Nerds: A Case Study Of The PC Industry

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ABSTRACT

This paper discusses the use of a PBS video, Triumph of the Nerds, as a video case study of the personal computer industry. The program traces the birth of the microcomputer industry through interviews with the founders of the industry, including Bill Gates, Paul Allen, Steve Jobs and Gordon Moore. The video is more than an entertaining look at the personal computer industry, but also provides numerous lessons on topics such as protecting intellectual property, strategic alliances, disruptive innovations, competitive strategy, marketing and entrepreneurship.

Keywords: video case study, disruptive innovation, competitive strategy, value chain, first mover advantage

INTRODUCTION

The use of personal computers has become pervasive in modern society. Computers have become such an important educational component that many universities require students to purchase notebook computers or provide them as part of the cost of attending. Although students take for granted the use of the computer and the Internet, current students are just one generation removed from the revolution that changed much of the way business and education are conducted. Many students are aware of Steve Jobs and Apple Corporation, through the success of the iPod music player and iPhone, but less are aware of Jobs' crucial role in creating the personal computer. Bill Gates is well known for being one of the richest men in the world, his current philanthropic endeavors, and for the success of Microsoft, but again, few students actually understand the path to Microsoft's success. Although most students know of Xerox and its highly successful photo copy business, few if any know of the important role Xerox played in developing much of the computer technology that we take for granted.

For years, case studies have been an integral part of many business courses. As instructors, we have found that students are most interested when the cases and examples focus on real-world examples that are familiar to the students. The personal computer industry provides just such an industry. *Triumph of the Nerds*, a PBS documentary based on the book *Accidental Empires* by Robert X. Cringely provides an interesting and entertaining case study of the computer industry. The video provides not only a look at the computer industry but numerous interesting examples of business strategy and entrepreneurship.

VIDEO CASE STUDIES

Technology has changed much of the way students receive both their information and entertainment. The advent of DVD players, cable and satellite TV, video gaming systems and *You Tube* have made students more in tune with multimedia presentations. Over the last two decades, a number of instructors have begun to recognize this and have begun to incorporate videos into their courses. Serey (1992) used *Dead Poets Society* to teach management and organizational behavior and says that students prefer to use visual imagery to understand concepts rather than the traditional lecture oriented approaches. This movement to visual imagery has made videos an important source of supplemental material. Dyl (1991) and Belden (1992) discuss the use of the movie *Wall Street* as a live case study of corporate ethical behavior. Chan, Weber and Johnson (1995) and Graham and Kocher (1995) use the movie *Other People's Money* to illustrate a number of issues in corporate finance. Hatfield and Buchko (2008), use the video *ENRON: The Smartest Guys in the Room* to illustrate financial concepts and ethical issues.

AN OVERVIEW OF THE VIDEOS

Triumph of the Nerds documents the birth of the personal computer industry and consists of interviews with Steve Jobs and Steve Wozniak of Apple Computers, Bill Gates and Steve Ballmer of Microsoft, Gordon Moore of Intel, in addition to numerous, lesser known founders of the industry. Because the videos consist of interviews with the actual founders of the industry, there is no acting and hence no character dramatizations of the participants. *Triumph of the Nerds* is available on both video and DVD, the later allowing instructors to easily play specific parts of the program.

The program is broken up into three, roughly 50 minute parts. Part I: Impressing their Friends, documents how a bunch of high school and college "nerds" created the microcomputer, not as a means to great wealth, but simply as a hobby to impress their friends. Only Apple co-founder Steve Jobs and Microsoft co-founders, Bill Gates and Paul Allen seemed to sense at this point in time the business potential at this early stage of the industry.

Part II: *Riding the Bull* discusses the entrance of IBM into this infant industry. As the dominant player in the computer industry, the entrance of IBM legitimized the industry and expanded its growth. Bill Gates recognized the importance of IBM and much of the key to Microsoft's success comes from piggybacking IBM's introduction of the personal computer. While Microsoft was aligning its business with IBM, Gary Kildall of Digital Research decided not to enter the partnership by providing the CPM operating system to the project, and his company remains a mere footnote in the history of the microcomputer.

