigm of having a vertically integrated company dominating an industry where specialists could do portions of the work better, just was not stable – as has been shown many times. Consequently, the industry became multi-tiered. That is, there is one branch that is built on vertically integrated hardware producers; Nintendo remains from the early period, but Sony and Microsoft have replaced Coleco and Atari. Another branch of the industry is built upon the publishers who provide games for the three main platforms as well as distribution and promotion. Most importantly, they provide financing so that independent development houses can exist. Readman and Grantham (2006) argue that these publishers are particularly important in establishing value in the industry.

At first, the competition was cut-throat; Atari seemed to be constantly suing Activision for making cartridges for their platforms. Eventually, however, the two firms decided that there were common opportunities in co-operating. That is, game availability tends to drive hardware sales. Thus, although Atari was developing and publishing their own games and thus competing with Activision, they also benefited from Activision's games. Consequently, an element of co-opetition, discussed in this special issue (Bengtsson *et al.*, 2010; Koch *et al.*, 2010) was established. It is somewhat interesting in this situation that there is among producers of the same product or service. That is, developers compete against developers regardless of whether they are vertically integrated or independent, likewise with publishers. There is also competition among platform producers not only among the big three for sales; they also compete among each other in order to get publishers and developers to co-operate with them. Microsoft, for instance, found that in order to be a factor in the Japanese market, it had to have games developed for their platforms specifically for that market and is taking steps to get those developers (Kane, 2008; Dvorak and Guth, 2005).

Development of MMOGs
The introduction of the internet in the mid-1990s opened up possibilities for video games that supported many persons playing the same game, from a handful to many thousands. Although modems had made this possible since the late 1970s, the internet became both technically more advanced and many times cheaper for the user. With these new possibilities, a new genre of video games evolved and in 1997 the game *Ultima Online* (Origin) was launched (Bartle, 2004). This was a so-called massively

multiplayer online role-playing game (MMORPG). What characterizes this genre is that the game has a persistent world that can be accessed at any time over the internet; there are many thousands of people coexisting in the same virtual world, and the game centers on the development of a digital representation (an avatar) in this virtual world. MMORPG evolved from the text-based adventures (multi-user dungeons) played over modems in the 1970s up until the early 1990s – but the success of these MMORPGs exceeds that of the text-based many times over. At this point, the game *World of Warcraft* (Blizzard) has dominated the genre since its launch in 2004 and has over 11.5 million persons playing the game (www.blizzard.com/us/press/081121.html (accessed April 9, 2009)). Another kind of game in this group is the massively multiplayer online social games which focus on socialization instead of objective-based game play. There is a great deal of overlap in terminology with "online communities" and "virtual worlds." One example that has garnered widespread media attention is Linden Labs' Second life, emphasizing socializing, world-building, and an in-world virtual economy that depends on the sale and purchase of user-created content (http://en.wikipedia.org/wiki/Massively_multiplayer_online_game (accessed April 9, 2009)). Some business schools, in fact, have used these platforms to have their students set up firms there so they can enjoy the experience of managing a business.

Introduction of these games has accomplished at least three things. First, they tended in part to extend the market from the core segment of teen men insofar as they brought a social element to gaming. For instance, in a study of *EverQuest*, an MMORPG, Yee (2001) reported that 47 percent of participants considered their virtual friends to be comparable to their physical-life friends; 15 percent of the respondents considered their virtual friends to be better than their physical-life friends. Presently, 40 percent of women play games and women over 18 represent the fastest growing segment in the market (www.theesa.com/facts/gameplayer.asp (accessed April 4, 2009)). In fact, adult women represent a greater portion of the market (34 percent) than men 17 or younger (18 percent). A quarter of game players are over 50, a portion that is sure to increase in an aging population, and video games have entered senior centers and nursing homes to accommodate this popularity. Second, they have blurred the line between video games and other entertainment fields such as sports to the extent that they are now endorsed by a number of associations governing the respective activities. Five years ago, when MMOGs were still fairly young and people were still trying to figure out what they had on their hands, we published a paper on MMOGs where services were seen as similar to the tourism sector (Zackariasson and Wilson, 2004). The virtual world gave participants a place to go and they went there apparently for the same reason tourists go places (Wilson and Wilson, 1996) – for activities, for events and for surroundings. The popularity of the sports games suggests that activities are important in these games either as a complement or a supplement for activities in the physical world. Third, payment for these games is by subscription, a change from the one-time cost of basic games. Inadvertently, this change triggered an approach to the Asian market. Until *World of Warcraft* came along in 2005, *Lineage* by NCSoft in Korea held the record for subscriptions going back to 1998. That outlet was through video cafes, which may be the outlet for the next big market-developing nations.

