case eleven
Rivalry in Video Games

Teaching Note

Synopsis

The case outlines the competitive situation in the video games hardware industry in early summer 2002. Sony with its PlayStation continues to dominate the world market, but is facing challenges from Nintendo (with its Cube) and Microsoft (with Xbox). The stakes are high – total world sales of video games hardware and software are likely to reach $31 billion in 2002. Past evidence suggests that, in the hardware sector, the market leader scoops the great majority of the industry profit pool. Moreover, the ability to establish a de-facto standard means that, once a company has established market leadership in games consoles, it is difficult to unseat that leadership. The result is intense competition for market leadership in which the challengers are willing to lose substantial sums of money just to get their machine established in the market. The focus of the case in terms of decision making is on the future: what strategies should Microsoft (MS) and Nintendo pursue in order to wrest market leadership from Sony, and how can Sony best reinforce its leadership and resist its challengers? However, most of the case is concerned with the history of the video games industry. The case takes us through all five generations of games consoles, from the 4-bit machines (dominated by Atari during 1972–85, to Nintendo and the 8-bit era (1986–91), to the 16-bit machines when the market was shared by Sega and Nintendo (1992–5), to Sony's domination of the 32-bit, 64-bit, and 128-bit machines since 1995. The purpose of this historical review is to demonstrate the characteristics of competition and allow students to identify common key success factors across the different product cycles.

This note was prepared by Robert M. Grant.

TEACHING OBJECTIVES

I use the case to examine strategy and competition in a technology-based, global industry where there is complementary hardware and software and where there is a tendency for standards to emerge.

The case allows students to learn about:

- the sources of network externalities and the industry characteristics that result in the emergence of technical standards;
- the characteristics of competition in "winner-take-all" markets;
- the formulation and implementation of strategies designed to win standards wars;
- managing complementary products in order to maximize value appropriation – in this case, product systems that comprise both hardware and software;
- designing strategies to challenge incumbent market leaders in technologically dynamic industries;
- designing strategies to sustain market leadership in technologically dynamic industries.

POSITION IN THE COURSE

I use this case in the section of the course where I deal with competition and strategy formulation in technology-based industries.

ASSIGNMENT QUESTIONS

1. What are the key success factors in the video games hardware industry?
2. In what sense and for what reasons is this a "winner-take-all" industry?
3. What strategies and what circumstances have allowed newcomers to unseat established market leaders?
4. [Last names beginning A–F:] What should Microsoft do?
   [Last names beginning G–P:] What should Nintendo do?
   [Last names beginning Q–Z:] What should Sony do?

READING

R. M. Grant, *Contemporary Strategy Analysis* (5th edn), Blackwell Publishing, 2005, chapter 11; C. Shapiro and H. Varian, "The Art of Standards Wars," *California Management Review*, Winter 1999.

CASE DISCUSSION AND ANALYSIS

What Are the Key Success Factors in the Video Games Hardware Industry?

I start by asking, "Which companies have been successful in this industry since its inception?" and then, "Why?" This results in a table on the blackboard that looks something like this:

DATES:	1972–85	1986–91	1992–5	1995–8	1999–2002
Product generation:	4-bit	8-bit	16-bit	32-bit/64-bit	128-bit
Market leader:	Atari	Nintendo	Sega and Nintendo	Sony	Sony
Reasons for success:					

From the mass of factors that can be used to fill the boxes in the bottom row, I ask one of the class members: "Looking across these different phases of the industry's history, what common *key success factors* characterize the strategies of the leading companies?"

This should elicit the following points.

1. *Technological progressiveness in hardware.* The market leaders were typically also leaders in the technology. Aspects of technological leadership included:
   - The successful companies were typically leaders in introducing machines with more powerful processors (which offered faster clock speeds and the capability to support more sophisticated games).
   - Leadership in enhanced graphics capabilities – this depended not just upon microprocessor power but also graphics cards and the operating system.
   - A wide range of software – unlike application software for business computers, consumers of video game consoles seek variety. A small range of games drastically restricts market appeal.
   - "Killer" applications – variety of software is not the only factor; the key driver for purchasing a games console is likely to be the popularity of a blockbuster game (Space Invaders and Pac-Man for Atari; Super Mario Brothers and Donkey Kong for Nintendo; Sonic the Hedgehog for Sega; Lara Croft for Sony). This role of killer applications is similar for other sectors – the major factor that drove the sales of the IBM-PC to market leadership in 1981–4 was its ability to run Lotus 1-2-3, the spreadsheet program.