Part III: *Great Artists Steal* draws its title from a Picasso saying that good artists copy, great artists steal. Much of the success of Apple, Microsoft and other computer companies were stolen from Xerox. The Palo Alto Research Center (PARC), which Xerox created in 1970 was formed to conduct research, free from any economic concerns. PARC attracted some of the top computer scientists in the world and in 1971 created the first personal computer, the Alto, long before IBM and Apple. Unfortunately for Xerox, the researchers at PARC were unable to convince their superiors of the significance of their discoveries and Xerox failed to commercially pursue the personal computer, or to protect their intellectual property. The number of PARC researchers who would take their discoveries at PARC and form successful businesses is a virtual who's who in the computer industry such as Bob Metcalf, inventor of the Ethernet and founder of 3Com and John Warnock and Charles Geschke, founders of Adobe Systems. Today, much of the technology that we take for granted in the computer industry such as the graphical user interface (GUI), which consists of using a mouse and icons to complete tasks, object oriented programming, the Ethernet and the laser jet printer were all discovered at PARC.

In addition to the video, the complete transcript of the show can be found at http://www.pbs.org/nerds/transcript.html. Although *Triumph of the Nerds* first premiered on PBS stations in June 1996, the topic is just as relevant today as it was more than a decade ago. Exhibit 1 provides an index of the chapters, a brief synopsis of each chapter in the DVD and the corresponding pages in the transcript to make preparation easier.

USING TRIUMPH OF THE NERD IN THE CLASSROOM

We believe that the best way to use the program is to allow students to view the program in its entirety so students can understand the overall background of how the microcomputer industry emerged. Instructors can then replay specific sections of the program to motivate the discussion. For instructors that wish to extend the discussion to various business topics, we have provided a number of questions, answers and additional readings in Exhibit 2.

EXHIBIT 1: DVD CHAPTERS AND MANUSCRIPT PAGES

	Time	Pages in Transcript	Synopsis
Part I: Impressing Their Friends			
Chapter 1: Introduction	0:00	1 - 2	Introduction to the program and some of the major players in the personal computer industry such as Steve Jobs, Steve Wozniak, Bill Gates, Paul Allen and Steve Balmer.
Chapter 2: Nerds	5:38	2 – 4	
Chapter 3: The Chip	13:00	4 – 7	Intel creates 8080 chip but misses the boat on inventing the personal computer. MITS, a cash register manufacturer creates the first personal computer, the Altair 8800.
Chapter 4: Homebrew Computer Club	19:16	7 – 8	Hobbyists meet to show off their latest computer. Jobs and Wozniak are regulars and some of their computers generate great interest, inspiring Jobs to start a company using Wozniak's technical expertise.
Chapter 5: Paul Allen – Inventor of the basic language	22:58	8 – 11	Gates and Allen create a microcomputer version of BASIC that allows the Altair 8800 to be programmed for games and other applications.
Chapter 6: Apple Computer	31:29	11 – 13	Jobs sees the microcomputer as a business. Jobs seeks out venture capital funding from Arthur Rock. The Apple II, first computer for the mainstream.
Chapter 7: Launch of the Apple II	37:09	13 – 16	Spreadsheet VisiCalc becomes the killer ap that drives the Apple II. People buy the Apple II just to run VisiCalc.
Chapter 8: Media Explosion	45:39	16 – 17	VisiCalc creator Dan Bricklin doesn't benefit financially from the success of his spreadsheet because he chooses not to patent the idea. Ed Roberts sells MITS because his computer company is just one of many. Apple owns fifty percent of personal computer market.
Part II Riding the Bear			
Chapter 1: Introduction	0:00	1 – 3	IBM enters the microcomputer market. IBM's culture consists of layers of decision makers making it impossible to bring a new product to market quickly.
Chapter 2: Bill Lowe	7:35	3 – 5	Bill Lowe pitches a "skunk works" team in Boca Raton Florida to bring a personal computer to market within a year. He chooses an open architecture approach to speed the process
Chapter 3: Bill Gates	13:55	5 – 7	Gates signs confidentiality agreements with IBM and agrees to provide the BASIC programming language. Gates and Balmer recognize the importance of joining the IBM project.
Chapter 4: Meeting between Kildall and IBM	18:32	7 – 9	Gary Kildall chooses not to license the CPM operating system. Gates convinces IBM that Microsoft can provide the operating system. Microsoft lucks into finding an operating system developed by another company and purchases it.
Chapter 5: Announcement of the IBM PC	24:32	9 – 11	Like the Apple computer, IBM needed a killer ap, Lotus 123. Businesses buy the IBM computer because of IBM's business credibility and Lotus 123.

