

**EXHIBIT 6 (continued)****FUNDS EMPLOYED**

*Capital Funds Employed*—Line 12 will show the net project cost appearing on line 11 as a constant for the first ten periods except in any period in which additional expenditures are incurred; in that event show the accumulated amounts of line 11 in such period and in all future periods.

Deduct cumulative depreciation on line 13. Depreciation is to be computed on an incremental basis, i.e., the net increase in depreciation over present depreciation on assets being replaced. In the first period depreciation will be computed at one half of the first year's annual rate; no depreciation is to be taken in the eleventh period. Depreciation rates are to be the same as those used for accounting purposes.

*Exception:* When the depreciation rate used for accounting purposes differs materially from the rate for tax purposes, the higher rate should be used. A variation will be considered material when the first full year's depreciation on a book basis varies 20% or more from the first full year's depreciation on a tax basis.

The ten-year average of Capital Funds Employed shall be computed by adding line 14 in each of the first ten periods and dividing the total by ten.

*Total Working Funds*—Refer to Financial Policy No. 21 as a guide in computing new working fund requirements. Items which are not on a formula basis and which are normally computed on a five-quarter average shall be handled proportionately in the first period. For example, since the period involved may be less than 12 months, the average would be computed on the number of quarters involved. Generally, the balances should be approximately the same as they would be if the first period were a full year.

Cash, based on a formula which theorizes a two weeks' supply (2/52nds), should follow the same theory. If the first period is for three months, two-thirteenths (2/13ths) should be used; if it is for 5 months, two-twenty-firsts (2/21sts) should be used, and so forth.

Current liabilities are to include one half of the tax expense as the tax liability. The ten-year averages of Working Funds shall be computed by adding each line across for the first ten periods and dividing each total by ten.

**PROFIT AND LOSS PROJECTION**

*P & L Categories (Lines 22–34)*—Reflect only the incremental amounts which will result from the proposed project; exclude all allocated charges. Include the P & L results expected in the individual periods comprising the first ten years of the life of the project. Refer to the second paragraph of these instructions regarding the fractional years' calculations during the first and eleventh periods.

Any loss or gain on the sale of a replaced asset (see line 8) shall be included in line 33.

As indicated in the caption Capital Funds Employed, no depreciation is to be taken in the eleventh period.

The ten-year averages of the P & L items shall be computed by adding each line across for the eleven periods (10 full years from the operational data) and dividing the total by ten.

*Adjustments (Line 34)*—Show the adjustment necessary, on a before-tax basis, to indicate any adverse or favorable incremental effect the proposed project will have on any other products currently being produced by the corporation.

*Investment Credit* is to be included on line 36-A. The Investment Credit will be spread over 8 years, or fractions thereof, as an addition to PAT.

**RETURN ON NEW FUNDS EMPLOYED**—Ten-year average returns are to be calculated for PAT (projects requiring Board approval only) and PBT. The PAT return is calculated by dividing average PAT (line 37) by average new funds employed (line 21); the PBT return is derived by dividing average PBT (line 35) by average new funds employed (line 21).

**PAYBACK YEARS FROM OPERATIONAL DATE**

*Part Year Calculation for First Period*—Divide number of months in the first period by twelve. If five months are involved, the calculation is  $5/12 = .4$  years.

*Number of Full Years to Payback*—Determined by the last period, excluding the first period, in which an amount is shown on line 39.

*Part Year Calculation for Last Period*—Divide amount still to be repaid at the end of the last full period (line 39) by net profit plus the annual depreciation in the following year when payback is completed.

*Total Years to Payback*—Sum of full and part years.

## NetFlix.com, Inc.

In July 2000, Reed Hastings, chairman and CEO of NetFlix.com, Inc., faced a critical decision. Three months earlier, following one of the worst episodes on record for the NASDAQ market, NetFlix had submitted its S-1 filing for its initial public offering (IPO).<sup>1</sup> As a result of the market downturn, many Internet companies had been forced to withdraw their IPOs. Investment bankers indicated to Hastings that NetFlix would need to show positive cash flows within a twelve-month horizon in order to have a successful offering. Hastings knew that NetFlix was at a crucial stage. With revenues doubling every six months, NetFlix was enjoying tremendous success. But continued success depended on the company's ability to sustain triple-digit growth for the foreseeable future. Soon, Hastings would have to decide whether or not to proceed with the company's anticipated IPO.

Hastings asked Barry McCarthy, the chief financial officer, to reevaluate the cash flow requirements of the company's current business plan, to suggest modifications that would improve the company's projected cash flows, and to make a recommendation on whether the company should go forward with its planned offering. As McCarthy reviewed the existing NetFlix business model, he considered possible changes that might allow the company to proceed with its planned IPO and yet sustain the type of future growth that would be necessary for the company to achieve its long-run objectives. McCarthy was acutely aware of the company's current financing need, but he worried about the effect that changes to the business plan might have on the company's current operations.

### The Company

NetFlix.com, Inc., was founded in 1997 by Reed Hastings and Marc Randolph. NetFlix operated an Internet-based unlimited rental subscription service for digital video disc (DVD) formatted movies. The DVD provided a new technology for storing and playing movies with image and sound quality exceeding that of traditional videocassettes. A DVD was similar in size to an audio compact disc and was capable of holding an entire feature-length film, as well as additional information such as subtitles in different languages, additional shorter videos about the making of the film or other related subject matter, and information about the actors, director, and producers. With its high quality and additional features, the new DVD technology provided an attractive alternative to

<sup>1</sup>After reaching a historical high of 5,048 on March 10, 2000, the NASDAQ Composite Index had fallen 25% to 3,794 by April 18, 2000, the day of the NetFlix S-1 filing.

Professor E. Scott Mayfield prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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traditional videocassettes for the home video market. By combining the superiority of the new DVD technology with the convenience of the Internet, NetFlix provided a new way to select and to rent home movies.

Randolph managed production of the NetFlix web site, including the features, functionality, and content on the site. Randolph believed that consumers were often frustrated in their efforts to select and view movies at traditional video stores because of limited selections and a focus on new release movies. With its unlimited "virtual" shelf space for stocking videos, the NetFlix web site focused on improving the experience of selecting a movie to watch by providing an intelligent interface for browsing, searching, and evaluating potential movies. The NetFlix web site also integrated movies currently showing in theaters by providing the ability to check local listings and show times, as well as the ability to view movie trailers on its web site. In addition, the NetFlix web site kept track of each subscriber's preference for various types of movies and provided an individualized predicted rating for all of the movies on the web site.

Since launching its web site in April 1998, NetFlix had experienced rapid growth. Revenues had grown from \$1.4 million in 1998 to \$5.0 million in 1999. The number of full-time employees increased from 46 in December 1998 to 270 in December 1999. By March 31, 2000, NetFlix had over 120,000 paying subscribers. Typical of most Internet startups, however, NetFlix had not yet earned a profit, reporting net losses of \$11.1 and \$29.8 million in 1998 and 1999, respectively. Exhibit 1 and Exhibit 2 provide annual financial statements for 1998 and 1999. Exhibit 3 provides quarterly operating results for 1999.

The NetFlix business model focused exclusively on the new DVD format technology. Management had four main reasons for focusing on this specific segment of the home video market.

- DVD players were the fastest growing segment of the video player market. Because of the rapid adoption of the new DVD technology, sales were forecast to grow at a 49% compound annual rate over the next five years.<sup>2</sup> Exhibit 4 provides a comparison of DVD player and videocassette recorder sales during the first five years after their respective introductions.
- Because of their small size, light weight, and durability, DVDs could be distributed to subscribers on a cost effective basis via regular U.S. mail. Including the costs associated with processing the order, McCarthy estimated the round-trip cost of shipping a DVD to a subscriber and back to NetFlix to be about \$1.00.
- In order to promote sales of DVD players, manufacturers were willing to include NetFlix promotional offers with their packaging materials at essentially no cost, which allowed customer acquisition costs to be kept to a minimum. Management had negotiated agreements with most of the leading DVD manufacturers, including Sony, Toshiba, Panasonic, and RCA. These manufacturers accounted for over 90% of the DVD players sold in the United States in 1999.
- Management believed that early adopters of DVD technology were likely to have a computer with an already existing Internet connection and were likely to be willing to conduct commerce over the Internet.

Hastings viewed NetFlix as a combination of a traditional video store, such as Blockbuster or Hollywood Video, and a subscription cable TV service, such as HBO, Cinemax, or Showtime. By paying a single monthly subscription fee ranging from \$15.95 to \$19.95, a NetFlix subscriber could rent an unlimited number of DVDs each

month and could keep a DVD as long as desired.<sup>3</sup> Because NetFlix did not impose a specific date on which a DVD was to be returned, subscribers did not have to worry about paying additional fees for videos that were returned late. In order to attract new subscribers to the NetFlix web site, NetFlix distributed coupons for a free month of service with new DVD players. The costs associated with these free months of service to new subscribers made up the majority of sales and marketing expenses. In 1999 alone, NetFlix recorded over \$16.4 million in sales and marketing expense.

Once a subscriber had signed up for the free month of service, the objective was to get the subscriber to convert from free- to paid-status and then to retain that subscriber for as long as possible. In order to study the effect of the subscription fee on conversion and retention rates, management had tested a variety of different price points. Based on analyses of data from these market tests, McCarthy believed that his company's ability to retain subscribers was comparable to that of successful subscription cable services. McCarthy estimated that approximately 70% of new subscribers converted to paid-status and that 40% of subscribers that converted to paid-status continued to subscribe after six months. McCarthy expected retention rates for subscribers that subscribed more than six months to be quite high.

Because the NetFlix business model focused on the acquisition and retention of individual subscribers, McCarthy projected future NetFlix financing requirements using a subscriber model. First, McCarthy modeled the expected cash flows from a newly acquired subscriber, including the subscription fees paid, the expected number of discs rented, the costs associated with shipping and disc acquisition, and any other cash flows that varied directly with the acquisition or loss of an individual subscriber. Second, McCarthy modeled the likelihood that any given subscriber would be retained over the forecast horizon. And last, McCarthy used the projected number of future new subscribers together with the number of existing subscribers to forecast the company's expected aggregate cash flows.

## The Marquee Queue

A key aspect of the NetFlix business model was the "Marquee Queue" concept. The "Marquee Queue" allowed a subscriber to have several movies on hand for viewing at all times. A subscriber's queue was simply a list of all the movies that the subscriber had selected, but that had not yet been sent to the subscriber. After logging on to the NetFlix web site, a new subscriber would browse the virtual aisles and select movies that he or she wanted to watch. These movies would be used to build the subscriber's queue. The NetFlix web site made it easy for the subscriber to edit the queue, such that the list could be arranged in the desired order. NetFlix would then ship the DVDs at the top of the queue to the subscriber.

NetFlix allowed a subscriber to have up to four DVDs in his or her possession at one time. Once a subscriber had viewed a movie and returned the DVD to NetFlix, the next DVD in the queue was automatically sent to the subscriber. In this way, a subscriber could always have movies in his or her possession for immediate viewing.

<sup>3</sup>Since launching its web site, management had tested a variety of different pricing plans. From February 1999 through October 1999, NetFlix generated most of its revenues from individual DVD rentals and associated shipping charges. In September 1999, NetFlix launched its subscription rental service for a fixed monthly fee of \$15.95. Under this plan, subscribers could rent up to four DVDs per month. In February 2000, NetFlix modified its subscription rental service to provide unlimited rentals for a fixed monthly fee of \$19.95. At that time, existing subscribers were migrated to the unlimited rental service at their original fee of \$15.95.

<sup>2</sup>Paul Kagan Associates, Inc., as cited in NetFlix S-1 filing.



In order to fulfill subscriber requests, NetFlix maintained an extensive DVD library. As of December 1999, the NetFlix DVD library contained approximately 5,800 titles and over 620,000 individual discs. In order to process subscriber orders, NetFlix leased a 58,000 square foot distribution facility capable of processing and shipping over 6 million DVDs per month. During the month of March 2000, NetFlix shipped over 800,000 DVDs to about 155,000 total subscribers.

NetFlix purchased its DVDs on a wholesale basis from distributors. Approximately 20% of the DVDs in the library were allocated to new release titles and the remainder to back catalogue (non-new release) titles. New release titles were generally defined as movies that had been made available to the home video market within the past two months. As of the end of 1999, the net book value of the DVD library was about \$8.7 million. Exhibit 5 provides information on the accounting treatment of the DVD library. For financial reporting purposes, NetFlix depreciated its DVD library over three years. However, because of their digital technology, McCarthy expected the actual DVD library to last an indefinite length of time without any deterioration in quality except for damage resulting from shipping or misuse. For this reason, NetFlix did not sell its older DVDs. Instead, discs naturally migrated into the back catalogue as they aged.

## The Personal Movie Finder Service

In addition to providing a "storefront" for renting movies, NetFlix offered individualized movie recommendations as part of its Personal Movie Finder Service. NetFlix asked its subscribers to evaluate the movies they rented using a simple point-and-click scoring system. Using this information, NetFlix constructed a preference profile for each subscriber. These profiles were used to supply a predicted rating for every movie on the NetFlix web site that was unique to each NetFlix subscriber. As more subscribers were added to the database and as existing subscribers rated more movies, NetFlix expected the quality of its movie recommendations to improve.

By providing reliable recommendations for selecting movies, NetFlix sought to develop sufficient brand loyalty to compete effectively against potential future entrants as well as existing video rental retailers. In addition, NetFlix anticipated that the information collected from its subscribers would also be useful to movie studios for promoting movies showing in theaters. According to the Motion Picture Association of America, the industry spent an average of \$21.4 million per movie to market and promote the theatrical release of new feature films. Management believed that their rapidly growing subscriber base and Movie Finder database could provide the industry with an effective means to market movies to a targeted audience on a personalized basis. Finally, as Internet technology developed, NetFlix was hopeful that its technology could be used as a programming guide to Internet delivered video. Through the development of its Personal Movie Finder service and the growth of its subscriber base, NetFlix hoped to become the definitive online intermediary for choosing movies and other video entertainment.

## Consolidation and Innovation in the Home Video Market

Analysts estimated that U.S. consumers spent about \$25.6 billion on movie theater tickets and home videos, with home video rentals accounting for about 32% or \$8.3 billion.<sup>4</sup> Although success at the box office was important to movie studios, profitability often

<sup>4</sup>Paul Kagan Associates, Inc., as cited in NetFlix S-1 filing.

depended on revenues from alternative markets, such as home video, pay-per-view, and television. In 1999, revenues from the home video market were estimated to account for almost 50% of domestic movie studio revenues.<sup>5</sup>

The home video industry was highly fragmented. However, with a 14% decrease in the number of video stores operating in the United States since 1997, the industry was consolidating rapidly.<sup>6</sup> In 1999, Blockbuster, Inc., was the world's largest video retailer with a 30% revenue share of the home video rental market.<sup>7</sup> Having almost three times as many domestic stores as its nearest competitor, Blockbuster estimated that roughly 60% of the U.S. population lived within three miles of a Blockbuster store. The typical Blockbuster store carried 4,500 different movie titles, 500 of which were new release titles. In 1999, approximately 78% of Blockbuster domestic rental revenue was from new release movies. Blockbuster also had begun to rent movies in DVD format. In 1999, most Blockbuster stores stocked between 200 and 300 different DVD titles.<sup>8</sup>

Traditionally, movies were made available for distribution in the home video market about two months after the end of their theatrical release. Video rental retailers typically purchased copies of videos from distributors and then rented them to their customers, keeping the revenue generated from the rental and/or sale of the tapes. However, two major innovations were anticipated to have a permanent impact on the way in which the industry distributed movies. They were: (1) revenue sharing and (2) video-on-demand.

### Revenue Sharing

With the consolidation of the home video market and the increased importance of the home video to movie studios, revenue sharing agreements between movie studios and major retailers were becoming more common. Under a revenue sharing agreement, a retailer paid a lower price for each videocassette in exchange for sharing a portion of the rental revenue with the movie studio.<sup>9</sup> Because revenue sharing reduced a retailer's required inventory investment, retailers were willing to stock more copies of each new release title and customers were more likely to find a copy of the movie they wanted to rent. Since implementing revenue sharing in 1997, the typical Blockbuster store carried 60% more movie titles and stocked nearly four times the number of videocassettes.

### Video-on-Demand

With the widespread adoption of the Internet, analysts believed that home video would eventually be delivered directly to consumers over high-speed Internet connections. The eventual advent of video-on-demand meant that video retailers had a limited time frame in which to position themselves for this new environment. Although it was generally agreed that such a change would take place, there was less agreement on the length of time it would take for the necessary infrastructure to be put in place or on who would eventually become the conduit for providing home video entertainment.