Of course, this development had an impact on competition. The major developers such as Blizzard Entertainment came to the fore. Further, smaller developers in convention games got squeezed as market share went to MMOGs. The major effect,

however, may have come in the cost of doing business. The bar has been raised on quality at all levels. Traditional games are now taking two years and $20 million to develop; MMOGs maybe five years and $50 or a $100 million. Even now, this inflation is producing consolidation in the industry and more will be expected in the future. Vivendi's Blizzard merged with Activision to form the largest firm in the industry (Mullen, 2008); electronic arts offered $2 billion in a hostile take-over bid of take-two interactive and was turned down (Wingfield, 2008c). Others are turning to alternate sources of funding. Sony's PS3 will get in-game ads (Wingfield, 2008a) and Microsoft has acquired Massive, Inc. apparently with the same idea in mind (Guth and Wingfield, 2006). Other organizations have moved along the lines of offering games for free with revenue generated through advertising and/or in-game purchases (Lawton and Kane, 2009; Schiesel, 2008; Wingfield, 2008b).

Reflections

We do not mean to denigrate the many changes going on in this industry by focusing on these four paradigm shifts. Unquestionably, there are a lot of things happening, e.g. this industry churns. Weekly, if not daily, there are observations in the business press that reflect on the present competitive status of each of the four elements in the industry – development studios, publishers, console manufacturers, and distributors. These observations relate to not only competition within each of the elements, but the nature of the value chain within the industry itself. The creativity of groups, the ongoing demand of gamers for more excitement, the availability of funding, and the enhancement of underlying technology – all make for a dynamic situation. Further, the industry has segments into which to grow, both geographically and demographically. All changes, however, do not meet the standard of a paradigm shift. Rather, some are characteristic of the types of evolutionary changes Mensch (1979, p. 47) discussed in terms of industrial cycles. That is, the innovations of Higgenbotham, Russell, and Baer were the basic inventions that established the industry. Modifications, although sometimes significant, have taken us through Atari and Activision to where we are today.

Primarily these changes are evolutionary, and it is only the exceptions that one could call paradigm shifts. Admittedly, there are some close calls. For instance, it is suggested that refinements in graphics to the point that they are now of movie quality are evolutionary. One could argue the contrary. There indeed have been orders of magnitude improvements in game content from the paddles and moving dot of the early tennis games, through Pac-Man, to the action games of today. Although rather spectacular, they seem naturally associated with growth – going along with some improvements in film making. It also might be noted that there has been a turn in game development that has opened up educational and/or therapeutic opportunities for niches (Woods, 2006; Levesque, 2009). Although success of these games was assisted by their entertainment value, a shift occurred associated with the ancillary focus – a focus not only in content but customer segment as well. For a while, these offerings are likely to exist as niche businesses. In the long term, it remains to be seen if they will fold into main-line game development or continue to be a specialty; the former would seem evolutionary, the latter might be considered a shift.

One also might cite the shift from an individual/small group developer to one of coordinated, large group activity (*European Management Journal*, 2006). Early games were developed by individuals, i.e. Russell at MIT (Kent, 2001). Activision, in

comparison, had a core team of 40 people working on *Call to Duty: Finest Hour*; total cost was $25 million and it took 26 months to go from preproduction to market entry (Beller, 2009). One consequence of the increased production cost is the search for alternative approaches to increase revenue streams. It has been noted, for instance, that Sony's PS3 will get in-game ads (Wingfield, 2008a). Microsoft has acquired Massive, Inc. apparently with the same idea in mind (Guth and Wingfield, 2006).