Exhibit 1, continued

	Time	Pages in Transcript	Synopsis
Chapter 6: Compaq	29:03	11 – 15	Compaq reverse engineers the IBM PC. Intel and Microsoft benefit from the PC clones. Prices fall as low cost producers enter the market. Gates builds the Microsoft culture by hiring employees straight out of college and with no business experience. IBM tries to steal market share back from Microsoft by introducing their own operating system OS/2. IBM designs the operating system but asks Microsoft to write the code.
Chapter 7: Windows	40:42	15 – 17	Microsoft develops Windows. IBM/MS partnership ends.
Chapter 8: Apple Commercial Launch of the Macintosh	48:55	17 – 18	
Part III: Great Artists Steal			
Chapter 1: Introduction	0:00	1 – 4	Launch of Windows 95. Flashback to Xerox PARC the inventor of the Alto computer in 1971, the first computer with GUI. Also invents Ethernet and the laser printer.
Chapter 2: Steve Jobs	10:27	4 – 6	Jobs visits PARC. Apple steals the idea for the GUI.
Chapter 3: The Macintosh	15:55	6 – 8	The large amount of software for the IBM PC drives its sales and hurts Apple. Microsoft chooses to hedge its bet and write applications software for the Mac. Gates steals GUI idea.
Chapter 4: Bill Gates	19:28	8 – 9	
Chapter 5: Launch of the Macintosh	23:15	9 – 11	After the failure of the Lisa computer, the fate of Apple depended on the Macintosh. Macintosh sales were disastrous because of the cost and the lack of software. "What You See is What You Get" (WSIWIG) invented by John Warnock of Adobe becomes the killer ap for the Mac.
Chapter 6: Jobs Leaving Apple	31:45	11 – 12	Jobs' management style causes him to be removed by the board in favor of CEO John Scully. The years after Jobs leaves are most profitable.
Chapter 7: Windows	35:23	12 – 15	Gates' strategy wins out. Microsoft joined the leading hardware company and by carving out a dominant market share for his product made his software the industry standard. The most open system (IBM/Microsoft/Intel) is the one that won although IBM did not reap the same rewards as Microsoft and Intel.
Chapter 8: The Internet	43:00	15 – 16	

EXHIBIT 2 DISCUSSION QUESTIONS FOR TRIUMPH OF THE NERDS

Competitive Advantage

1. How can intellectual property be used to gain competitive advantage? Give some examples from the program.

   Protecting intellectual property through the use of patents and copyrights keeps other businesses from imitating your business. Visicalc creator Dan Bricklin chooses not to patent his spreadsheet idea and earns little money from the idea as companies like Lotus and Microsoft later enter the market. Xerox chooses not to protect any of its intellectual property including the graphical user interface (GUI), and Ethernet and fails to capitalize on these ideas. Microsoft and Intel choose to protect their intellectual property and prosper.

2. Use Michael Porter's generic strategies to analyze Apple Computers and the IBM PC clone manufacturers.

   Apple Computers followed a differentiation strategy of innovative design and functionality and by not licensing their technology to other computer manufacturers. This allowed them to charge prices that were higher than the PC, but ultimately gave them a much smaller share of the personal computer market. Clone makers attempted to follow a cost leadership strategy by producing computers that were nearly identical to IBM's but with much lower production costs.

Additional Readings:

Smith, D. K., & Alexander, R. C. *Fumbling The Future : How Xerox Invented, Then Ignored, The First Personal Computer*. (William Morrow and Company, 1988).
Porter, M. E. *Competitive Advantage : Creating And Sustaining Superior Performance*. (New York; London: Free Press; Collier Macmillan, 1985.) (Chapter 3 and 4).

Open Architecture

1. What is an open architecture? What are some of the advantages and disadvantages of using an open architecture approach to designing a product.

   Open architecture is an approach to software and hardware computer design that allows adding, upgrading and swapping components. Open architecture allows a product to be brought to market more quickly because each component does not need to be designed in house. An open architecture can grow a market more rapidly, helping the design reach the critical mass necessary for success. One disadvantage of the approach is that it may reduce a firm's profitability as other firms enter the industry.

2. Explain how and why IBM decided on an open architecture for their PC.

   Open architecture allowed IBM to bring the personal computer to market much faster and allowed the market for IBM compatible computers to gain a dominate share of the market. Open architecture often leads to faster improvements in the product. A disadvantage of the open architecture approach is that the greatest profits don't always flow to the inventor. IBM benefited less than Microsoft and Intel from this approach.