<sup>5</sup>Paul Kagan Associates, Inc., as cited in Blockbuster 1999 Annual Report

<sup>6</sup>Blockbuster 1999 Annual Report.

<sup>7</sup>Casewriter estimate.

<sup>8</sup>Blockbuster 1999 Annual Report.

<sup>9</sup>In a typical revenue-sharing agreement, a retailer might purchase a new release videocassette for less than \$10 in exchange for returning 40% of the rental revenue generated during the first six months to the movie studio.



## Conclusion

Knowing that NetFlix had a limited time frame in which to assemble a "critical mass" of subscribers, McCarthy considered the effect that entering into revenue-sharing agreements with movie studios might have on projected NetFlix cash flows. He also wondered whether the major movie studios that had already signed agreements with Blockbuster would be willing to sign similar agreements with a relatively new Internet startup such as NetFlix. Considering the enormous growth requirements facing NetFlix, McCarthy was concerned that revenue-sharing agreements alone might not free up enough working capital to allow for a successful offering later in the year. McCarthy also considered whether NetFlix could afford to continue offering a free month of service in order to attract potential new subscribers. At the same time, he wondered whether the company could afford not to do so.

### EXHIBIT 1 Income Statements for NetFlix.com, Inc. (thousands of dollars)

Source: Company reports.

	Year Ended December 13,	
	1998	1999
Revenues	1,339	5,006
Cost of revenue	1,311	4,373
Gross profit	28	633
Operating expenses:		
Product development	3,857	7,413
Sales and marketing	4,815	16,424
General and administrative	1,358	2,085
Stock-based compensation	1,151	4,742
Total operating expenses	11,181	30,664
Operating loss	(11,153)	(30,031)
Other income (expense)		
Interest and other income, net	114	924
Interest expense, net	(42)	(738)
Net loss	(11,081)	(29,845)

### EXHIBIT 2 Balance Sheets for NetFlix.com, Inc. (thousands of dollars)

Source: Company reports.

	Year Ended December 31,	
	1998	1999
<b>Assets</b>		
Current assets		
Cash and cash equivalents	1,061	14,198
Short-term investments	—	6,322
Prepays and other current assets	635	720
Total current assets	1,696	21,240
Rental library, net	2,011	8,695
Property and equipment, net	1,062	4,499
Deposits and other assets	80	339
Total assets	4,849	34,773
<b>Liabilities and Shareholders' Equity</b>		
Current liabilities		
Notes payable	1,000	625
Current portion of capital lease obligations	579	571
Accounts payable	3,063	5,334
Accrued liabilities	1,640	3,211
Deferred revenue	118	471
Total current liabilities	6,400	10,212
Capital lease obligations	172	811
Note payable	—	3,959
Total liabilities	6,572	14,982
Mandatorily redeemable conv. pref stock	6,321	51,819
Shareholders equity (deficit):		
Convertible preferred stock	4	4
Common stock	3	7
Additional paid-in capital	8,100	16,087
Deferred stock-based compensation	(4,711)	(6,841)
Accumulated deficit	(11,440)	(41,285)
Total shareholders' equity (deficit)	(8,044)	(32,028)
Total liabilities and shareholders' equity (deficit)	4,849	34,773



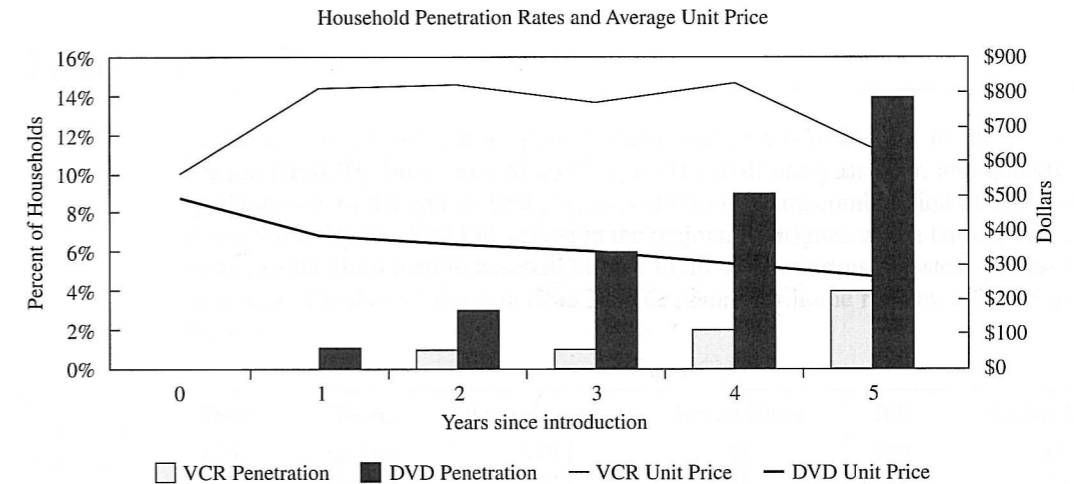
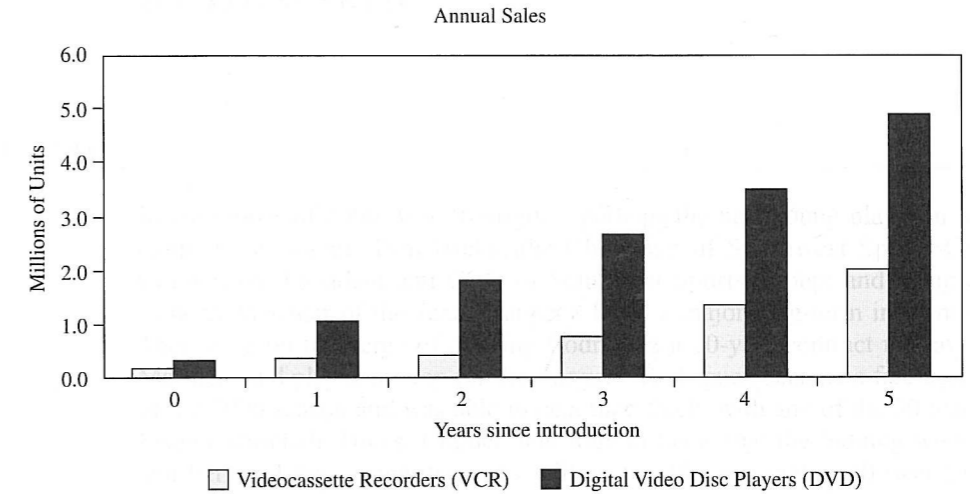
**EXHIBIT 3**  
Quarterly Operating Results for NetFlix.com, Inc. (thousands of dollars)

Source: Company reports.

	Quarter Ended			
	March 31 1999	June 30 1999	Sept. 30 1999	Dec. 31 1999
Revenues	847	854	1,170	2,135
Cost of revenue	663	670	1,276	1,764
Gross profit	184	184	(106)	371
Operating expenses				
Product development	1,324	1,533	2,106	2,450
Sales and marketing	1,954	2,930	4,994	6,546
General and administrative	532	553	404	596
Stock-based compensation	787	1,203	1,500	1,252
Total operating expenses	4,597	6,219	9,004	10,844
Operating loss	(4,413)	(6,035)	(9,110)	(10,473)
Interest and other income, net	74	112	351	387
Interest expense, net	(165)	(129)	(149)	(295)
Net loss	(4,504)	(6,052)	(8,908)	(10,381)

**EXHIBIT 4** Historical and Projected Unit Sales, Average Unit Price, and Household Penetration Rates for Videocassette Recorders and Digital Video Disc Players during the First Five Years after Introduction<sup>a</sup>

Source: Consumers Electronics Manufacturer's Association.



<sup>a</sup>Unit sales are sales to dealers. Consumer sales are estimated to be about 60% of dealer sales. For DVD players, years 3, 4, and 5 are forecasted values.

**EXHIBIT 5**  
Rental Library (thousands of dollars)

Source: Company reports.

	As of December 31,	
	1998	1999
Rental library	2,186	10,882
Less accumulated depreciation	(175)	(2,187)
Rental library, net	2,011	8,695



# A-Rod: Signing the Best Player in Baseball

## Introduction

In December of 2000 Alex Rodriguez, perhaps the best young player in baseball, became a free agent. Tom Hicks, the Chairman of Southwest Sports Group; Mike Cramer, the President and COO of Southwest Sports Group; and Doug Melvin, the General Manager of the Texas Rangers, faced a major long-term investment decision. They were on the verge of offering Rodriguez a 10-year contract to leave the Seattle Mariners and play shortstop for the Rangers. Rodriguez became a free agent at the end of the 2000 season and was able to negotiate freely with any of the 30 teams in Major League Baseball. Hicks, Cramer, and Melvin knew that the bidding would be fierce, and believed the competition was willing to offer contracts well over \$100 million. They wanted to offer a contract that would be accepted, but only if it was at a price that was justified financially.

## Alex Rodriguez

At the age of 17, Alex Rodriguez became the first overall pick in the 1993 Major League Draft. He broke into Major League Baseball one year later, and quickly developed into one of the game's best players, exhibiting a rare combination of stellar offense and defense. By his third full season in the majors, Rodriguez won a batting title and became just the third man in baseball history to hit 40 home runs and steal 40 bases in the same year. He also set the American League record for home runs by a shortstop.<sup>1</sup> (See Table A.)

**TABLE A**  
Alex Rodriguez Key  
Offensive Statistics

Source: [www.espn.com](http://www.espn.com)  
accessed on May 5, 2002

Year	Team	Batting Avg.	Home Runs	RBI	Stolen Bases
1996	Seattle	.358	36	123	15
1997	Seattle	.300	23	84	29
1998	Seattle	.310	42	124	46
1999	Seattle	.285	42	111	21
2000	Seattle	.316	41	132	15

<sup>1</sup>Major League Index of Player Pages (ML-IPP)

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Aside from his superb playing ability, Rodriguez possessed intangible qualities that made him a crowd favorite. He was young, handsome, articulate, and humble, which, in combination with his Hispanic background, allowed him to have a broad appeal among fans worldwide. At 25 years old in 2000, he was young enough for the team that signed him to have confidence that he would still be in his prime at the end of a lengthy contract. Most important of all, Hicks, Cramer, and Melvin all believed Rodriguez to possess the kind of leadership and desire to win that would make the whole team better.

## Major League Baseball

In 2000, Major League Baseball consisted of 30 teams, split between the National and American Leagues. The leagues and their members were parties to a Major League Agreement, which governed matters concerning MLB teams.

Team revenue was derived from three primary sources:

1. *Local revenues* consist of ticket sales, local television, radio and cable rights, ball-park concessions, parking, and team sponsorships.
2. *Central Fund revenues* serve as a receipt and disbursement fund for central transactions that were shared equally by the 30 teams. It primarily consisted of national television contracts and licensing arrangements.
3. *Revenue sharing* transfers a portion of local revenues from high-revenue teams to low-revenue teams.<sup>2</sup>

Revenue sharing was created as a result of the Collective Bargaining Agreement that became effective on January 1, 1997. The agreement called for each team to contribute a portion of its local revenues, a percentage that peaked at 20% in 2000, to a pool. Once the pool was accumulated, 75% of the proceeds were distributed equally to all teams. The remaining 25% were distributed to teams whose total revenue was below the average revenue for all teams based on the extent to which that team's revenue was below the average.<sup>3</sup>

MLB teams differed greatly in their local revenue, which made up the vast majority of MLB's total revenue. In 2000, the Montreal Expos had approximately \$13 million of local revenue, versus \$190 million for the New York Yankees (Exhibit 1). Most other professional sports leagues pooled a much larger percentage of television rights and distributed them equally among all the teams. In Major League Baseball, however, most television and radio rights were negotiated and sold locally to each individual team.<sup>4</sup> Since the 30 Major League teams were located in cities of varying size, the local broadcast revenues that accrued to each team varied a great deal.

From 1996 to 2000, salaries accounted for a little over 50% of total league expenses.<sup>5</sup> Other expenses for each team included costs for player development (minor league salaries, team expenses, and scouting), transportation, road-meal expenses, salaries for coaches and trainers, player disability insurance, stadium expenses, front office expenses, ticket office and promotion expenses, and other administrative expenses.<sup>6</sup> Most types of operating expenses are fixed costs that vary little from team to team. But salaries vary tremendously across the teams (Exhibit 1). Higher levels of

<sup>2</sup>The Report of the Independent Members of the Commissioner's Blue Ribbon Panel, p. 15

<sup>3</sup>Cleveland Indians 10-K filing, March 31, 1999

<sup>4</sup>Report of the Blue Ribbon Panel, p. 18

<sup>5</sup>Derived from various sources from *Forbes* (April 16, 2001), baseball-almanac.com (accessed on September 6, 2002), and Report of the Blue Ribbon Panel on Baseball Economics (July 2000)

<sup>6</sup>*Baseball and Billions*, Andrew Zimbalist, p. 59

local revenue enabled large media market teams and teams with better stadiums to pay higher salaries and attract the best players. This led to strong on-field performance and further increased fan enthusiasm and hence, local revenues. Under free agency, which began in 1976, star players who improved team quality and attracted fans could successfully demand to be compensated for the revenue they helped generate. The rapid increase in the salaries of top players explained why average player salaries grew much faster than minimum salaries (Exhibit 2).

## The Texas Rangers

The history of the Texas Rangers dated to 1971, when the owner of the Washington Senators received approval to move the team to Arlington, Texas, and rename them the Texas Rangers.<sup>7</sup> The team was part of the American League and played in the four-team West division. From the team's inception in Texas through 1994, they played in Arlington Stadium, which held 42,000 people after a 1976 renovation. In 1994, the team moved into a new 49,200-seat stadium, The Ballpark at Arlington (Exhibit 3). The Rangers played 81 of each season's 162 games at The Ballpark. The stadium cost \$191 million to build and was financed in a public/private partnership between the Rangers and the city of Arlington. \$135 million came from the issuance of municipal bonds with the remainder coming from the sale and lease of luxury suites, loans guaranteed by the Rangers, and the concessions contract.<sup>8</sup> The Rangers maintained, operated, and kept all revenues from the games held there (other than the revenue to cover the lease payment).<sup>9</sup>

Ownership changed hands several times over the years, including an ownership stint by an investor group that included George W. Bush before he became President. Southwest Sports Group purchased the team in January 1998 for \$250 million. Tom Hicks formed Southwest Sports Group in 1998 as a sports entertainment company for the purpose of holding the Rangers and other sports-related properties. The holdings of Southwest Sports Group included the Dallas Stars of the National Hockey League, the Rangers, Mesquite Championship Rodeo, and one-half stakes in the Frisco Roughriders Minor League Baseball team and the Center Operating Company, which constructed and operated American Airlines Center, the home of the Stars. Southwest Sports was also a joint venture partner with Fox Sports and Colorado Studios in Lone Star Mobile Productions. Mr. Hicks is also Chairman and a founding partner of Hicks, Muse, Tate & Furst, a Dallas-based leveraged-buyout firm.

Mr. Hicks' pursuit of Rodriguez was part of a formula for the Rangers that had been successfully implemented with the Stars. The plan was to spend considerable resources on talent to upgrade the quality of the team. It was likely this would result in short-term losses. Soon, though, a championship caliber team would fill the seats and significantly boost profits and franchise value in the long term. When Hicks bought the Stars for \$84 million in 1995, they were struggling, having finished in fifth place in their division. Hicks and his management team were very aggressive in trading for and signing top-flight players. The team improved dramatically, as they finished first in their division and won the Stanley Cup championship in 1999. They were also able to build American Airlines Center, a state-of-the-art arena outfitted with considerable high-revenue luxury box and club seating. By 2000, the team had tripled revenues and was on well on its way to becoming the top team in the NHL in revenue. This, along with the Stars' very healthy operating profit margins, had led to a tripling of the value of the franchise.

<sup>7</sup>[www.rangers.mlb.com](http://www.rangers.mlb.com) accessed on May 5, 2002

<sup>8</sup>[www.rangers.mlb.com](http://www.rangers.mlb.com) accessed on May 5, 2002

<sup>9</sup>[www.rangers.mlb.com](http://www.rangers.mlb.com) accessed on May 5, 2002

In pursuit of Rodriguez, Mr. Hicks and his team spent a lot of time in the fall of 2000 with Rodriguez and his agent, Boras. Top Stars player Mike Modano showed Rodriguez the town and discussed the organization's commitment to winning. This was not just a contract negotiation; it was an all-out effort to sell Rodriguez on the future of the Rangers. At the end of the recruitment process, the Rangers' management had several issues to consider. First, they had to determine how much to offer Rodriguez. They also needed to determine what incremental benefits Rodriguez had to bring the Rangers in order for the investment to be worthwhile.