2. *Controlling the quality and availability of software.* The collapse of Atari was primarily the result of its losing control over the supply of games. Conversely, Nintendo's tight control over the development, quality, release, and distribution of its games was a major factor in its success and its highly effective rent appropriation. If anything, Nintendo's control over software was probably too tight – the key issue was a balance between attracting games developers (in order to get a wide variety of software) and exercising control in order to coordinate a steady stream of software releases, and appropriate the returns to software.
3. *Marketing.* Central to the success of the market leaders was the building of a strong advertising campaign. Building consumer awareness and establishing brand strength was a factor in the success of all four companies (Atari, Nintendo, Sega, and Sony).
4. *Timing.* With the exception of Atari, all the other companies entered a market that was dominated by an incumbent. The ability to take market leadership from an incumbent depended critically upon entering at the right stage of the product life cycle – when the previous product generation was stagnating, when the technology for a new product generation was emerging, and when a new demographic cohort was entering the "target customer demographic window."
5. *Coordinated launch.* Timing relates not simply to the market launch, but also to the ability to coordinate all aspects of market launch. Capturing market share requires the simultaneous release of both the console and a range of games titles, the availability of adequate numbers of consoles and copies of games in the retail stores in time for the launch, and the coordination of advertising and promotion. Given the number of different companies involved in supplying the different aspects of these systems, synchronizing all the different elements is a critical task. The problematic launch of the PlayStation2 points to complexities involved and how missteps can create a window of opportunity for rivals.

In What Sense and for What Reasons is This a "Winner-Take-All" Industry?

Winner-take-all industries are those that tend to be dominated by a single company that then scoops the major part of the industry profit pool. In the case of the video games industry, there is a clear tendency towards global market dominance by a single company. The only instances of market leadership being shared occurred during 1992–5 when the world market for 16-bit consoles was split between Nintendo and Sega. Also, during 1997–2000, Nintendo was a close second to Sony. In terms of profitability, the evidence points to the market leader appropriating most of the industry profit. Thus, Nintendo was strongly profitable during 1991–2 when it

was leading the world market, then again in 1997–8 when Nintendo was close behind Sony. The only time Sega came close to earning profits above its cost of capital was 1991–4, when Sega was sharing market leadership with Nintendo; the rest of the time its financial performance was dismal.

So, what are the forces that caused the industry to be dominated by a single firm?

1. *Conventional scale economies.* Development and launch costs for a new games machine are very high. The 128-bit machines were costing several billion dollars to develop and launch (including direct product development costs, manufacturing investments, software development, and advertising and promotion). Such development costs required amortization over a large market base.

2. *Network externalities resulting in convergence to single standard.* A key feature of the different games consoles is that they utilize proprietary technologies, with the result that software is not interchangeable between them. The proprietary nature of the technology is found both in the hardware (different processors and hardware configurations) and in different media (cartridges and CDs) and operating systems. So, what are the network externalities that cause customers to converge to a single technology (and hence to a single manufacturer)? Two types are important:
   - Customer–customer externalities. Game players like to buy the type of console that other games players are buying to allow them to interact through sharing games and playing against one another. Such linkages are probably particularly important among young players where the social aspects of playing video games tend to be more important. The move to online interaction is likely to increase these effects. Less tangible – but possibly more important – are network externalities relating to social conformity. Among teenagers in particular, the pressures for social inclusion and acceptance are very strong. Hence, if half the class have PlayStation 2s at home, it may seem contrarian and nerdy to buy a Microsoft Xbox.
   - Hardware–software complementarities. In any market where the hardware and software are co-specialized, where customers desire a wide range of software, and where the software is expensive to develop, software developers will tend to write for whichever hardware platform they believe will give them the broadest sales base. As a result, the market-leading games console will attract a broadening array of games titles, while consoles with secondary market positions will attract declining support from developers. The outcome is similar to the personal computer industry – once the Wintel standard had established market leadership over the Apple Mac during the mid-1990s, feedback mechanisms resulted in Wintel steadily gaining the support of applications software writers, while Mac experienced growing problems in offering a wide range of contemporary applications. The problem is especially great for new entrants. For all MS's strength as one of the world's richest and most powerful technology companies, when it announced its Xbox, it had trouble attracting the leading games publishing houses and developers.

What Strategies and What Circumstances Have Allowed Newcomers to Unseat Established Market Leaders?

Given the presence of network externalities, it would seem that once a company has established market leadership, positive feedback will ensure the persistence of market leadership. Yet, as we have seen, in this industry market leadership has been displaced through several of the generation life cycles. Why has this happened? Several factors appear to be important:

- Technological advantage – the opportunities for innovation are constantly presented, giving outsiders and underlings the potential to leapfrog incumbents in technological progressiveness.
- The emergence of new demographic cohorts. New potential consumers are continually emerging into prime game-playing age. These young players have no prior investments in hardware or software and create an opportunity for newcomers and underlings.
- Incumbents screw up. The greatest opportunities are presented by incumbents getting it wrong and creating the opportunity for a nimble-footed, purposeful newcomer to get it right. Atari oversaturated the market and went into a slump; Nintendo was (paradoxically) too successful at appropriating the rents from its games systems and encouraged developers and retailers to welcome Sega and then Sony.

However, even with these factors, overcoming the power of the installed base and market share preeminence of an established leader is exceptionally difficult. Critical to establishing success is to build a positive feedback through effective management of expectations. Thus, to be successful, every new entrant second-line producer has had to build expectations of market success. This requires massive investments in software development and commitments to major advertising and promotional budgets prior to entry. To gain the necessary threshold level of available new games at launch it will almost certainly require internal development of a core of games. The key is to build expectations among game publishers and developers, retailers, and final customers that the new console is going to be a winner.