3. What impact did the open architecture approach of the IBM PC have on Apple Computers?

   The IBM approach caused the market for IBM and IBM clones to grow so rapidly that software writers focused on the larger market, thus leaving Apple with a small niche share of the computer market.

Additional Readings

Chesbrough, H. W. *Open Innovation : The New Imperative For Creating And Profiting From Technology*. (Boston, Mass.: Harvard Business School Press, 2003.)

Michael Porter's Industry Analysis

1. Use Michael Porter's framework for analyzing the profitability of the microcomputer industry.

The Porter model focuses on five factors that determine the attractiveness of an industry:

Bargaining Power of Buyers
Bargaining Power of Suppliers
Threat of New Entrants
Threat of Substitutes
Rivalry Among Existing Competitors

The open architecture approach that allowed for reverse engineering of the microcomputer, the strong bargaining power of chip maker Intel and operating system maker Microsoft, and the fierce price competition made the microcomputer industry less attractive. In addition, ease of entry into the industry caused Ed Roberts to sell MITS as his business became one of many computer makers.

2. Use Michael Porter's framework for analyzing profitability of the microprocessor industry.

Unlike the microcomputer industry, the profitability of the microprocessor industry was much more favorable. The PC makers (buyers) had little bargaining power over the industry, which consisted of Intel. There were no substitutes and entrance into the industry was difficult because of the patents and the amount of R&D and capital investment that was necessary to produce a chip. The raw materials needed to produce the chip consist of commodities such as copper and sand gave suppliers little bargaining power. The operating system industry, which Microsoft controlled, had similar favorable fundamentals.

Additional Readings:

Porter, M. E. "The Five Competitive Forces that Shape Strategy." *Harvard Business Review*, 86 (January, 2008), 78-93.

First Mover Advantage

1. Why wasn't Apple Computers able to control the bulk of the microcomputer market with the first consumer friendly personal computer?

   First movers in an industry don't always maintain their advantage. Suarez and Lanolla (2005) argue that when the pace of technological evolution is fast and the pace of market evolution is fast, it is difficult for first movers to maintain their advantage. Also, by choosing not to license their computer technology to other manufacturers limited the size of the market for Apple computers and thus limited the amount of software available for its machines.

   Markides and Geroski (2005) argue that being a "fast second" can be more profitable than being first to market. They argue that different skills are needed to innovate versus the skills needed to establish a market. They classify *colonists*, who come up with the innovation and *consolidators*, who scale up the market. Often times the consolidators are the ones that profit the most. IBM as a large, well-respected computer manufacturer was in a better position to consolidate the market than Apple.

Additional Readings:

Markides, C., & Geroski, P. *Fast Second : How Smart Companies Bypass Radical Innovation To Enter And Dominate New Markets* (1st ed.). (San Francisco, CA: Jossey-Bass, 2005.)

Shapiro, C., & Varian, H. R. *Information Rules : A Strategic Guide To The Network Economy*. (Boston, Mass.: Harvard Business School Press, 1998).

Suarez, F., & Lanzolla, G. "The Half-Truth Of First-Mover Advantage." *Harvard Business Review, 83*(4), 2005, 121-127.

Strategy

1. How can strategic alliances help a firm to prosper? Give some examples from the program.

   Microsoft's decision to align itself with IBM's microcomputer project is one of the great business decisions of all time. Conversely, the decision of Digital Research not to join the IBM project is one of the worst. Microsoft improved its chances of writing software for the winning computer company by writing software for the Apple computers as well.

2. Discuss the importance of complementary products in the success of the personal computer.

   The microcomputer had little commercial use until useful software programs allowed mainstream users to benefit. The microcomputer became valuable when a "killer ap" such as the spreadsheet or post script printing made the computer valuable for business.

3. What is a skunk works? How did IBM use the concept to build the PC?

   A skunk works is usually defined as a group of people who work on a project in a way that is outside the usual rules. A skunk works is often a small team that assumes or is given responsibility for developing something in a short time with minimal management constraints. Because of the bureaucracy of IBM, Bill Lowe pitches a skunk works team in Boca Raton Florida to bring a personal computer to market within a year. He chooses an open architecture approach to speed the process.

Additional Readings:

Barney, J. B. *Gaining and sustaining competitive advantage* (3rd ed.). (Upper Saddle River, NJ: Pearson Prentice Hall, 2007.)