## Rodriguez and Revenue

When determining how much to offer Rodriguez, the negotiating team needed to form an opinion of the tangible benefits that Rodriguez would bring the franchise. They evaluated how quickly they would see results, and if they could rely upon them every year over the contract life. The most obvious benefit would be increased attendance. Baseball's history had consistently shown that winning teams drew more fans. Baseball experts felt that although most star players would in a normal year add only a game or two to a team's win total, a player of Rodriguez's rare talents could enable a team to win perhaps eight additional games in a typical year. The Rangers drew an average of 35,000 fans per game for the 80 home games of the 2000 season, so the capacity utilization of their stadium was about 71%—there was room in the stadium for the new fans a better team might draw. Recent historical trends had shown that fans, on average, spent \$2.50 on parking and concessions and an additional \$1.80 on merchandise. Average ticket prices were \$18. The extraordinary skill of Rodriguez would also likely increase the Rangers' probability of making the playoffs. Reaching the American League Championship Series could add about \$10 million of incremental revenue and reaching the seventh game of the World Series could add over \$20 million in incremental revenue.

The wide appeal of Rodriguez would also likely make the Rangers more attractive to potential sponsorship partners. Sponsorship revenue for teams with relatively new ballparks could account for 7% to 10% of total local revenue. Rodriguez's presence would also likely increase the team's television and radio audience, but due to long-term fixed-fee deals with local broadcasters, it was not clear that the Rangers would directly benefit from this. It also needed to be kept in mind that the Rangers would not be able to keep all of the incremental revenue that Rodriguez generated. Due to the Rangers' relatively high level of revenue, they were a net payer into Major League Baseball's revenue sharing arrangement laid out in the most recent Collective Bargaining Agreement.

The negotiating team also considered the many intangible benefits that Rodriguez could bring to the Rangers. His signing would demonstrate a commitment to winning and to being a first-class organization. They believed that this would help with future free agent signings and would prevent their own young players from signing with other teams. Rodriguez could add significantly to the visibility of the franchise and enhance their ability to negotiate future projects for the franchise, including a new state-of-the-art spring training facility. They believed that even after Rodriguez retired, his value and presence would still stay with the team. Hicks and Cramer felt that the long-term presence of a legendary player could turn an ordinary franchise into a franchise that was one of a select group of baseball "crown jewels." These franchises, such as the Boston Red Sox and Los Angeles Dodgers, could carry price tags \$100 or \$200 million higher than similar franchises that lacked their prestige and glamour (Exhibit 4). Ultimately Hicks, Cramer, and Melvin believed that the incremental revenue that Rodriguez generated, combined with the intangible benefits, could substantially increase the long-term franchise value of the Rangers.

The Texas Rangers generally used an 8% discount rate for calculating comparable numbers.

## The Contract

Hicks, Cramer, Melvin, and their organizations spent hours analyzing how much they could pay Rodriguez. Their latest internal proposal was a 10-year contract that would have a nominal value of \$252 million. If the proposed contract was put forth to Rodriguez and accepted, it would break new ground for its size. The next highest paid player was Kevin Brown, whose annual salary averaged \$15 million as a pitcher for the Los Angeles Dodgers. The proposed contract would also dwarf Rodriguez's prior contract with the Mariners that had paid him less than \$4 million a year. The size of the contract would be slightly larger than the \$250 million that Southwest Sports Group paid for the entire franchise in 1998. Large as it was, the Rangers felt their offer was appropriate under the circumstances. They had learned that offers were outstanding to Yankees shortstop Derek Jeter and to slugger Manny Ramirez for over \$18 million per season, and that hard-hitting Carlos Delgado had been offered in excess of \$17 million annually. While these were all excellent players, the Rangers felt Rodriguez was considerably more valuable and would cost commensurately more. Additionally, it was important to note that because Rodriguez was so young, his abilities justified a 10-year contract beginning in 2001. The Rangers' fans would know that their star player was committed to the team for the long haul, and this in turn would likely lead to increased loyalty and enthusiasm among the fans.

The contract would have two basic pieces, a base salary and a signing bonus.<sup>10</sup> The signing bonus was to be \$10 million, paid evenly over the first five years of the contract. The contract called for a portion of each year's compensation to be deferred for 10 years at a 3% interest rate. The payout schedule can be seen in Exhibit 5. The annual salary and prorated signing bonus would not be the only expenses related to the contract. Since the proposed contract was guaranteed for 10 years, it must be paid regardless of Rodriguez's performance or time out for injury. The Rangers planned to purchase contract insurance in the event that Rodriguez had a career-ending injury. Contract insurance for a contract of this magnitude would require a premium each year of approximately 10% of that year's contract value.

The negotiating team also believed that the right way to examine the financial attractiveness of the contract was only to consider that portion of his salary and insurance premium that would compensate for the extra tangible and intangible benefits he brought to the team. The Rangers had to have a shortstop, and the price of an average shortstop was increasing every year; so they believed the true "cost" of his contract was only the incremental amount that was meant to be payment for the "Rodriguez factor." The average salary of all the starting shortstops in Major League Baseball for 2000 was a little over \$3 million.<sup>11</sup> Nomar Garciaparra, the fine Red Sox shortstop, would be paid \$7.25 million for next season.

Now it was time for a decision. Additional team statistics are available in Exhibit 6. If they put forth a contract for \$252 million, they were confident it would be accepted. Could they financially justify that high a price? Should they offer less? And if they did, how much lower could they go before another team outbid them?

<sup>10</sup>The contract would also include nominal bonuses for milestones such as All Star appearances and MVP awards.

<sup>11</sup>CBS Sportsline.com accessed on May 5, 2002



**EXHIBIT 1**  
**Fiscal Year 2000**

Source: Adapted from *Forbes* (April 16, 2001), baseball-almanac.com (accessed on September 6, 2002), and Report of the Blue Ribbon Panel on Baseball Economics (July 2000)

Team	Total Revenue	Local Revenue %	Player Payroll
New York Yankees	\$192,400,000	98.9%	\$92,538,260
New York Mets	\$162,000,000	94.1%	\$79,509,776
Atlanta Braves	\$145,500,000	92.9%	\$84,537,836
Cleveland Indians	\$142,900,000	94.2%	\$75,880,971
San Francisco Giants	\$138,800,000	69.8%	\$53,737,826
Seattle Mariners	\$138,300,000	84.7%	\$58,915,000
Los Angeles Dodgers	\$131,300,000	88.9%	\$88,124,286
Texas Rangers	\$126,500,000	87.4%	\$70,795,921
Boston Red Sox	\$125,700,000	89.7%	\$77,940,333
Baltimore Orioles	\$124,000,000	91.8%	\$81,447,435
Houston Astros	\$122,200,000	72.3%	\$51,289,111
Detroit Tigers	\$120,800,000	66.0%	\$58,265,167
Colorado Rockies	\$119,100,000	89.8%	\$61,111,190
Chicago Cubs	\$112,400,000	87.1%	\$60,539,333
St. Louis Cardinals	\$110,500,000	84.7%	\$61,453,863
Arizona Diamondbacks	\$109,100,000	89.9%	\$81,027,333
Anaheim Angels	\$94,400,000	72.7%	\$51,464,167
Chicago White Sox	\$92,600,000	71.3%	\$31,133,500
San Diego Padres	\$84,000,000	72.3%	\$54,821,000
Tampa Bay Devil Rays	\$81,300,000	86.6%	\$62,765,129
Toronto Blue Jays	\$80,300,000	68.2%	\$46,238,333
Philadelphia Phillies	\$79,200,000	66.8%	\$47,308,000
Cincinnati Reds	\$77,800,000	58.4%	\$46,867,200
Oakland Athletics	\$74,700,000	53.9%	\$31,971,333
Kansas City Royals	\$72,600,000	53.8%	\$23,433,000
Pittsburgh Pirates	\$70,400,000	51.7%	\$28,928,333
Milwaukee Brewers	\$69,600,000	54.8%	\$36,505,333
Florida Marlins	\$67,300,000	60.5%	\$20,072,000
Minnesota Twins	\$58,000,000	33.9%	\$16,519,500
Montreal Expos	\$53,900,000	24.5%	\$34,807,333

Note: Local revenue % are as of fiscal year 1999

**EXHIBIT 2**  
**Major League**  
**Baseball Player**  
**Salary Information**

Source: *Charleston Gazette*, 13 December 2001

Season	Minimum Salary	Average Salary
2000	\$200,000	\$1,895,630
1999	\$200,000	\$1,611,166
1998	\$170,000	\$1,398,831
1997	\$150,000	\$1,336,609
1996	\$122,667	\$1,119,981
1995	\$109,000	\$1,110,766
1994	\$109,000	\$1,168,263
1993	\$109,000	\$1,076,089
1992	\$109,000	\$1,028,667
1991	\$100,000	\$851,492
1990	\$100,000	\$597,537
1989	\$68,000	\$497,254
1988	\$62,500	\$438,729
1987	\$62,500	\$412,454
1986	\$60,000	\$412,520
1985	\$60,000	\$371,571
1984	\$40,000	\$329,408
1983	\$35,000	\$289,194
1982	\$33,500	\$241,497
1981	\$32,500	\$185,651
1980	\$30,000	\$143,756
1979	\$21,000	\$113,558
1978	\$21,000	\$99,876
1977	\$19,000	\$76,066
1976	\$19,000	\$51,501
1975	\$16,000	\$44,676
1974	\$15,000	\$40,839

**EXHIBIT 3**  
**Texas Rangers Home**  
**Attendance**  
**Information**

Source: [www.rangers.siegler.net](http://www.rangers.siegler.net) accessed on May 5, 2002 Note: The 1994 and 1995 seasons were shortened by a players' strike

Year	Games	Total Attendance	Average	Capacity
1993	79	2,244,616	28,413	42,000
1994	62	2,503,198	40,374	49,200
1995	72	1,985,910	27,582	49,200
1996	80	2,889,020	36,113	49,200
1997	80	2,945,244	36,816	49,200
1998	81	2,927,409	36,141	49,200
1999	80	2,771,469	34,643	49,200
2000	80	2,800,147	35,002	49,200



**EXHIBIT 4**  
Estimated Franchise  
ValuesSource: *Forbes* (April 16, 2001)

Team	Value	2000 Revenue	Multiple
New York Yankees	\$635,000,000	\$192,400,000	3.3x
New York Mets	\$454,000,000	\$162,000,000	2.8x
Atlanta Braves	\$407,000,000	\$145,500,000	2.8x
Los Angeles Dodgers	\$381,000,000	\$131,300,000	2.9x
Cleveland Indians	\$372,000,000	\$142,900,000	2.6x
Texas Rangers	\$342,000,000	\$126,500,000	2.7x
Boston Red Sox	\$339,000,000	\$125,700,000	2.7x
Baltimore Orioles	\$335,000,000	\$124,000,000	2.7x
Colorado Rockies	\$334,000,000	\$119,100,000	2.8x
San Francisco Giants	\$333,000,000	\$138,800,000	2.4x
Seattle Mariners	\$332,000,000	\$138,300,000	2.4x
Houston Astros	\$318,000,000	\$122,200,000	2.6x
Detroit Tigers	\$290,000,000	\$120,800,000	2.4x
Chicago Cubs	\$247,000,000	\$112,400,000	2.2x
Arizona Diamondbacks	\$245,000,000	\$109,100,000	2.2x
St. Louis Cardinals	\$243,000,000	\$110,500,000	2.2x
Chicago White Sox	\$213,000,000	\$92,600,000	2.3x
Pittsburgh Pirates	\$211,000,000	\$70,400,000	3.0x
Milwaukee Brewers	\$209,000,000	\$69,600,000	3.0x
Anaheim Angels	\$198,000,000	\$94,400,000	2.1x
Cincinnati Reds	\$187,000,000	\$77,800,000	2.4x
San Diego Padres	\$176,000,000	\$84,000,000	2.1x
Toronto Blue Jays	\$161,000,000	\$80,300,000	2.0x
Philadelphia Phillies	\$158,000,000	\$79,200,000	2.0x
Tampa Bay Devil Rays	\$150,000,000	\$81,300,000	1.8x
Oakland Athletics	\$149,000,000	\$74,700,000	2.0x
Kansas City Royals	\$138,000,000	\$72,600,000	1.9x
Florida Marlins	\$128,000,000	\$67,300,000	1.9x
Minnesota Twins	\$99,000,000	\$58,000,000	1.7x
Montreal Expos	\$92,000,000	\$53,900,000	1.7x

Note: Value is the value of the team, without deduction for debt, other than stadium debt.

**EXHIBIT 5**  
Rodriguez Proposed  
ContractSource: <http://rangers.siegler.net/roster/arodriguez.html> accessed on May 5, 2002

Year	Base Salary	Signing Bonus	Amount Deferred
2001	\$21 million	\$2 million	\$5 million in 2011
2002	\$21 million	\$2 million	\$4 million in 2012
2003	\$21 million	\$2 million	\$3 million in 2013
2004	\$21 million	\$2 million	\$3 million in 2014
2005	\$25 million	\$2 million	\$4 million in 2015
2006	\$25 million		\$4 million in 2016
2007	\$27 million		\$4 million in 2017
2008	\$27 million		\$3 million in 2018
2009	\$27 million		\$3 million in 2019
2010	\$27 million		\$3 million in 2020

**EXHIBIT 6** Team Statistics

Sources: Adapted from Baseballstats.net (accessed on May 5, 2002), baseball-almanac.com (accessed on September 6, 2002), and U.S. Census Bureau (populations between 1990 and 2000 are interpolated)

Team	1990			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,555,688	\$21,405,390	14,531,529	80
Atlanta Braves	980,129	\$11,429,334	2,959,500	65
Baltimore Orioles	2,415,189	\$7,982,084	6,726,395	76
Boston Red Sox	2,528,986	\$21,968,333	5,455,403	88
Chicago Cubs	2,243,791	\$13,768,500	8,239,820	77
Chicago White Sox	2,002,357	\$10,461,000	8,239,820	94
Cincinnati Reds	2,400,892	\$15,519,166	1,817,569	91
Cleveland Indians	1,225,240	\$14,595,000	2,859,644	77
Detroit Tigers	1,495,785	\$18,170,167	5,187,171	79
Houston Astros	1,310,927	\$17,313,000	3,731,029	75
Kansas City Royals	2,244,956	\$22,046,282	1,582,874	75
Los Angeles Dodgers	3,002,396	\$20,948,461	14,531,529	86
Milwaukee Brewers	1,752,900	\$18,277,000	1,607,183	74
Minnesota Twins	1,751,584	\$13,872,300	2,538,776	74
Montreal Expos	1,373,087	\$21,907,668	3,208,970	85
New York Mets	2,732,745	\$21,172,073	19,565,441	91
New York Yankees	2,006,436	\$20,215,750	19,565,441	67
Oakland Athletics	2,900,217	\$23,092,000	6,277,525	103
Philadelphia Phillies	1,992,484	\$13,510,167	5,893,019	77
Pittsburgh Pirates	2,049,908	\$14,749,000	2,394,811	95
San Diego Padres	1,856,396	\$16,598,334	2,498,016	75
San Francisco Giants	1,975,528	\$21,940,709	6,277,525	85
Seattle Mariners	1,509,727	\$12,288,167	2,970,300	77
St. Louis Cardinals	2,573,225	\$19,577,000	2,492,348	70
Texas Rangers	2,057,911	\$12,672,333	4,037,282	83
Toronto Blue Jays	3,885,284	\$17,019,001	3,898,933	86
	1991			
Anaheim Angels	2,416,236	\$31,782,501	14,715,741	81
Atlanta Braves	2,140,217	\$18,923,500	3,074,770	94
Baltimore Orioles	2,552,753	\$14,627,334	6,814,563	67
Boston Red Sox	2,562,435	\$32,767,500	5,491,773	84
Chicago Cubs	2,314,250	\$26,813,120	8,331,592	77
Chicago White Sox	2,934,154	\$16,730,437	8,331,592	87
Cincinnati Reds	2,372,377	\$25,369,166	1,833,732	74
Cleveland Indians	1,051,863	\$18,070,000	2,868,263	57
Detroit Tigers	1,641,661	\$23,736,334	5,214,097	84
Houston Astros	1,196,152	\$11,156,000	3,824,883	65
Kansas City Royals	2,161,537	\$28,122,662	1,602,193	82
Los Angeles Dodgers	3,348,170	\$32,916,664	14,715,741	93
Milwaukee Brewers	1,478,729	\$24,398,000	1,615,422	83
Minnesota Twins	2,293,842	\$22,331,000	2,581,779	95
Montreal Expos	934,742	\$20,208,500	3,231,923	71
New York Mets	2,284,484	\$32,590,002	19,728,883	77
New York Yankees	1,863,733	\$27,615,835	19,728,883	71
Oakland Athletics	2,713,493	\$36,332,500	6,353,709	84
Philadelphia Phillies	2,050,012	\$20,073,332	5,922,563	78
Pittsburgh Pirates	2,065,302	\$23,064,667	2,391,199	98
San Diego Padres	1,804,289	\$22,585,001	2,529,598	84
San Francisco Giants	1,737,478	\$30,839,333	6,353,709	75
Seattle Mariners	2,147,905	\$16,126,834	3,028,746	83
St. Louis Cardinals	2,448,699	\$21,435,001	2,503,474	84
Texas Rangers	2,297,720	\$19,184,500	4,155,734	85
Toronto Blue Jays	4,001,527	\$27,538,751	3,977,070	91