Clearly, developments on the supplier end of the change are also important. Cadin *et al.* (2006) suggest that the paradigm for the industry may be switching from a US motion picture industry model to one that combines some aspects of what we call an athletic shoe model. That is, although the developers of games require a substantial skill level, this skill is broadly distributed. Consequently, games will tend to be developed in those locations where it can be most cheaply done. In this regard, the practice of Ubi Soft to which Cadin *et al.* (2006) refer may become industry standard, e.g. locating subsidiaries in low-cost countries, compared with electronic arts practice of locating subsidiaries in its markets.

Among console manufacturers, there have been some significant changes in market share since the introduction of the latest versions of platforms. There is still a big three as of this writing. Sony, however, which had been the biggest of the big three with its 60 percent market share, is now the little brother. Nintendo has taken the leadership position. It stayed out of the Sony-Microsoft battle for the living room and introduced the Wii. It was cheaper than the offerings of the other two and also had the action capabilities that turned out to be attractive to potential buyers. With console cycles down to four to five years in duration (Cadin and Guerin, 2006), it will soon be clear whether this approach represents a paradigm shift. It would appear that Microsoft has foreseen this possibility with the development of its action-oriented video camera (Wingfield, 2009a, b). Although Sony is having financial problems (Wakabayashi, 2008), it seems unlikely that it would retreat from this market; its business strategy has consistently been associated with patient money. Nevertheless, its third place position in console sales bodes poorly for future dedicated game development. A certain circularity exists in the industry – independent developers produce games for the popular consoles; consoles are popular because they have a large number of games available for them.

The changes that have occurred, the ones we label paradigm shifts, we see as having major impact on competition – specifically the last two in Table I. With regard to MMOGs, we must indicate we do not anticipate that games of this sort will totally replace console games sales. At present, console games are outselling these games at about a six-to-one ratio (ESA, 2008). Although this ratio may narrow in the future, it seems unlikely that console games will disappear entirely – just as pinball has not disappeared in the face of video games. Rather, we think the MMOGs will drive quality to continuously improve in all games. Further, we see the impact of these games spreading to education, sports, healthcare – it is hard to conceive of a limit. One of us is on record (Zackariasson, 2007, p. 165) as writing:

> It is my belief that virtual worlds, both detention and extension worlds, will grow in number, size and complexity. This development is bound to be accompanied by an increasing impact of virtual worlds on the physical world.

With regard to the co-opetition that started with the entry of Activision and subsequent developments, we see that of course, as continuing. It may not be along the

lines of having console manufacturers, however, dominate the cooperation side of agreements as they have done historically. That remains to be seen as personal computers (PCs) establish a greater share of the market. Readman and Grantham (2006) already have asserted that the publishers are the organizations that add value in the industry. Thus, it could be they who determine the elements of co-operation in the future. A lot will depend upon survival and new entries into the industry; if past is prelude, that is likely to continue.

Conclusions

Keeping current in this industry is difficult because of the changes occurring, which seem ubiquitous. Nevertheless, we have tried to identify the paradigm shifts that have had, and will have, impact upon competition and competitiveness in the industry. Historically, the two developments that have established the present industry was the entry into what then was considered the pinball sector and then subsequently into home entertainment. Presently, the development of MMOGs and a co-opetitive structure will affect the near future at least. Of course, it could be argued that other changes could also be considered paradigm shifts. Of these, we see good cases could be made for:

- The emphasis on PCs and MMOGs as a direction in game development especially as it affects the Pacific Rim and developing economies.
- The adoption of an "athletic shoe" approach to game software, where more of it is being done in developing countries.
- Microsoft's shift to a hardware producer and retailer as being significant.

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