Rich, B. R., & Janos, L. *Skunk Works : A Personal Memoir Of My Years At Lockheed* (1st ed.). (Boston: Little, Brown., 1994.)

Raising Capital

1. How do entrepreneurs obtain the funds to finance their venture? Give an example from the program.

   Once entrepreneurs need the funds to bring their product to market they often times turn to venture capitalists, who provide funding and management expertise to the business. Steve Jobs sought out venture capitalist Arthur Rock to fund the Apple II.

Additional Readings:

Timmons, J. A., & Sander, D. A. "Everything You (Don't) Want To Know About Raising Capital." *Harvard Business Review, 67*(6), 1989, 70-73.
Zider, B. "How Venture Capital Works." *Harvard Business Review, 76*(6), 1998, 131-139.

Value Chain

1. Which companies profited most from the personal computer?

   Not all companies in a product's value chain benefit equally. In the case of the PC, Microsoft with its operating system and Intel with its chip profited the most as clone makers required these parts. The PC clone industry drove down IBM's profitability, but benefited Microsoft and Intel.

Additional Readings:

Christensen, C. M., Raynor, M., & Verlinden, M. "Skate To Where The Money Will Be." *Harvard Business Review, 79*(10), 2001, 72-81.
Porter, M. E. *Competitive Advantage : Creating And Sustaining Superior Performance*. (New York; London: Free Press; Collier Macmillan, 1985.), Chapter 2 and 3.

Disruptive Innovations

1. Why was the microcomputer a disruptive innovation?

   A disruptive innovation is one that doesn't simply improve on an existing technology, but creates value along some new dimension. Often times a disruptive innovation is not as good as existing products but gives users something new that wasn't available with the old technology. For example, the microcomputer was not nearly as powerful as the existing mainframe computers, but provided a small affordable computer that individuals and small businesses could purchase. The microcomputer eventually overtook the mainframe computer as rapid improvements increased its computing power to levels sufficient to meet consumer's needs.

2. Give some additional examples of disruptive technologies from the program.

   There are a number of disruptive technologies from the program, many were invented at Xerox PARC. The graphical user interface, Ethernet and postscript printing and the laser jet printer all represented disruptive innovations.

Additional Readings:

Christensen, C. M. *The Innovator's Dilemma : When New Technologies Cause Great Firms to Fail* (New York: HarperBusiness, 2000).

Leadership and Entrepreneurship

1. Briefly explain the importance of a visionary leader to a company.

   Steve Jobs' vision allowed Apple to create innovative products such as the Apple II and the Macintosh. Once Jobs left Apple in 1985, the company lost its innovative edge. When Jobs returned in 1997, Apple again began producing innovative products that have captured the imagination of the consumer including the iMac, iPod and iPhone.

   Jobs and Gates had the vision to see the microcomputer industry as an important business opportunity whereas Xerox failed to recognize the importance of the personal computer.

2. Briefly discuss some of the steps that are necessary to become a successful entrepreneur. Give some examples from the program.

   In order to start a new venture, a person needs to recognize an opportunity in the market place, be able to create a solution that solves the problem and be willing to take the risk. Bill Gates and Paul Allen recognized the need for a programming language for the Altair 8800. Steve Jobs recognized the need for consumer friendly computer that included a keyboard and monitor. All of them were willing to take the risks of leaving jobs or school to start a new company.

3. How did Bill Gates create the Microsoft corporate culture?

   Gates shapes Microsoft by hiring young people with no work experience directly from college so he can define the culture.

Additional Readings:

Daft, R. L., & Lane, P. G. *The Leadership Experience* (4th ed.). (Mason, OH: Thomson/South-Western, 2008.)

Hisrich, R. D., Peters, M. P., & Shepherd, D. A. *Entrepreneurship* (7th ed.). (Boston: McGraw-Hill/Irwin, 2008.)

Beyond Triumph of the Nerds

1. Analyze the success of Dell Computers using Michael Porter's analysis.

   Dell Computers was able use a cost leadership strategy by cutting out the middleman to reduce costs. Also the value chain analysis pioneered by Porter allowed Dell to pick the most profitable areas in the manufacturing process.

2. What companies have used an open architecture approach?

   Aside from IBM, SUN Microsystems, the Linux operating system and the Mozilla Firefox browser have used this approach.