## EXHIBIT 6 (Continued)

Team	1992			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,065,444	\$32,584,670	14,899,952	72
Atlanta Braves	3,077,400	\$35,853,321	3,190,040	98
Baltimore Orioles	3,567,819	\$23,963,719	6,902,730	89
Boston Red Sox	2,468,574	\$42,138,665	5,528,142	73
Chicago Cubs	2,126,720	\$32,374,664	8,423,364	78
Chicago White Sox	2,681,156	\$30,180,333	8,423,364	86
Cincinnati Reds	2,315,946	\$35,429,559	1,849,896	90
Cleveland Indians	1,224,094	\$9,323,339	2,876,881	76
Detroit Tigers	1,423,963	\$28,222,167	5,241,022	75
Houston Astros	1,211,412	\$14,916,500	3,918,737	81
Kansas City Royals	1,867,689	\$31,968,586	1,621,512	72
Los Angeles Dodgers	2,473,266	\$42,050,166	14,899,952	63
Milwaukee Brewers	1,857,351	\$29,953,168	1,623,661	92
Minnesota Twins	2,482,428	\$27,272,834	2,624,782	90
Montreal Expos	1,669,127	\$16,050,854	3,254,876	87
New York Mets	1,779,534	\$44,009,334	19,892,326	72
New York Yankees	1,748,737	\$34,902,292	19,892,326	76
Oakland Athletics	2,494,160	\$48,029,667	6,429,892	96
Philadelphia Phillies	1,927,448	\$25,451,334	5,952,108	70
Pittsburgh Pirates	1,829,395	\$36,228,647	2,387,588	96
San Diego Padres	1,721,406	\$27,689,604	2,561,179	82
San Francisco Giants	1,560,998	\$33,240,600	6,429,892	72
Seattle Mariners	1,651,367	\$26,373,334	3,087,192	64
St. Louis Cardinals	2,418,483	\$28,714,502	2,514,600	83
Texas Rangers	2,198,231	\$26,228,500	4,274,186	77
Toronto Blue Jays	4,028,318	\$49,427,166	4,055,206	96
Team	1993			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,057,460	\$27,444,899	15,084,164	71
Atlanta Braves	3,884,720	\$47,206,416	3,305,309	104
Baltimore Orioles	3,644,965	\$29,253,066	6,990,898	85
Boston Red Sox	2,422,021	\$46,164,788	5,564,512	80
Chicago Cubs	2,653,763	\$36,005,976	8,515,136	84
Chicago White Sox	2,581,091	\$42,115,723	8,515,136	94
Cincinnati Reds	2,453,232	\$41,641,387	1,866,059	73
Cleveland Indians	2,177,908	\$16,690,997	2,885,500	76
Detroit Tigers	1,971,421	\$38,038,498	5,267,948	85
Houston Astros	2,084,618	\$30,130,233	4,012,592	85
Kansas City Royals	1,934,578	\$40,164,878	1,640,830	84
Los Angeles Dodgers	3,170,393	\$33,529,000	15,084,164	81
Milwaukee Brewers	1,688,080	\$25,635,387	1,631,900	69
Minnesota Twins	2,048,673	\$27,127,768	2,667,785	71
Montreal Expos	1,641,437	\$17,622,040	3,277,829	94
New York Mets	1,873,183	\$40,822,667	20,055,768	59
New York Yankees	2,416,942	\$46,588,791	20,055,768	88
Oakland Athletics	2,035,025	\$35,351,334	6,506,076	68
Philadelphia Phillies	3,137,674	\$28,695,858	5,981,652	97
Pittsburgh Pirates	1,650,593	\$24,318,667	2,383,976	75
San Diego Padres	1,375,432	\$12,842,333	2,592,761	61
San Francisco Giants	2,606,354	\$36,342,322	6,506,076	103
Seattle Mariners	2,052,638	\$33,311,042	3,145,638	82
St. Louis Cardinals	2,844,977	\$24,190,667	2,525,726	87
Texas Rangers	2,244,616	\$35,959,690	4,392,638	86
Toronto Blue Jays	4,057,947	\$51,935,034	4,133,343	95

## EXHIBIT 6 (Continued)

Team	1994			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	1,512,622	\$24,528,385	15,268,375	47
Atlanta Braves	2,539,240	\$44,100,972	3,420,579	68
Baltimore Orioles	2,535,359	\$38,711,487	7,079,065	63
Boston Red Sox	1,775,818	\$36,337,937	5,600,882	54
Chicago Cubs	1,845,208	\$32,546,333	8,606,908	49
Chicago White Sox	1,697,398	\$40,144,836	8,606,908	67
Cincinnati Reds	1,897,681	\$41,458,052	1,882,222	66
Cleveland Indians	1,995,174	\$31,705,667	2,894,119	66
Detroit Tigers	1,184,783	\$41,118,509	5,294,874	53
Houston Astros	1,561,136	\$33,092,500	4,106,446	66
Kansas City Royals	1,400,494	\$40,667,375	1,660,149	64
Los Angeles Dodgers	2,279,355	\$38,837,526	15,268,375	58
Milwaukee Brewers	1,268,399	\$24,786,857	1,640,139	53
Minnesota Twins	1,398,565	\$25,053,237	2,710,788	53
Montreal Expos	1,276,250	\$18,771,000	3,300,782	74
New York Mets	1,151,471	\$30,903,583	20,219,211	55
New York Yankees	1,675,556	\$47,512,342	20,219,211	70
Oakland Athletics	1,242,692	\$34,574,000	6,582,260	51
Philadelphia Phillies	2,290,971	\$31,143,000	6,011,197	54
Pittsburgh Pirates	1,222,520	\$21,503,250	2,380,365	53
San Diego Padres	953,857	\$13,774,268	2,624,343	47
San Francisco Giants	1,704,608	\$42,260,538	6,582,260	55
Seattle Mariners	1,104,206	\$28,463,110	3,204,084	49
St. Louis Cardinals	1,866,544	\$29,622,052	2,536,852	53
Texas Rangers	2,503,198	\$32,399,097	4,511,090	52
Toronto Blue Jays	2,907,933	\$42,265,168	4,211,480	55
Team	1995			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	1,748,680	\$34,702,577	15,452,587	78
Atlanta Braves	2,561,831	\$47,023,444	3,535,849	90
Baltimore Orioles	3,098,475	\$48,739,636	7,167,233	71
Boston Red Sox	2,164,410	\$38,157,750	5,637,252	86
Chicago Cubs	1,918,265	\$36,797,696	8,698,680	73
Chicago White Sox	1,609,773	\$40,750,782	8,698,680	68
Cincinnati Reds	1,837,649	\$47,739,109	1,898,386	85
Cleveland Indians	2,842,745	\$40,180,750	2,902,738	100
Detroit Tigers	1,180,979	\$28,663,667	5,321,800	60
Houston Astros	1,363,801	\$33,614,668	4,200,300	76
Kansas City Royals	1,233,530	\$31,181,334	1,679,468	70
Los Angeles Dodgers	2,766,251	\$36,725,956	15,452,587	78
Milwaukee Brewers	1,087,560	\$17,407,384	1,648,378	65
Minnesota Twins	1,057,667	\$15,362,750	2,753,791	56
Montreal Expos	1,309,618	\$13,116,557	3,323,735	66
New York Mets	1,273,183	\$13,097,944	20,382,653	69
New York Yankees	1,705,263	\$58,165,252	20,382,653	79
Oakland Athletics	1,174,310	\$33,372,722	6,658,444	67
Philadelphia Phillies	2,043,598	\$30,333,350	6,040,741	69
Pittsburgh Pirates	905,517	\$17,665,833	2,376,753	58
San Diego Padres	1,041,805	\$25,008,834	2,655,925	70
San Francisco Giants	1,241,500	\$33,738,683	6,658,444	67
Seattle Mariners	1,643,203	\$37,984,610	3,262,530	79
St. Louis Cardinals	1,756,727	\$28,679,250	2,547,978	62
Texas Rangers	1,985,910	\$35,888,726	4,629,542	74
Toronto Blue Jays	2,826,483	\$42,233,500	4,289,617	56



EXHIBIT 6 (Continued)

Team	1996			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	1,820,521	\$25,140,142	15,636,799	70
Atlanta Braves	2,901,242	\$53,797,000	3,651,119	96
Baltimore Orioles	3,646,950	\$55,127,855	7,255,400	88
Boston Red Sox	2,315,231	\$38,516,402	5,673,621	85
Chicago Cubs	2,219,110	\$32,605,000	8,790,452	76
Chicago White Sox	1,676,403	\$44,827,833	8,790,452	85
Cincinnati Reds	1,861,428	\$43,696,946	1,914,549	81
Cleveland Indians	3,318,174	\$47,686,907	2,911,356	99
Detroit Tigers	1,168,610	\$17,955,500	5,348,725	53
Houston Astros	1,975,888	\$29,613,000	4,294,154	82
Kansas City Royals	1,435,997	\$19,980,250	1,698,787	75
Los Angeles Dodgers	3,188,454	\$37,313,500	15,636,799	90
Milwaukee Brewers	1,327,155	\$11,701,000	1,656,616	80
Minnesota Twins	1,437,352	\$21,254,000	2,796,794	78
Montreal Expos	1,616,709	\$17,264,500	3,346,688	88
New York Mets	1,588,323	\$24,890,167	20,546,095	71
New York Yankees	2,250,877	\$61,511,870	20,546,095	92
Oakland Athletics	1,148,380	\$22,524,093	6,734,627	78
Philadelphia Phillies	1,801,677	\$30,403,458	6,070,285	67
Pittsburgh Pirates	1,332,150	\$16,994,180	2,373,141	73
San Diego Padres	2,187,886	\$33,376,026	2,687,506	91
San Francisco Giants	1,413,922	\$34,646,793	6,734,627	68
Seattle Mariners	2,723,850	\$43,131,001	3,320,976	85
St. Louis Cardinals	2,654,718	\$38,730,666	2,559,103	88
Texas Rangers	2,889,020	\$41,330,028	4,747,993	90
Toronto Blue Jays	2,559,573	\$28,778,577	4,367,753	74
Team	1997			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	1,767,330	\$46,684,364	15,821,010	84
Atlanta Braves	3,464,488	\$53,111,000	3,766,389	101
Baltimore Orioles	3,711,132	\$64,611,399	7,343,568	98
Boston Red Sox	2,226,136	\$40,611,351	5,709,991	78
Chicago Cubs	2,190,308	\$30,791,000	8,882,224	68
Chicago White Sox	1,864,782	\$41,849,500	8,882,224	80
Cincinnati Reds	1,785,788	\$38,206,000	1,930,712	76
Cleveland Indians	3,404,750	\$58,865,056	2,919,975	86
Detroit Tigers	1,365,157	\$20,985,500	5,375,651	79
Houston Astros	2,046,781	\$34,932,500	4,388,008	84
Kansas City Royals	1,517,638	\$33,868,149	1,718,106	67
Los Angeles Dodgers	3,319,504	\$48,472,321	15,821,010	88
Milwaukee Brewers	1,444,027	\$26,564,840	1,664,855	78
Minnesota Twins	1,411,064	\$32,197,500	2,839,797	68
Montreal Expos	1,497,609	\$18,010,500	3,369,641	78
New York Mets	1,766,174	\$34,985,330	20,709,538	88
New York Yankees	2,580,325	\$73,389,577	20,709,538	96
Oakland Athletics	1,264,218	\$7,879,889	6,810,811	65
Philadelphia Phillies	1,490,638	\$31,102,439	6,099,830	68
Pittsburgh Pirates	1,657,022	\$15,124,166	2,369,530	79
San Diego Padres	2,089,333	\$32,765,172	2,719,088	76
San Francisco Giants	1,690,869	\$43,067,378	6,810,811	90
Seattle Mariners	3,192,237	\$46,298,970	3,379,422	90
St. Louis Cardinals	2,634,014	\$50,224,167	2,570,229	73
Texas Rangers	2,945,228	\$44,591,013	4,866,445	77
Toronto Blue Jays	2,589,297	\$48,964,833	4,445,890	76

EXHIBIT 6 (Continued)

Team	1998			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,519,280	\$54,190,500	16,005,222	85
Atlanta Braves	3,360,860	\$61,840,254	3,881,658	106
Baltimore Orioles	3,684,650	\$77,320,921	7,431,735	79
Boston Red Sox	2,314,704	\$59,547,000	5,746,361	92
Chicago Cubs	2,623,194	\$51,061,000	8,973,996	90
Chicago White Sox	1,391,146	\$37,855,000	8,973,996	80
Cincinnati Reds	1,793,649	\$20,707,333	1,946,875	77
Cleveland Indians	3,467,299	\$56,843,441	2,928,594	89
Detroit Tigers	1,409,391	\$23,318,980	5,402,577	65
Houston Astros	2,458,451	\$48,354,000	4,481,863	102
Kansas City Royals	1,494,875	\$35,610,000	1,737,424	72
Los Angeles Dodgers	3,089,222	\$60,731,667	16,005,222	83
Milwaukee Brewers	1,811,593	\$37,254,036	1,673,094	74
Minnesota Twins	1,165,976	\$22,027,500	2,882,800	70
Montreal Expos	914,909	\$8,317,500	3,392,594	65
New York Mets	2,287,948	\$58,710,665	20,872,980	88
New York Yankees	2,955,193	\$73,963,698	20,872,980	114
Oakland Athletics	1,232,343	\$18,585,114	6,886,995	74
Philadelphia Phillies	1,715,722	\$29,922,500	6,129,374	75
Pittsburgh Pirates	1,560,950	\$13,695,000	2,365,918	69
San Diego Padres	2,555,874	\$53,081,166	2,750,670	98
San Francisco Giants	1,925,364	\$48,339,715	6,886,995	89
Seattle Mariners	2,651,511	\$44,845,014	3,437,868	76
St. Louis Cardinals	3,195,691	\$47,608,948	2,581,355	83
Texas Rangers	2,927,399	\$62,755,368	4,984,897	88
Toronto Blue Jays	2,454,303	\$37,618,500	4,524,027	88
Team	1999			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,253,040	\$53,345,297	16,189,433	70
Atlanta Braves	3,284,901	\$79,831,599	3,996,928	103
Baltimore Orioles	3,432,099	\$78,948,641	7,519,903	78
Boston Red Sox	2,446,277	\$75,260,656	5,782,730	94
Chicago Cubs	2,813,854	\$55,544,648	9,065,768	67
Chicago White Sox	1,349,151	\$24,535,000	9,065,768	75
Cincinnati Reds	2,061,324	\$38,891,007	1,963,039	96
Cleveland Indians	3,468,436	\$73,341,692	2,937,212	97
Detroit Tigers	2,026,491	\$36,979,666	5,429,502	69
Houston Astros	2,706,017	\$58,064,000	4,575,717	97
Kansas City Royals	1,506,068	\$17,442,000	1,756,743	64
Los Angeles Dodgers	3,098,042	\$76,607,247	16,189,433	77
Milwaukee Brewers	1,701,790	\$43,576,575	1,681,333	74
Minnesota Twins	1,202,829	\$15,795,000	2,925,803	63
Montreal Expos	772,737	\$18,140,250	3,415,547	68
New York Mets	2,726,008	\$72,503,334	21,036,423	96
New York Yankees	3,293,659	\$92,440,955	21,036,423	98
Oakland Athletics	1,434,632	\$24,562,547	6,963,178	87
Philadelphia Phillies	1,825,337	\$32,116,500	6,158,919	77
Pittsburgh Pirates	1,638,023	\$24,532,420	2,362,307	78
San Diego Padres	2,523,538	\$46,487,179	2,782,251	74
San Francisco Giants	2,078,365	\$46,016,934	6,963,178	86
Seattle Mariners	2,915,908	\$47,001,254	3,496,314	79
St. Louis Cardinals	3,235,833	\$46,337,129	2,592,481	75
Texas Rangers	2,774,501	\$81,676,598	5,103,349	95
Toronto Blue Jays	2,163,486	\$49,972,300	4,602,163	84



## EXHIBIT 6 (Continued)

Team	2000			
	Attendance	Player Payroll	Population	Wins
Anaheim Angels	2,066,982	\$51,464,167	16,373,645	82
Atlanta Braves	3,234,304	\$84,537,836	4,112,198	95
Baltimore Orioles	3,153,397	\$81,447,435	7,608,070	74
Boston Red Sox	2,625,333	\$77,940,333	5,819,100	85
Chicago Cubs	2,789,511	\$60,539,333	9,157,540	65
Chicago White Sox	1,947,799	\$31,133,500	9,157,540	95
Cincinnati Reds	2,577,371	\$46,867,200	1,979,202	85
Cleveland Indians	3,456,278	\$75,880,971	2,945,831	90
Detroit Tigers	2,438,617	\$58,265,167	5,456,428	79
Houston Astros	3,020,581	\$51,289,111	4,669,571	72
Kansas City Royals	1,564,847	\$23,433,000	1,776,062	77
Los Angeles Dodgers	2,880,242	\$88,124,286	16,373,645	86
Milwaukee Brewers	1,573,621	\$36,505,333	1,689,572	73
Minnesota Twins	1,000,760	\$16,519,500	2,968,806	69
Montreal Expos	926,272	\$34,807,333	3,438,500	67
New York Mets	2,820,530	\$79,509,776	21,199,865	94
New York Yankees	3,227,657	\$92,538,260	21,199,865	87
Oakland Athletics	1,728,885	\$31,971,333	7,039,362	91
Philadelphia Phillies	1,612,769	\$47,308,000	6,188,463	65
Pittsburgh Pirates	1,748,908	\$28,928,333	2,358,695	69
San Diego Padres	2,423,149	\$54,821,000	2,813,833	76
San Francisco Giants	3,318,800	\$53,737,826	7,039,362	97
Seattle Mariners	3,148,317	\$58,915,000	3,554,760	91
St. Louis Cardinals	3,336,493	\$61,453,863	2,603,607	95
Texas Rangers	2,800,075	\$70,795,921	5,221,801	71
Toronto Blue Jays	1,819,919	\$46,238,333	4,680,300	83

Note: Colorado, Florida, Tampa Bay, and Arizona are not included as they were not in existence for the whole time period.