Strategy Recommendations

Microsoft

A key issue here is to recognize MS's strategic goals in entering the video games market. MS has been a master of managing strategic options (e.g., at the beginning of the 1990s it was developing software for the Wintel standard, for the Apple Mac, for IBM's PS2, and for Unix-based machines). Hence, the Xbox may be seen as a hedge against the possible decline of the PC, and the shift to games consoles as the primary vehicle for home entertainment and Internet access. If this is the case, then

the prospects for short- or even medium-term profitability are not a critical issue for MS. The Xbox is a potentially strategically important investment in a path of technological development that could be critical to MS's entire business.

Given these goals, the MS strategy is a long-term one. It does not need to worry about winning market leadership from Sony in the short-to-medium term; the key issue is to establish a secure market position in order to give MS the opportunity to develop add-on products and services that can help MS build up its position in the home market. If it is to use penetration of the games console market as the basis for establishing standards for online home entertainment and information, then, at some point, it will need to establish market leadership in video games. However, this is probably further into the future; in the short–medium term, its goal must be to build a significant market presence.

However, building such a market position is no small task. Sony is a tough competitor and PS2 has a strong market base and massive software support. MS has the advantage of the most powerful machine on the market; however, in software, it's in a weak position. For all its market power, financial strength, and technological prowess, MS does not have particularly good relations with games developers and publishers; moreover, its reputation of bullying smaller software companies probably does not endear it to many of the players in this market. Hence, MS probably has an uphill climb to establish itself securely in the games market – the Japanese market is a particularly formidable challenge given that this is the world's second biggest market and the most sophisticated. MS's major task is to find a "killer app." – a blockbuster game – that will give it the momentum to penetrate the world market on a substantial scale.

Nintendo

As with MS, I begin by asking students about Nintendo's strategic goals in this market, and then go on to explore Nintendo's strategic situation (notably the resources and capabilities that it has to play with).

In contrast to MS, Nintendo is a specialist video games company – in short, it needs to make a profit in this industry. Hence, Nintendo's time horizon is considerably shorter than MS's – Nintendo needs to make a positive return in the medium term, which means that it needs to grab global market share.

As the number two player in this industry, Nintendo is at a major disadvantage to MS. It has a strong installed base and a tremendous reputation (indeed, its position as a specialist video games company gives it a certain cachet compared with Sony). However, it lacks the financial muscle of Sony and MS, and lacks Sony's multi-media breadth (particularly its lack of original content derived from its movie division).

The challenge for Nintendo is to use its technology, its marketing flair, and its strength in blockbuster games titles to build a strong position behind Sony's PlayStation2, and to maintain the operational excellence and responsiveness that will allow it to fully exploit any strategic or operational snafus by Sony.

A key aspect of its strategy must be to exploit any advantage that derives from its dominance of handheld games machines. However, the strategic value of this resource may be eroding as mobile phones become increasingly important for games playing.

Sony

As the market leader and the company with the broadest array of consumer electronic and entertainment assets in the video games market, Sony has everything going for it. Its huge worldwide installed base and its network of collaborative relationships with software companies mean that it is well placed to maintain its market dominance. However, Sony needs to be aware of history – despite all the advantages of incumbency, Atari and Sega could not sustain their success and ultimately withdrew from the market, while Nintendo declined from market dominance to a struggling number two player.

To stymie the efforts of MS and Nintendo, Sony needs to learn the lessons of Shapiro and Varian's *Information Rules* (the book from which their *California Management Review* article is excerpted). Sony knows that if it plays its cards right it can maintain market dominance. It needs to carefully plan its succession of PlayStation models – it probably needed to announce the launch date of its PlayStation3 before the end of 2002. By carefully managing consumer expectations, it can undermine the credibility of MS and Nintendo and time its announcements of new product releases to thwart MS's and Nintendo's attempts to build market hype.

But it also needs to be wary of disruptive technologies. In particular, Sony needs to think carefully about the evolutionary direction of consumer electronics and home entertainment. Will the video games console displace the PC, the VCR, and the hi-fi system? How can Sony lead the path of innovation and market development in this field?

Summary

I finish up by summarizing some of the issues with regard to competing for standards in technologically fast-moving markets where there are hardware–software complementarities:

- Managing hardware–software complementarities:
  - Where's the greatest profit potential – hardware or software?
  - Strategy for exploiting complementarity:
    - (a) Create advantage in one; commoditize the other;
    - (b) Need for coordination (e.g., careful coordination of hardware/software upgrades);
  - Importance of the "killer app." (the "must have" application software that drives sales of hardware.

- Analyzing the existence and sources of network externalities:
  - User linkages;
  - Availability of complements;
  - Minimizing need for retraining.

- How to win in standards wars:
  - Timing: first-mover advantages/disadvantages;
  - Preemption;
  - Managing expectations;
  - Partnering (building a bandwagon).
- Holding on to leadership:
  - Ensuring backward compatibility.