3. Name some companies that have benefited from being a first mover or early mover into a market.

   More recently, eBay has benefited from establishing the online auction market. Because online auction markets require a large network of participants, the company that establishes the critical mass is difficult to unseat. Amazon also benefited from being one of the first online book sellers. Establishing early brand recognition and trust with the consumer in the early days of the Internet has played an important part in Amazon's success.

4. Give some examples of disruptive innovations from Apple Computers.

   Apple's iPod, iPhone and iTunes music store all represent disruptive innovations.

5. Give some examples of entrepreneurs that started a business from a hobby or from a product they produced for their own use.

   Steve Wozniak of Apple Computers created a personal computer for his own use. Secretary Bette Nesmith Graham created liquid paper to correct her own typing errors. The founders of Cisco Systems, Sandy Lerner and Len Bosack were a husband and wife that worked at Stanford University. They created the routers and switches to allow them to communicate with one another from different computer systems on the campus.

Additional Readings:

Dell, M., & Fredman, C. *Direct From Dell : Strategies That Revolutionized An Industry* (1st paperback ed.). New York: HarperBusiness, 2000.

Deutschman, A. *The Second Coming Of Steve Jobs* (1st ed.). (New York: Broadway Books, 2000.)

Magretta, J. "The Power Of Virtual Integration: An Interview With Dell Computer's Michael Dell." *Harvard Business Review*, *76*(2), 1998, 72-84.

Ross, E. and Holland, A. *100 Great Businesses and the Minds Behind Them*. (Naperville, Ill., Sourcebooks, 2006), pp. 422.

Young, J. S., & Simon, W. L. (2005). *iCon: Steve Jobs, The Greatest Second Act In The History Of Business*. (Hoboken, NJ: Wiley.)

Instructors can also use *Triumph of the Nerds* to motivate case studies of some of the companies that are highlighted in the program. For example, the video only covers the early years that Steve Jobs was at Apple and ends after he is removed from the company. However, his return in 1997 led to a rebirth of Apple and their products. Although the program was created several years before Jobs returned to Apple, students can get a sense of the visionary that would lead Apple's second coming with the creation of such successful consumer products as the iPod, iPhone and iMac. The video can provide motivation for case studies of companies that are only briefly mentioned in the video such as 3Com, Adobe Systems, Compaq and Xerox. The program can also be a springboard for discussing other entrepreneurial ventures not mentioned in the program such as eBay, Google, Cisco Systems, Dell Computers and Starbucks.

SUMMARY AND CONCLUSION

The video *Triumph of the Nerds* represents an excellent way to introduce a number of business concepts through a video case study of the computer industry. The interviews give students the opportunity to hear directly from the founders of the industry. The program is an entertaining look at the beginning of the microcomputer industry and the business strategies that led to great success for some and obscurity for others. The DVD can be used as a stand alone case study of the founding of the personal computer industry or as motivation for case studies of some of the companies highlighted in the show such as Apple, 3Com, Microsoft or Adobe. The program is an excellent way to introduce a multibillion dollar industry and to enhance the learning experience by offering instructors an opportunity to provide a live case study.

AUTHOR BIOGRAPHIES

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Ralph Terregrossa is an associate professor of economics and finance in the Tobin College of Business at St. John's University. He received his Ph.D. in economics from the State University of New York at Binghamton. In 2008, he received the university's Teaching Excellence Award and the President's Medal for Outstanding Contribution to St. John's University.

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2. Chan, K. C., Weber, M., & Johnson, M. "Using Other People's Money in the Classroom." *Financial Practice & Education*, 5 (Spring/Summer, 1995), 123-127.

3. Cringely, R. X. *Accidental Empires : How the Boys of Silicon Valley Make Their Millions, Battle Foreign Competition, and Still Can't Get a Date* (Newly rev. and expand ed., 1996). New York: HarperBusiness.
4. Dyl, E. A. Wall Street: a Case in Ethics. *Financial Practice & Education,* 1 (Spring/Summer, 1991), 49-51.
5. Graham, L., & Kocher, C. "A Note on Using Other People's Money in the Classroom." *Financial Practice & Education,* 5 (Spring/Summer, 1995), 128-129.
6. Hatfield, P. and Buchko, A. "Using ENRON: The Smartest Guys in the Room As a Live Case Illustration of Financial Concepts and Ethical Issues," *Journal of Financial Education* 34 (Spring 2008), 68-94.

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