## Ocean Carriers

In January 2001, Mary Linn, Vice President of Finance for Ocean Carriers, a shipping company with offices in New York and Hong Kong, was evaluating a proposed lease of a ship for a three-year period, beginning in early 2003. The customer was eager to finalize the contract to meet his own commitments and offered very attractive terms. No ship in Ocean Carrier's current fleet met the customer's requirements. Linn, therefore, had to decide whether Ocean Carriers should immediately commission a new capesize carrier that would be completed two years hence and could be leased to the customer.

### Ship Operations

Ocean Carriers Inc. owned and operated capesize dry bulk carriers that mainly carried iron ore worldwide. This type of vessel ranged in size from 80,000 deadweight tons to 210,000 deadweight tons of cargo carrying capacity. Capesize carriers were too large to transit the Panama Canal and therefore had to sail around Cape Horn to travel between the Atlantic and Pacific Oceans. In January 2001, there were 553 capesizes in service in the world.

Ocean Carriers' vessels were mostly chartered on a "time charter" basis for a period such as one year, three years, or five years, although the spot charter market was used on occasion. The company that chartered the ship was called the "charterer." The charterer paid Ocean Carriers a daily hire rate for the entire length of the contract, determined what cargo the vessel carried, and controlled where the vessel loaded and unloaded. The company, in turn, supplied a seaworthy vessel that complied with international regulations and manned the vessel with a fully qualified and certified crew.

Operations also included ensuring adequate supplies and stores were onboard, supplying lubricating oils, scheduling repairs, conducting overall maintenance of the vessel, and placing all insurances for the vessel. For a new ship coming on line in early 2003, operating costs were expected to initially average \$4,000 per day, and to increase annually at a rate of 1% above inflation. Charterers were not charged a daily rate for the time the vessel spent in maintenance and repair, although operating costs were still incurred. Initially, 8 days a year were scheduled for such work. The time allotted to maintenance and repairs increased to 12 days per year after five years of operation, and to 16 days a year for ships older than 10 years.

The company had a policy of not operating vessels older than 15 years. Every five years, international regulations mandated that a special survey be undertaken to ensure seaworthiness as defined by international regulations. By the fifteenth year, the maintenance required to comply with the special surveys was very costly. Exhibit 1 shows the

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**EXHIBIT 1**  
Capital Expenditures Anticipated in Preparation for Special Surveys

2007	2012	2017	2022	2027
\$300,000	\$350,000	\$750,000	\$850,000	\$1,250,000

Source: Company estimates

capital expenditures anticipated in preparation for the special surveys. These outlays were considered capital expenditures, which would each be depreciated on a straight-line basis over a 5-year period. To avoid the larger expenditures for older ships, the company planned to sell the vessel into the secondhand market, or “scrap” the vessel just before the third special survey. When scrapped, the vessel was demolished and its steel was sold to demolition yards. The company estimated the scrap value to be \$5M at the end of the fifteenth year.

**Supply of Capesizes**

Daily hire rates were determined by supply and demand. The number of ships available equaled the number of vessels in service the previous year plus any new ships delivered minus any scrappings and sinkings. When the market demand for shipping capacity was high, owners would keep a vessel in operation as long as possible. Conversely, when market demand was low, scrapping rose. Supply was also affected by the increases in size and efficiency the newer ships offered. As ships got bigger, faster, and more fuel efficient, fewer ships were needed to carry the same amount of cargo. Moreover, there had been very few scrappings in recent years, and most of the capacity of the worldwide fleet of capesizes was fairly young. Exhibit 2 shows the capesize fleet by age category as of December 2000. Exhibit 3 shows the number of new capesize vessels by expected delivery date.

Estimates of future orders for vessels were not entirely reliable, especially projections spanning more than two or three years in the future. If sentiment was optimistic on market conditions, more vessels would be added to the order book. If the market outlook was poor, then vessels would be cancelled or converted to other types of vessels. A capesize took approximately 10 months to build, but contracts were signed to secure a berth place approximately two years before delivery and over one year before steel cutting for the vessel. “Delivery” referred to when the vessel was complete and delivered from the shipyard to the owner.

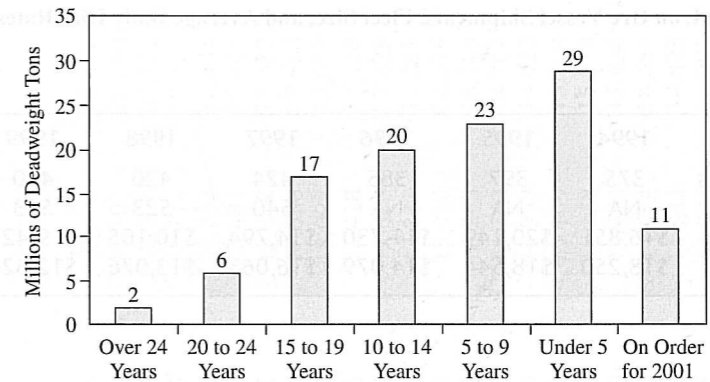
**Market Conditions**

The demand for dry bulk capesizes was determined by the world economy, especially its basic industries. Over 85% of the cargo carried by capesizes was iron ore and coal. Production and demand for these products increased in a strong economy. Changes in trade patterns also affected the demand for capesizes. For example, if a Western European country decided to switch its supply of iron ore from the United States to Australia, the demand for capesizes would increase since the distance between Europe and Australia is greater than the distance between Western Europe and the United States.

Spot charter rates tended to fluctuate more widely than time charter rates, i.e., the highs were higher and the lows were lower in the spot market. Therefore, when the market was high, ship owners sought time charters to lock in the high rates for as long a period as possible while the charterers preferred to trade in the spot market to avoid

**EXHIBIT 2**  
Capesize Fleet by Age Category as of December 2000

Source: Company estimates



**EXHIBIT 3**  
Current Order Book for Dry Bulk Capesizes by Delivery Date

	2001	2002	2003	2004
Number of vessels	63	33	21	9

Source: Company documents

**EXHIBIT 4** Daily Hire Rate Adjustment Factor for Dry Bulk Capesizes Based on Age of Vessel

Source: Company estimates

Over 24 Years	20 to 24 Years	15 to 19 Years	10 to 14 Years	5 to 9 Years	Under 5 Years
0.65	0.75	0.80	1.00	1.05	1.15

having to pay high daily rates any longer than necessary. Because Ocean Carriers’ vessels were relatively new and a bit larger than the industry average, they earned a premium to the market. For example, new ships generally earned a 15% premium in daily hire rates relative to the industry-wide average, while ships over 25 years old typically received a 35% discount from the industry average. Exhibit 4 shows average adjustments to daily hire rates for 3-year time charters based on the age of the ship.

The average prevailing spot market rate at the time was \$22,000 per day.<sup>1</sup> With Australian production in iron ore expected to be strong and Indian iron ore exports expected to take off in the next few years, Linn took an optimistic view of the long-term market demand for capesizes. However, she also considered that 63 new vessels were scheduled for delivery in 2001 and that imports of iron ore and coal would probably remain stagnant over the next two years. Linn therefore anticipated that spot rates would fall in 2001 and 2002. In 2003, however, Linn was aware that Australian and Indian ore exports would begin, and that these new supplies would significantly increase trading volumes. Demand for capesizes would likely increase with these higher trading volumes, possibly boosting prices. Exhibit 5 provides data on some demand drivers, fleet size, and average daily hire rates over time.

<sup>1</sup>This was the current spot rate for a 10–14 year old ship. Newer ships commanded a higher daily rate, and older ships received a lower rate.



**EXHIBIT 5 Worldwide Iron Ore Vessel Shipments, Fleet Size, and Average Daily Hire Rates for Capesize Charters, 1994–2001**

Source: Company documents

	1994	1995	1996	1997	1998	1999	2000	2001E
Iron ore vessel shipments	375	397	385	424	420	410	440	436
Fleet size	NA	NA	NA	540	523	523	552	612
Avg. spot rate	\$16,851	\$20,149	\$11,730	\$14,794	\$10,105	\$ 9,427	\$22,575	
Avg. 3-yr charter rate	\$18,250	\$18,544	\$14,079	\$16,063	\$13,076	\$12,626	\$15,344	

Linn enlisted the services of a shipping-industry consulting firm to help her forecast daily hire rates for a new capesize. Worldwide iron ore vessel shipments and charter rates had been very strongly associated historically. The consulting group felt that this relation would continue to hold in the future, and based its forecast of charter rates off of long-term forecasts for worldwide iron ore vessel shipments. The long-term forecast for worldwide iron ore vessel shipments was for 2% annual growth during 2002 to 2005, and then dropping to 1.5% thereafter. Exhibit 6 shows the forecast of daily hire rates that was prepared for Linn.

## Newbuilding

The charterer currently in negotiations with Ocean Carriers for a three-year time charter starting in 2003 had offered a rate of \$20,000 per day with an annual escalation of \$200 per day. The expected rate of inflation was 3%.

The vessels in Ocean Carriers' current fleet could not be committed to a time charter beginning in 2003 because the ships either were already leased during that period or were too small to meet the customer's needs. Moreover, there were no sufficiently large capesizes available in the secondhand market. Ocean Carriers had to decide immediately if it should commission a new 180,000 deadweight ton ship for delivery in early 2003. The ship would cost \$39 million, with 10% of the purchase price payable immediately and 10% due in a year's time. The balance would be due on delivery. A new ship would be depreciated on a straight-line basis over 25 years. In addition, Linn expected to make a \$500,000 initial investment in net working capital, which she anticipated would grow with inflation.

Linn was also confident that the charterer would honor his proposed contract with Ocean Carriers if the company agreed to the terms. While there is always a risk that the charterer would stop paying before the end of the contract or terminate the contract early, Linn considered that the risk was small. Ocean Carriers had long established relationships with its charterers and only contracted with reputable charterers.

The proposed contract, though, was only for three years, and it was Linn's responsibility to decide if future market conditions warranted the considerable investment in a new ship.

**EXHIBIT 6 Forecasted Daily Time Charter Rates for New Capesize Vessel**

Source: Company documents

Age of Ship	Event Year	Calendar Year	Iron Ore Shipments (Millions of Tons)	% Growth	Avg Daily Charter Rate	% Growth	Adjustment Factor for Hire Rate	Adjusted Daily Hire Rate	Expected Daily Hire Rate
1	0	2000	440	7.3%	15,344	21.5%			20,000
2	1	2001	436	-0.9%	14,747	-3.9%			20,200
3	2	2002	445	2.0%	15,072	2.2%	1.15	17,173	20,400
4	3	2003	454	2.0%	15,403	2.2%	1.15	18,103	18,714
5	4	2004	463	2.0%	15,742	2.2%	1.15	18,501	17,283
6	5	2005	472	2.0%	16,088	2.2%	1.15	18,714	17,481
7	6	2006	479	1.5%	16,273	1.2%	1.05	17,283	17,682
8	7	2007	486	1.5%	16,460	1.2%	1.05	17,481	17,886
9	8	2008	493	1.5%	16,650	1.2%	1.05	17,682	18,092
10	9	2009	501	1.5%	16,841	1.2%	1.05	17,886	17,428
11	10	2010	508	1.5%	17,035	1.2%	1.05	18,092	17,628
12	11	2011	516	1.5%	17,231	1.2%	1.00	17,428	17,831
13	12	2012	524	1.5%	17,429	1.2%	1.00	17,628	18,036
14	13	2013	532	1.5%	17,629	1.2%	1.00	18,036	18,243
15	14	2014	540	1.5%	17,832	1.2%	1.00	18,243	14,762
16	15	2015	548	1.5%	18,037	1.2%	0.80	14,762	14,932
17	16	2016	556	1.5%	18,245	1.2%	0.80	15,104	15,278
18	17	2017	564	1.5%	18,454	1.2%	0.80	15,454	14,654
19	18	2018	573	1.5%	18,667	1.2%	0.80	14,823	14,993
20	19	2019	581	1.5%	18,881	1.2%	0.80	15,166	15,341
21	20	2020	590	1.5%	19,098	1.2%	0.75	15,341	13,448
22	21	2021	599	1.5%	19,318	1.2%	0.65	13,448	
23	22	2022	608	1.5%	19,540	1.2%			
24	23	2023	617	1.5%	19,765	1.2%			
25	24	2024	626	1.5%	19,992	1.2%			
26	25	2025	636	1.5%	20,222	1.2%			
27	26	2026	645	1.5%	20,455	1.2%			
28	27	2027	655	1.5%	20,690	1.2%			

# Whirlpool Europe

By the spring of 1999, Whirlpool Corporation (WHR:NYSE), the worldwide leader in the home appliance industry, had nearly ten years experience selling to the European market and had grown its European market share to a sizeable 13%. Whirlpool Europe's chief financial officer and its vice president of logistics were evaluating an investment in an enterprise resource planning (ERP) system. Named *Project Atlantic*, the system would re-organize the information flow in all of Whirlpool Europe. If successful, the project would improve operating effectiveness and efficiency in Whirlpool's sales and marketing, operations and logistics, and finance areas. The cost of the project, however, would be substantial, and would include the direct costs of the system and the personnel that would be required to complete the complex implementation. Senior management had quantified the costs and benefits, and now needed to evaluate them.

## Company Background

In 1989, Whirlpool Corporation entered the European market, paying \$470 million to purchase a 53% stake in the appliance division of Dutch-based Philips Electronics. The companies formed a joint venture firm named Whirlpool International BV (WIBV) and one year later, launched a dual-branding program which added the Whirlpool name to the Philips product lines. In July 1991, Whirlpool purchased Philips' 47% stake for \$600 million to become the sole owner of WIBV. Over time, Whirlpool developed three pan-European brands to differentiate its product line: Whirlpool, Bauknecht, and Ignis. Other regional brands like Laden, sold exclusively in France, were also created. By fiscal 1998, Whirlpool Europe was third in market share with \$2.4 billion in sales.

Whirlpool Europe manufactured products based on sales budgets or forecasts, and then held them as finished goods inventory. European manufacturing operated 11 plants, ten located in Europe and one in Africa. Each plant produced a specific product line across all brands. Exhibit 1 provides a plant listing. Unique country requirements, such as language, products attribute preferences, and electrical specifications resulted in multiple stock-keeping units (SKUs) for the same model. In total, Whirlpool Europe manufactured 6,900 SKUs. Orders moved from manufacturing to one of two central distribution centers and then on to one of 12 regional distribution centers before reaching the customer.

In each major European market, a country sales office—responsible for sales generation and forecasting, order processing and fulfillment, billing and cash collection—was the primary interface with customers. Whirlpool Europe operated many stand-alone

Research Associate Aldo M. Sesia, Professor Sudhakar Balachandran of Columbia University, and Professor Richard S. Ruback prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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information systems that were developed by individual plants, distribution centers, or sales offices specifically to meet their own business requirements. Information could not be easily shared across functions or organizations, and was often inconsistent and irreconcilable. The sales organization, for example, had to access as many as 13 independent inventory systems to view inventory across the supply chain.

There were two types of customers: consumers who purchased stand-alone appliances for their homes and contractors who purchased built-in appliances for new home construction or kitchen remodeling.

Success in the consumer market depended on product quality, price, and availability. Whirlpool Europe estimated that its distribution centers had the product that matched the customer's demand 79% of the time. If the product was unavailable, the customer had to either wait or switch to another product. Often, the lack of immediate availability resulted in lost sales.

Kitchen remodeling in Europe generally involved the installation of new cabinets along with built-in appliances. Installation often occurred only a few weeks after the kitchen was ordered by the homeowner. Whirlpool estimated that this segment of the market would grow to about 25% of kitchen appliance sales. To supply the built-in appliances to this market, Whirlpool would have to deliver its appliances within ten days of being ordered by the contractor. Under its current inventory and information systems, Whirlpool was unable to reliably satisfy the contractors' required delivery time.

## Project Atlantic

### Description

The goal of Project Atlantic was to design and implement an enterprise resource planning (ERP) system that would allow Whirlpool Europe to better serve its consumer market for stand-alone appliances and contract market for built-in appliances and, at the same time, reduce its inventory by 12 days of sales. These competing goals would be accomplished through an information system that would allow a country sales office to view product throughout the supply chain, thereby increasing the efficiency of the distribution process. Project Atlantic was expected to provide some integration with suppliers and to increase inventory visibility across the supply chain. This would enable the company to improve product availability and have a substantially lower inventory level. In addition, the ERP system would allow Whirlpool to build products to specific orders from contractors.

Whirlpool Corporation took a phased approach to implementation of its ERP systems, beginning in North America, Brazil, and select central European countries. Project Atlantic would focus on the remaining European countries. With ERP, Whirlpool Europe's disparate information systems would be retired and replaced with a single computing architecture for all of Europe. The company planned to install a standard or so-called "off-the-shelf" ERP system, without any modifications, requiring the company to change many of its operating processes.<sup>1</sup> Employee acceptance of change was therefore critical for success.

The project would be managed under country groupings called Waves. Exhibits 2A and 2B detail the Wave groupings and implementation schedules.

<sup>1</sup>The company identified seven top-level operational processes, of which 74 sub-processes were determined to be impacted by ERP.

## Benefits

### Working Capital Reduction

The company had 51 days sales of inventory (DSI).<sup>2</sup> Of the 51 days, approximately eight days were reserved and allocated units, nine were in transit, and three were obsolete. The ERP system would enable Whirlpool to make its supply chain more transparent and efficient, thereby eliminating the reserved, allocated, and obsolete units, and reducing the in-transit time. After a statistical study of its inventory, Whirlpool Europe developed a theoretical model target inventory level of 29 days. Project Atlantic was forecasted to reduce 12 days of inventory in each Wave—over half of the difference between its actual inventory and the theoretical model inventory. Exhibit 3 shows data for 1997 including DSI by Wave. Exhibit 4 details the yearly percent DSI reduction in DSI by Wave.

### Revenue and Gross Margin Increase

A primary goal of the ERP system was to increase product availability by making the supply chain more visible and by integrating sales forecasting and inventory management. The company's targeted product availability was 92%. The projections assumed that the ERP system and process changes would enable the company to realize an increase in unit sales equal to 25% of the improvement in product availability. Those incremental sales would contribute to increasing the profitability of Whirlpool Europe. Exhibit 3 includes 1997 data on product availability, units, revenue, and margins by Wave. Exhibit 4 details the projected timing of the product availability improvements.

The company's ability to evaluate profitability at a product line, account, or order level was hindered by the lack of an integrated information system. Decisions on prices, for example, were sometimes made with incomplete or dated information. By installing ERP, the company forecasted a 0.25% gross margin increase by the second year after implementation. To forecast the impact, the company used 1997 revenue as the baseline to apply the gross margin increase for each year of cash flow projections. Exhibit 5 presents the projected improvements by year and by wave.

### Other Cost Savings

The ERP system was expected to substantially simplify the processing and management of customer orders. An 18% reduction in the 79 order desk employees at an average cost of \$40,000 per year per employee was expected once the system was implemented. The ERP system would also simplify the accounting function and result in a 15% reduction in the 60 finance employees. The expected cost saving was \$45,000 per year for each employee that was eliminated.

The ERP system was also anticipated to generate other cost savings. Whirlpool paid about \$40 annually for each square meter of warehouse space. With the reduction in inventory from the implementation of the ERP system, warehouse space could be reduced by 15% (7,200 square meters). Also, customers returned 3% of units they purchased, which cost Whirlpool about \$30 per unit returned. ERP was expected to reduce the number of returned units by eliminating shipping errors. The ERP system was also forecast to reduce bad debt expense and information system expenses. Exhibit 6 details these anticipated savings.

<sup>2</sup>DSI = (Ending Inventory) / (COGS/Days in Period)

## Costs

### Capital Expenditures

The company would need to spend \$4.3 million in 1999 for capital equipment, \$8.6 million in 2000, \$6.9 million in 2001, and \$4.1 million in 2002. It would cost \$600,000 and \$300,000 for software licenses in 1999 and 2000, respectively. The capital equipment would be depreciated in equal amounts over five years.

### Implementation

Implementation required extensive employee training; creation, testing, and documentation of new business processes; and, of course, installation of the ERP software. Implementation of each Wave would require an average of 50 current Whirlpool employees working with external consultants at an expected cost of \$45,000 for each employee. According to forecast, the company would need 19 consultants in 1999, nine in 2000, seven in 2001, and four in the following year, at an average monthly cost per consultant of \$15,400.

To ensure compliance with the project plan, the company planned to put a three-person task force in place beginning in July 2000 through June 2004, at an annual cost of \$600,000.

### Ongoing Operational

Beginning in 2003, when all Wave implementations were completed, the cost to manage and maintain the new information systems was forecasted to be \$3 million annually. However, because each Wave was scheduled to go on-line at a different time, costs would begin early in the program. Beginning in 1999, the company expected to incur \$600,000 in annual expense, which would increase by an additional \$600,000 each subsequent year through 2003, reaching \$3,000,000 annually.

License maintenance fees were forecasted to begin in 2000 at a cost of \$100,000 and increase an additional \$100,000 each year through 2003, reaching \$400,000 annually. These costs would continue until the system was replaced.

### Cost of Capital and Taxes

Whirlpool Europe used a 9% cost of capital to discount the ERP project and faced a 40% tax rate.

## EXHIBIT 1 Whirlpool Europe's Manufacturing Sites

Source: Company documents.

Location	Products
Amiens France	Washers and Dryers
Norrköping Sweden	Microwave Ovens
Poprad Slovakia	Washers
Neunkirchen Germany	Dishwashers
Schorndorf Germany	Washers
Cassinetta Italy	Refrigerators and Cooking Appliances
Naples Italy	Washers
Siena Italy	Chest Freezers
Trento Italy	Refrigerators and Freezers
Isithebe South Africa	Refrigerators and Freezers

## EXHIBIT 2A Project Atlantic Implementation Groupings<sup>a</sup>

Source: Company documents.

Wave West	Wave South	Wave Central	Wave North
Belgium	Italy	Czech Republic	Denmark
France	Portugal	Hungary	Finland
Netherlands	Spain	Poland	Ireland
Plus: Warehouse Mgt and Physical Dist.		Slovakia	Norway
			Sweden
			United Kingdom

<sup>a</sup>Austria, Germany, and Switzerland were not part of Project Atlantic.

## EXHIBIT 2B Wave Implementation Schedule

Source: Company documents.

	West	South	Central	North
Start Date:	MAY 1999	MAY 2000	MAR 2001	JAN 2002
End Date:	APR 2000	FEB 2001	DEC 2001	AUG 2002

## EXHIBIT 3 1997 Data for Whirlpool Europe

Source: Company documents.

Wave	DSI	Product Availability	Units Sold	Revenue (000s US\$)	Margin (000s US\$)
West	45	73.5%	2,271,139	477,784	58,859
South	51	83.1%	1,415,949	283,549	46,241
Central	67	76.8%	977,665	185,625	43,678
North	55	83.2%	1,443,156	280,901	29,818

## EXHIBIT 4 Improvements in DSI and Availability by Year and Wave

Source: Company documents.

Wave	Improvements by Year by Wave					
	2000	2001	2002	2003	2004	2005
West	25%	40%	35%			
South		35%	40%	25%		
Central			40%	40%	20%	
North				40%	40%	20%



**EXHIBIT 5**  
Margin Improvements  
by Year by Wave

Source: Company documents.

Wave	Cumulative Margin Improvements by Year by Wave					
	2000	2001	2002	2003	2004	2005
West	0.06%	0.25%	0.25%	0.25%	0.25%	0.25%
South		0.10%	0.25%	0.25%	0.25%	0.25%
Central			0.13%	0.25%	0.25%	0.25%
North				0.13%	0.25%	0.25%

**EXHIBIT 6** Forecasted Other Expense Savings by Year (000s US\$)

Source: Company documents.

	2000	2001	2002	2003	2004	2005	2006	2007
Order Desk Headcount	0	190	411	442	474	506	537	569
Finance Headcount	81	135	216	324	405	405	405	405
Warehouse Space	18	72	155	230	274	288	288	288
Bad Debt Expense	102	512	922	1,024	1,024	1,024	1,024	1,024
Information Systems	420	840	840	1,280	1,280	1,280	1,280	1,280
	621	1,749	2,544	3,300	3,457	3,503	3,534	3,566

# Health Development Corporation

Mr. Paul Couturier, the CEO of Health Development Corporation (HDC), was negotiating the sale of his company in the spring of 2000. The Company, which owned and managed health clubs in the Greater Boston area, had retained a local investment firm, Kaufman & Co., to solicit bids. They received several bids from national or regional health club companies seeking to establish themselves in the Boston area. The bids were lower than expected, largely because of the way the bidding companies considered HDC's ownership of Lexington Club's real estate. Like most health clubs, HDC generally leased their health club real estate but in 1999, HDC had taken advantage of an opportunity to purchase the Lexington Club at what Paul Couturier thought was a very attractive price. He was surprised that HDC's ownership of the Lexington Club seemed to be reducing the company's offering price and was mulling his alternatives.

## The Company

HDC owned nine health and fitness clubs in the Greater Boston area. It also operated three other facilities under management contracts, including Shad Hall at the Harvard Business School. As Exhibits 1 and 2 demonstrate, the Company had realized rapid growth between 1994 and 1999, almost doubling its revenue and tripling its operating margin.

Much of HDC's success came from its three largest clubs located in Boston suburbs near the Route 128 beltway. Each of these clubs offered a range of services, including fitness, personal training, tennis, swimming, and childcare. The Wellesley Center, located in Wellesley, MA, was a 75,000 square foot facility that had over 4500 members. Its projected annual revenue was in excess of \$6.3 million for the year 2000. The Lexington Club, located in Lexington, MA, was a 62,000 square foot facility that had over 4000 members with projected annual revenue in excess of \$3.9 million for the year 2000. The Colonial Club, located in Lynnfield, MA, near the intersection of Routes 128 and 95, was a 55,000 square foot facility that had over 2500 members with projected annual revenue in excess of \$2.7 million for the year 2000.

The Company continued to expand during 1999, adding the Franklin Club in Franklin, MA, and the Andover Club in Andover, MA. The Andover Club required a substantial capital investment to convert it from a tennis-only facility into a multi-purpose facility. The Company anticipated that the new facilities would not be profitable for about two years after their acquisition. The startup costs of the two new facilities were expected to reduce operating profits by about \$400,000 in the year 2000.

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## The Opportunity to Purchase the Lexington Club Real Estate

Until the spring of 1999, HDC leased the building and 9 acres of land that housed the Lexington Club. The lease terms of health clubs are generally linked to the revenue generated by the facility. HDC's lease payments for the Lexington Club were about 23.5% of its revenue. With anticipated revenue of about \$3.9 million in the year 2000, the projected lease payment was about \$925,000. The revenue and the lease payments were expected to grow at about 5% a year.

In 1999, HDC had the option to purchase the Lexington Club real estate for \$6.5 million. The Company had not purchased real estate in the past for two reasons. First, as a small privately held company, HDC preferred to use its limited capital to add, expand, or enhance clubs. Second, leasing property allowed the company to reduce its risk by keeping real estate costs proportional to revenue. In the case of the Lexington property, however, HDC management determined that the lease payments were substantially greater than the costs of owning the real estate. After attempting unsuccessfully to renegotiate the lease payments downward, HDC decided to purchase the Lexington Club property. The Company financed the Lexington Club purchase with \$750,000 of excess cash and a mortgage for \$5,750,000 at an interest rate of 8.75%.

## The Offers to Purchase

Kaufman & Company solicited bids for HDC in February 2000. In exchange for signing a confidentiality agreement, potential bidders received an information memorandum that provided a detailed description of the Company, its operations, and its financial results. Potential bidders were also given the opportunity to visit the health clubs and to interview management. Five potential buyers submitted bids.

HDC, with the advice of Kaufman & Co., decided to focus on the bid by Town Sports International (TSI). TSI had a large share of the New York health club market, with 67 clubs, but only five clubs in the Boston market. TSI shared many of HDC's operating philosophies, making it an ideal fit with HDC. TSI's offer price was the highest of the initial offers and the potential synergies between TSI and HDC made Kaufman confident that the highest final bid would also come from TSI. Nevertheless, HDC was disappointed with the initial offer price and hoped that negotiations would substantially improve the offer.

In negotiations, TSI revealed that it viewed the Lexington purchase as a negative, and would have been willing to pay the same or a higher multiple of EBITDA if HDC did not own the real estate. HDC argued that the Lexington purchase was clearly a value increasing decision, and therefore should increase the equity value of the Company. The math, however, undeniably supported TSI's position. The valuation projected HDC's year 2000 earnings before taxes, interest, depreciation, and amortization (EBITDA). A multiple of about five times was applied to the EBITDA to determine the total enterprise value, and the debt of the Company was subtracted to determine the equity value of the Company. Exhibit 3 shows that the real estate purchase reduced excess cash by \$750,000 and added \$5.75 million in debt. This \$6.5 million was greater than five times the resulting increase in EBITDA.

Paul Couturier and Kaufman & Company began to assess alternative structures. One choice was to sell the Lexington real estate to another entity that would in turn lease it back to the potential buyer. According to TSI's operating model, which set benchmark operating cost ratios, the projected lease payment for the Lexington Club could not exceed \$525,000. Given current interest rates, HDC believed they could obtain a ten-year mortgage at an 8.5% interest rate but that would require the lease payments to increase to 110% of the mortgage payment. This arrangement seemed to have the potential to meet the concerns of TSI and maximize the value to the HDC shareholders, but it was going to be difficult to structure.

### EXHIBIT 1 Income Statement for Health Development Corporation

Source: Company reports.

	Year Ended December 31,								
	1994	1995	1996	1997	1998	1999	2000 <sup>a</sup>	2001 <sup>a</sup>	2002 <sup>a</sup>
Total Revenue	8,316	9,957	12,584	13,636	14,549	16,162	19,324	21,311	22,809
Club Operating Expenses	5,779	6,990	8,837	9,337	9,877	10,885	13,130	14,313	15,092
Gross Profit	2,537	2,967	3,747	4,299	4,672	5,277	6,194	6,998	7,717
Rent and Other Expenses <sup>b</sup>	1,831	2,226	2,869	2,842	2,771	2,299	2,275	2,375	2,510
Depreciation and Amortization	363	426	517	619	682	1,058	1,233	1,466	1,452
Operating Income	343	315	361	838	1,219	1,920	2,687	3,157	3,755
Net Interest Expense	17	3	(22)	(28)	(36)	480	975	1,094	1,061
Non-Recurring Expenses <sup>c</sup>	0	36	52	186	40	(6)	0	0	0
Pre-Tax Income	325	279	331	680	1,216	1,445	1,712	2,062	2,694
Income Taxes	146	126	158	333	499	660	729	798	1,032
Net Income	179	153	173	347	716	785	982	1,264	1,662
<i>Expense Adjustments:</i>									
Non-Recurring Items	0	36	52	(3)	40	(6)	0	0	0
Directors' Wages and Fees	42	40	83	78	64	74	91	96	102
Professional Fees	24	44	68	140	143	123	126	130	130
Terminated Operations	0	0	0	236	41	0	0	0	0
Contributions and Other Items	0	2	3	4	41	28	17	19	22
Adjusted Pre-Tax Income	391	400	537	1,135	1,544	1,665	1,946	2,307	2,948
Adjusted EBITDA <sup>d</sup>	771	830	1,032	1,726	2,190	3,202 <sup>e</sup>	4,152	4,867	5,460
EBITDA Margin	9.3%	8.3%	8.2%	12.7%	15.1%	19.8%	21.5%	22.8%	23.9%

<sup>a</sup>Projections include only current HDC properties, and include no assumptions regarding additional future acquisitions.

<sup>b</sup>Includes Rent, Insurance, Real Estate Taxes, and other Tax Expenses.

<sup>c</sup>Includes \$50,000 in claim settlement in 1996; \$189,000 in losses on a club termination in 1997; \$40,000 in purchase financing costs in 1998.

<sup>d</sup>Figure includes \$80,000 and \$528,000 of losses for the company's new Andover facility for 1999 and 2000, respectively.

<sup>e</sup>Does not reflect a full year of ownership of HDC's Lexington facility, which would result in an additional \$200,000 of EBITDA if annualized.



**EXHIBIT 2**  
**Balance Sheets for**  
**Health Development**  
**Corporation**

Source: Company reports.

		As of September 30, 1999
<b>Assets</b>		
Current assets		
Cash and Marketable Securities		997
Accounts Receivable		226
Inventory		21
Prepaid and Other Current Items		127
Total Current Assets		<u>1,371</u>
Property, Plant, and Equipment		
Property and Equipment		12,047
Construction in Progress		1,320
Total Property, Plant, and Equipment		<u>13,367</u>
Less: Accumulated Depreciation		<u>(3,349)</u>
Net Property and Equipment		10,018
Other Assets		716
Total Assets		<u>12,105</u>
<b>Liabilities and Shareholders' Equity</b>		
Current Liabilities		
Accounts Payable		135
Accrued Expenses		1,250
Prepaid Membership Fees		1,888
Current Portion of Long-Term Debt		210
Other Current Liabilities		39
Total Current Liabilities		<u>3,522</u>
Long-Term Debt		6,704
Other Long-Term Liabilities		682
Total Liabilities		<u>10,908</u>
Shareholders' Equity		
Common and Preferred Stock		9
Paid-In Capital		718
Retained Earnings		470
Total Shareholders' Equity		<u>1,197</u>
Total Liabilities and Equity		<u>12,105</u>

**EXHIBIT 3**  
**Value of HDC with**  
**Owned and Leased**  
**Lexington Real**  
**Estate**

Source: Casewriter estimates.

	Lexington Real Estate	
	Owning	Leasing
Adjusted Pre-Tax Income (excluding Lexington Real Estate)	2,612	2,612
Cost of Lexington Real Estate		
Interest	504	0
Depreciation	162	0
Lease Cost	0	925
Adjusted Pre-Tax Income	1,946	1,687
Interest (excluding Lexington)	471	471
Depreciation (excluding Lexington)	1,071	1,071
Lexington Real Estate Interest	504	0
Lexington Real Estate Depreciation	162	0
EBITDA	4,154	3,229
Multiple	5x	5x
Value of Operations	20,770	16,145
Plus:		
Excess Cash	0	750
Total Enterprise Value	20,770	16,895
Less:		
Corporate Debt (excluding Lexington)	1,917	1,917
Lexington Real Estate Debt	5,750	0
Equity Value	13,103	14,978

# Cost of Capital and Valuation

## Diversification, the Capital Asset Pricing Model, and the Cost of Equity Capital

### Risk as Variability in Return

The rate of return an investor receives from holding a stock for a given period of time is equal to the dividends received plus the capital gains in the period divided by the initial market value of the security:

$$R = \frac{\text{Dividends} + (\text{Ending price} - \text{Beginning price})}{\text{Beginning price}}$$

Alternatively, return can be viewed as the dividend yield plus the percentage capital appreciation:

$$R = \text{Dividend yield} + \text{Percentage capital appreciation}$$

Suppose an investor buys one common share of Du Pont for \$100 on January 1. Over the year, he or she receives \$4 in dividends and sells the share for \$108 on December 31. The return on this investment is 12%:

$$R_{\text{Du Pont}} = \frac{\$4 + (\$108 - \$100)}{\$100} = \frac{\$12}{\$100} = .12$$

or

$$R_{\text{Du Pont}} = 4\% \text{ dividend yield} + 8\% \text{ appreciation} = 12\%$$

If the ending price is \$85, the return is -11%.

The return on any security can be viewed as the cash the security holder receives (including liquidation at the end of the period) divided by the initial investment. Investing in a savings account that offers a 5% interest rate results in an annual return of 5%:

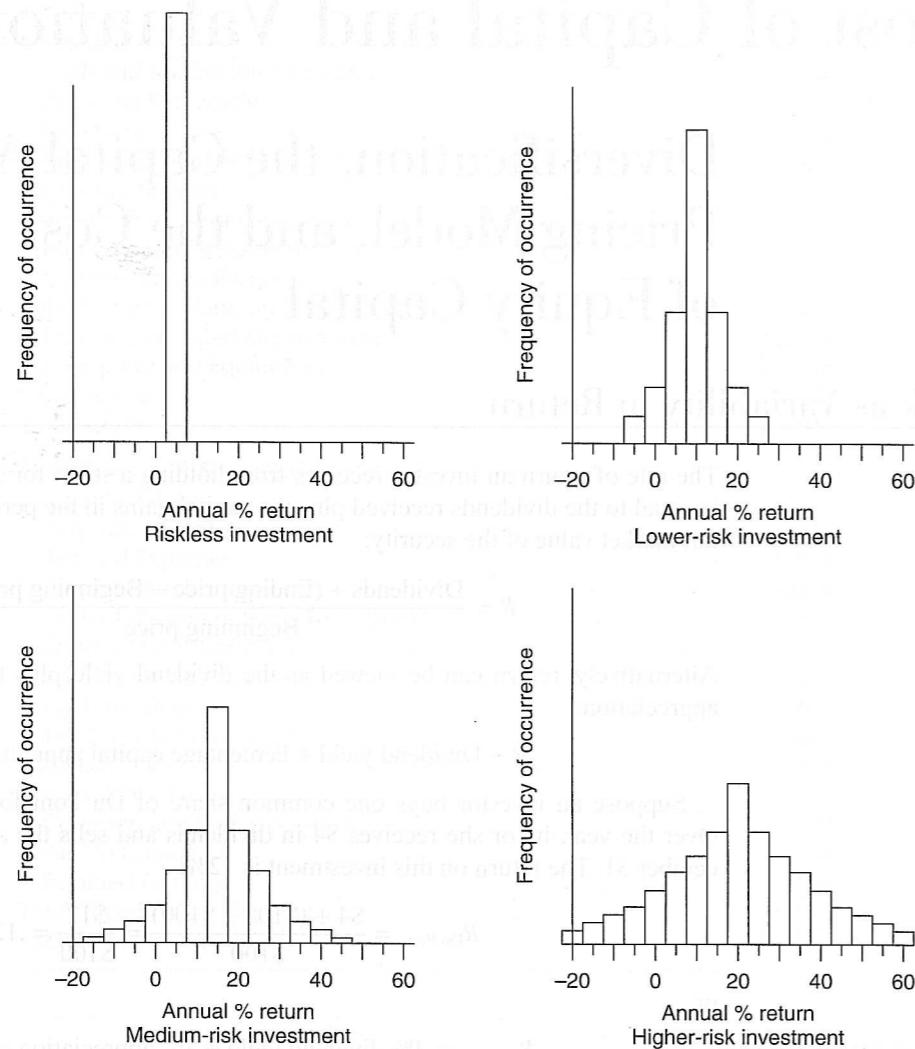
$$R_{\text{Savings account}} = \frac{\$5 + (\$100 - \$100)}{\$100} = .05$$

There is an important difference, however, between investing in a savings account and investing in common stocks. The investor knows before committing any funds that the savings account will earn a return of 5%. The actual return will not differ from the expected return of 5%. Thus, savings accounts are considered a safe, or risk-free, security.

On the other hand, an investor who expects a return of 12% on Du Pont's common shares may be disappointed or pleasantly surprised. The actual return on Du Pont may

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**FIGURE I**  
Risk as Variability  
in Return



be less than or greater than 12%, since (1) Du Pont may change its dividend and, more important, (2) the market price at the end of the period may differ from the anticipated price. Actual returns on common stock vary widely from year to year. An investor committing funds at the beginning of any period cannot be confident of receiving the average or expected return.

In general, an investment with actual returns that are not likely to depart from the expected or average return is considered a low-risk investment. One with quite volatile returns from year to year is said to be risky. Thus, risk can be viewed as variability in return (see Figure I).

### Risk Reduction through Diversification

Risky stocks can be combined in such a way that the combination of securities, called a portfolio of securities, is less risky than any one of the component individual stocks. Consider the example outlined in Table A. Suppose we have two firms located on an isolated Caribbean island. The chief industry on the island is tourism. Company A manufactures and sells suntan lotion. Its sales, earnings, and cash flows are highest during

**TABLE A**  
Example of Risk  
Reduction through  
Diversification

	Weather Conditions	Return on Stock $A = R_A$
Company A: Suntan lotion manufacturer	Sunny year	33%
	Normal year	12
	Rainy year	-9
	Weather Conditions	Return on Stock $B = R_B$
Company B: Disposable umbrella manufacturer	Sunny year	-9%
	Normal year	12
	Rainy year	33
Returns on a Portfolio ( $R_p$ ) Consisting of 50% invested in Stock A and 50% in Stock B: $R_p = .50 (R_A) + .50 (R_B)$		
	Weather Conditions	Return on the Portfolio = $R_p$
Portfolio containing A and B	Sunny year	$.50 (33\%) + .50 (-9\%) = 12\%$
	Normal year	$.50 (12\%) + .50 (12\%) = 12\%$
	Rainy year	$.50 (-9\%) + .50 (33\%) = 12\%$

sunny years. Thus, its stock does well in sunny years and poorly in rainy years. Company B manufactures and sells disposable umbrellas. Returns on its stock reflect its higher earnings in rainy years. In purchasing stock in either A or B, an investor is subject to considerable risk or variability in return. For instance, the investor's return on the stock of company B will vary from 33% to -9%, depending on weather conditions.

Suppose, however, that instead of buying only one security, the investor puts half of his or her funds in stock A and half in stock B. The possible returns on this portfolio of securities are calculated in Table A. If a recession occurs, a \$50 investment in stock A loses \$4.50, while \$50 invested in stock B returns \$16.50. The total return on \$100 invested in the portfolio is 12%:

$$\frac{-\$4.50 + \$16.50}{\$100}$$

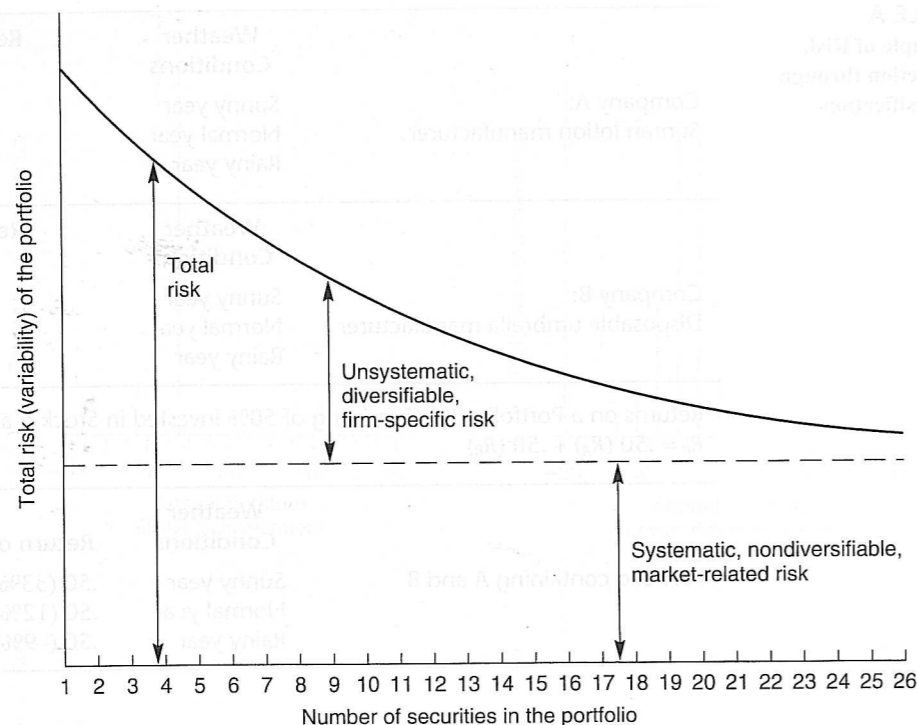
Note that the return on this portfolio is 12% regardless of which weather condition prevails.

Combining these two risky securities yields a portfolio with a certain return. Since we are sure of earning 12% on the portfolio, it is a very low-risk investment, comparable to a risk-free security such as a savings account. This example demonstrates risk reduction through diversification. By diversifying the investment over both firms, the investor creates a portfolio that is less risky than its two component stocks.

Total risk elimination is possible in this example because there is a perfect negative relation between the returns on stock A and B. In practice, such a perfect relation is very rare. Most firms' securities tend to move together, and therefore complete elimination of risk is not possible. However, as long as there is some lack of parallelism in the returns of securities, diversification will always reduce risk. Since companies' fortunes, and therefore their stocks' returns, do not move completely in parallel, investment in a diversified portfolio composed of many securities is less risky than investment in a few individual stocks.



**FIGURE II**  
Elimination of Unsystematic Risk through Diversification



## Systematic and Unsystematic Risk

Combining securities into portfolios reduces risk. When combined with other securities, a portion of a stock's variability in return is canceled by complementary variations in the returns of other securities. Some firms represented in the portfolio may experience unanticipated adverse conditions (e.g., a wildcat strike). However, this may well be offset by the unexpected good fortune of other firms in the portfolio. Nevertheless, since to some extent stock price (and returns) tend to move in concert, not all variability can be eliminated through diversification. Even investors holding diversified portfolios are exposed to the risk inherent in the overall performance of the stock market (for instance, the stock market crash of October 1987). Thus, it is convenient to divide a security's total risk into that portion that is peculiar to a specific firm and can be diversified away (called unsystematic risk) and that portion that is market-related and nondiversifiable (called systematic risk):

$$\text{Total risk} = \text{Unsystematic risk} + \text{Systematic risk}$$

(diversifiable risk,    (nondiversifiable risk,  
firm-specific)            market-related)

Figure II illustrates the reduction of total risk as securities are added to a portfolio. Unsystematic risk is virtually eliminated in portfolios of 30 or 40 securities drawn from industries that are not closely related. Because the remaining systematic risk is market related, diversified portfolios tend to move in tandem with the market. The popular market indices (the Dow Jones Industrial Average, the S&P 500, and the New York Stock Exchange Index, for instance) are themselves diversified portfolios and tend to move in parallel. Thus, there is a close correspondence between swings in the returns of any diversified portfolio and in the returns on market indices such as the Dow. Examples of systematic and unsystematic risk factors are listed in Table B.

**TABLE B**  
Systematic and Unsystematic Risk Factors

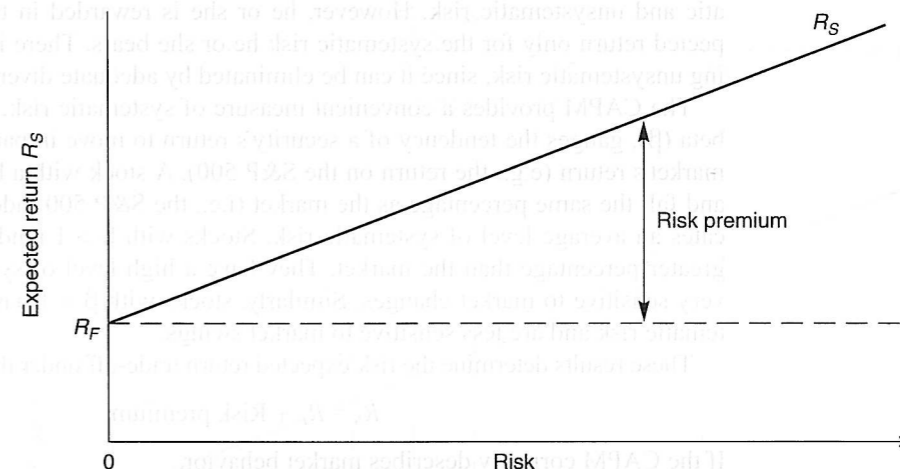
**Examples of Unsystematic Risk Factors**

- A firm's technical wizard is killed in an auto accident.
- A wildcat strike is declared.
- A lower-cost foreign competitor unexpectedly enters a firm's product market.
- Oil is discovered on a firm's property.

**Examples of Systematic Risk Factors**

- Oil-producing countries institute a boycott.
- Congress votes for a massive tax cut.
- The Federal Reserve follows a restrictive monetary policy.
- There is a precipitous rise in long-term interest rates.

**FIGURE III**  
Market's Risk/Expected Return Trade-Off in Equilibrium



## Risk, Return, and Market Equilibrium

Investors are risk-averse and must be compensated for taking risk. Thus, risky securities are priced by the market to yield a higher expected return than low-risk securities. This extra reward, called the risk premium, is necessary to induce risk-averse investors to hold risky securities. In a market dominated by risk-averse investors, there must be a positive relation between risk and expected return to achieve equilibrium. The expected return on a risk-free security (such as a Treasury bill) is the risk-free rate. The expected return on risky securities can be thought of as this risk-free rate plus a premium for risk:

$$R_S = R_F + \text{Risk premium}$$

The market's risk/return trade-off is illustrated in Figure III.

## The Capital Asset Pricing Model (CAPM)

The capital asset pricing model (CAPM) represents an idealized view of how the market prices securities and determines expected returns. It provides a measure of the risk premium and a method for estimating the market's risk/expected return curve.

In the CAPM, investors hold diversified portfolios to minimize risk. Because they hold portfolios consisting of many securities, events peculiar to specific firms (i.e., unsystematic risk) have a negligible impact on their overall return. Only a small fraction of an investor's funds are invested in each security. Furthermore, variations in returns

from one security will, as likely as not, be canceled by complementary variations in the returns of other securities. Therefore, the only risk to which investors are sensitive is systematic, or market-related, risk.

Since unsystematic risk can be eliminated simply by holding large portfolios, investors are not compensated for bearing unsystematic risk. Investors holding diversified portfolios are exposed only to systematic, market-related risk. Therefore, the relevant risk in the market's risk/expected return trade-off is systematic risk, not total risk. The investor is rewarded with a higher expected return for bearing systematic, market-related risks. Only systematic risk is relevant in determining the premiums for bearing risk. Thus, the model predicts that a security's return is related to that portion of risk that cannot be eliminated by portfolio combination.

An individual investor who invests in only one stock is still exposed to both systematic and unsystematic risk. However, he or she is rewarded in terms of a higher expected return only for the systematic risk he or she bears. There is no reward for bearing unsystematic risk, since it can be eliminated by adequate diversification.

The CAPM provides a convenient measure of systematic risk. This measure, called beta ( $\beta$ ), gauges the tendency of a security's return to move in parallel with the overall market's return (e.g., the return on the S&P 500). A stock with a beta of 1 tends to rise and fall the same percentage as the market (i.e., the S&P 500 index). Thus,  $\beta = 1$  indicates an average level of systematic risk. Stocks with  $\beta > 1$  tend to rise and fall by a greater percentage than the market. They have a high level of systematic risk and are very sensitive to market changes. Similarly, stocks with  $\beta < 1$  have a low level of systematic risk and are less sensitive to market swings.

These results determine the risk/expected return trade-off under the CAPM. In general,

$$R_S = R_F + \text{Risk premium.}$$

If the CAPM correctly describes market behavior,

$$R_S = R_F + \beta_S(R_M - R_F)$$

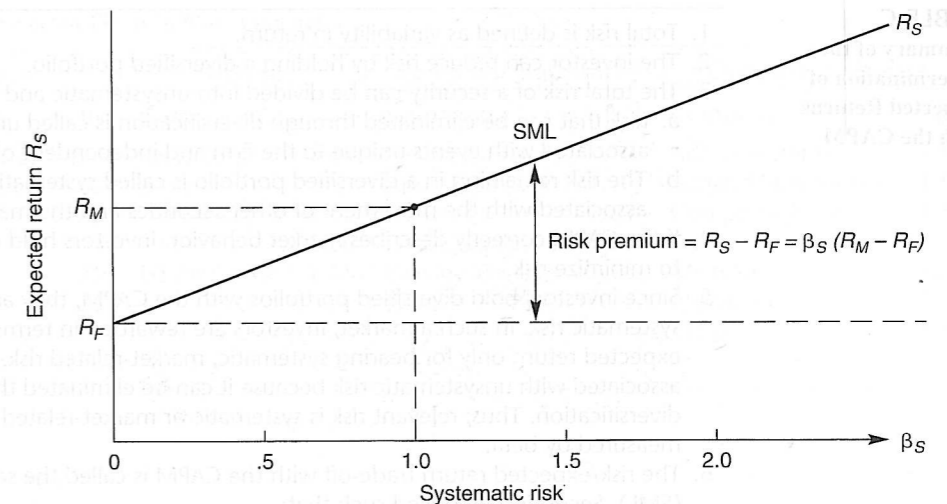
The expected return on a security ( $R_S$ ) is equal to the risk-free rate plus a risk premium. With the CAPM, the risk premium is  $\beta$  multiplied by the return on the market ( $R_M$ ) minus the risk-free rate. Alternatively, the relation can be expressed in terms of the risk premium (i.e., the return over and above the risk-free rate):

$$\begin{aligned} R_S - R_F &= \beta_S(R_M - R_F) \\ &= \text{Risk premium for security } S \end{aligned}$$

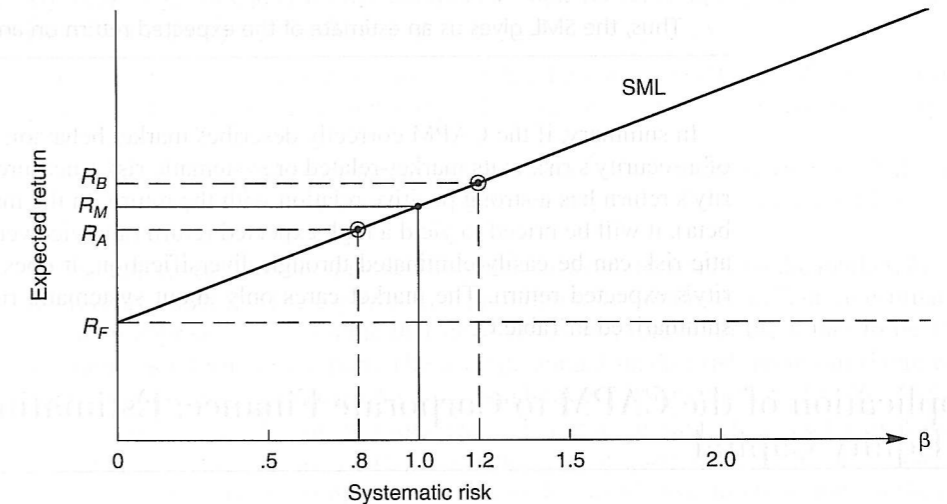
Thus, the risk premium on a stock (or portfolio or any security) varies directly with the level of systematic risk,  $\beta$ . This risk/expected return trade-off with the CAPM is called the security market line (SML) and is illustrated graphically in Figure IV.

One perhaps counterintuitive aspect of the determination of expected returns with the CAPM can be illustrated with a simple example. Consider a firm engaged in oil exploration. The return (denoted  $R_A$ ) to the shareholders in such a firm is very variable. If oil is found, the return is very high. If no oil is discovered, shareholders lose their entire investment and the return is negative. The stock's total risk level is very high. However, much of the variability in return is generated by factors independent of the returns on other stocks (i.e., the return on the market). This risk is unique to the firm and is therefore unsystematic risk. Since the stock's return is not closely related to the return on the market as a whole, it contributes little to the variability of a diversified portfolio. Its unsystematic risk can be diversified away by holding large portfolios. Nevertheless, the costs of exploration and the price of oil are related to the general level of economic activity. As a result, the stock does contain some systematic, market-related risk. Most of its total risk is unsystematic risk, however, associated with the chances of finding oil.

**FIGURE IV**  
Security Market Line:  
The Risk/Expected  
Return Trade-Off  
with the CAPM



**FIGURE V**  
Example of  
Determining  
Expected Returns  
with the CAPM



Although the firm's stock is very risky in terms of total risk, it has a low level of systematic risk. Its beta might be .8. The market will therefore price this stock to yield a relatively low expected return. From the viewpoint of investors holding large portfolios, it is a low-risk security. Its expected return is denoted  $R_A$  in Figure V. Note that the return on this stock ( $R_A$ ) is less than the return on the average stock in the market ( $R_M$ ).

In contrast, consider a firm that manufactures computers. As a large stable firm, its total variability in return might be less than that of the oil exploration firm. However, its sales, earnings, and therefore stock returns are closely related to changes in overall economic activity. The return on its stock is very sensitive to changes in the return on the market as a whole. Therefore, its risk cannot be eliminated by diversification. When combined with other securities in a diversified portfolio, changes in its return tend to reinforce swings in the returns of the other securities. It has a relatively high level of systematic risk and a beta of perhaps 1.2. Viewed as an individual security, it appears less risky (in terms of total risk) than the oil exploration firm. Nevertheless, because of its high level of nondiversifiable risk, the market considers it the riskier security. Therefore, it is priced to yield a high expected return. Its return is labeled  $R_B$  in Figure V. Such counterintuitive examples are rare, however. Most firms with high total risk also have high betas (and vice versa).



**TABLE C**  
Summary of the Determination of Expected Returns with the CAPM

1. Total risk is defined as variability in return.
2. The investor can reduce risk by holding a diversified portfolio.
3. The total risk of a security can be divided into unsystematic and systematic risk.
  - a. Risk that can be eliminated through diversification is called unsystematic risk. It is associated with events unique to the firm and independent of other firms.
  - b. The risk remaining in a diversified portfolio is called systematic risk. It is associated with the movement of other securities and the market as a whole.
4. If the CAPM correctly describes market behavior, investors hold diversified portfolios to minimize risk.
5. Since investors hold diversified portfolios with the CAPM, they are exposed only to systematic risk. In such a market, investors are rewarded in terms of a higher expected return only for bearing systematic, market-related risk. There is no reward associated with unsystematic risk because it can be eliminated through diversification. Thus, relevant risk is systematic or market-related risk, and it is measured by beta.
6. The risk/expected return trade-off with the CAPM is called the security market line (SML). Securities are priced such that:

$$R_S = R_F + \text{Risk premium, or } R_S = R_F + \beta_S(R_M - R_F)$$

Thus, the SML gives us an estimate of the expected return on any security,  $R_S$ .

In summary, if the CAPM correctly describes market behavior, the relevant measure of a security's risk is its market-related or systematic risk (measured by beta). If a security's return has a strong positive relation with the return on the market (i.e., has a high beta), it will be priced to yield a high expected return (and vice versa). Since unsystematic risk can be easily eliminated through diversification, it does not increase a security's expected return. The market cares only about systematic risk. These results are summarized in Table C.

## Application of the CAPM to Corporate Finance: Estimating the Cost of Equity Capital

The CAPM provides insight into the market's pricing of securities and the determination of expected returns. It has clear applications in investment management and in corporate finance. The cost of equity capital,  $k_E$ , is the expected (or required) return on a firm's common stock. The firm must be expected to earn  $k_E$  on the equity-financed portion of investments to keep the price of its stock from falling. If the firm cannot expect to earn at least  $k_E$ , funds should be returned to the shareholders, who can earn  $k_E$  on marketable securities of the same risk level. Since  $k_E$  involves the market's expectations, it is difficult to measure. The CAPM can be used by financial managers to obtain an estimate of  $k_E$ .

The CAPM provides a conceptual framework for determining the expected return on common stocks, and it can be used to estimate firms' cost of capital. If the CAPM correctly describes market behavior, the market's expected return on a common stock is given by the security market line (SML):

$$R_S = R_F + \beta_S(R_M - R_F)$$

The expected return on a firm's stock is, by definition, its cost of equity capital. Therefore, in terms of cost of capital, the SML is

$$k_E = R_F + \beta_S(k_M - R_F)$$

**TABLE D** Betas for Selected Firms in Four Industries

Electric Utilities		Airlines		Computer Hardware		Computer Software	
Company	$\beta$	Company	$\beta$	Company	$\beta$	Company	$\beta$
American Electric Power	.75	AMR Corp.	1.25	AST Research	1.50	Adobe Systems	1.80
Baltimore Gas & Electric	.80	Delta	1.20	Apple Comp.	1.10	Borland International	1.60
Consolidated Edison	.75	Northwest	1.75	Compaq	1.25	Computer Assoc.	1.55
Duke Power	.75	UAL	1.60	Digital Equip.	1.05	Intuit	1.85
FPL Group	.75	US Air Group	1.55	Hewlett-Packard	1.10	Microsoft	1.20
Niagara Mohawk	.80			IBM	.90	Novell Inc.	1.40
Ohio Edison	.80					Oracle	1.45
Pacific Gas & Electric	.75						

where

$k_E = R_S$  = Firm's cost of equity capital

$k_M = R_M$  = Cost of equity for the market as a whole (or for an average firm in the market)

$\beta_S$  = Beta of the firm's stock

Thus, to estimate  $k_E$  we need estimates of  $R_F$ , the risk-free rate;  $k_M = R_M$ , the expected return on the market as a whole; and  $\beta_S$ , the level of systematic risk associated with the firm's stock.

$R_F$  can be estimated as the average or expected rate of return on Treasury bills in the future. In recent years, this rate has ranged between 3% and 9%. A reasonable estimate might be 6% per year.

The market risk premium is the difference between the return on the market,  $k_M$ , and the risk-free rate,  $R_F$ . The expected risk premium in the future is difficult to estimate. A common approach is to assume that investors expect returns in the future to be about the same as returns in the past. The average annual market risk premium (large company equities versus long-term Treasury bonds) was 7.4% in the period 1926–1995.<sup>1</sup>

The stock's beta,  $\beta_S$ , can be estimated by linear regression.<sup>2</sup> Betas are also available from many brokerage firms and investment advisory services. Furthermore, one can get an intuitive estimate simply by observing the stock's reaction to swings in the market as a whole. Finally, a rough guess at beta can be made by noting the tendency of the firm's earnings and cash flows to move in parallel with the earnings and cash flows of other firms in the economy.

Betas for selected firms in four industries are presented in Table D. Despite relatively high degrees of operating and financial leverage, electric utilities have very stable earnings streams. Swings in the earnings and stock returns of utilities are modest relative to swings in the earnings and returns of most firms in the economy. Therefore, electric utilities have a low level of systematic risk and low betas.

At the other extreme, airline revenues are closely tied to passenger miles, which are in turn very sensitive to changes in economic activity. This basic variability in revenues is amplified by high operating and financial leverage. The result is earnings and returns that show wide variations relative to swings in the earnings and returns of most firms. Thus, airlines have high betas.

<sup>1</sup>Stocks, Bonds, Bills, and Inflation—1996 Yearbook: Market Results for 1926–1995 (Chicago, Ibbotson Associates, 1996).

<sup>2</sup>The estimated regression equation is  $R_S - R_F = \alpha + \beta_S(R_M - R_F) + e$ . Given past values of  $R_F$ ,  $R_S$ , and  $R_M$ , the regression yields estimates of alpha.  $\alpha$  (which should be zero), and the stock's beta.  $\beta_S$ .

TABLE E Examples of Estimating the Cost of Equity Capital Using the CAPM

Assumptions	SML			
$R_E = .09$ = risk-free rate	$k_E = R_F + \beta (k_M - R_F)$			
$R_M - R_F = .08$	$= .09 + \beta(.08)$			
Consolidated Edison	Delta Airlines	Digital Equipment	Adobe	
$\beta_{\text{Consolidated}} = .75$	$\beta_{\text{Delta}} = 1.20$	$\beta_{\text{DEC}} = 1.05$	$\beta_{\text{Adobe}} = 1.80$	
$k_E = .06 + .75(.07)$	$k_E = .06 + 1.20(.07)$	$k_E = .06 + 1.05(.07)$	$k_E = .06 + 1.80(.07)$	
$= .11$	$= .14$	$= .13$	$= .19$	

Estimates of the cost of equity capital for four firms are presented in Table E. Plugging the assumed values of  $R_F$ ,  $k_M$ , and  $\beta$  into the SML generates estimates of  $k_E$ . As expected, the low-risk utility has an estimated cost of equity below that of the other three firms.

The assumed value of  $k_M$  represents a major potential source of error in these estimates. High and low estimates of  $k_M$  can be used to generate a reasonable range of estimates of  $k_E$ . The estimation of  $\beta$  also introduces error into the estimate of  $k_E$ .

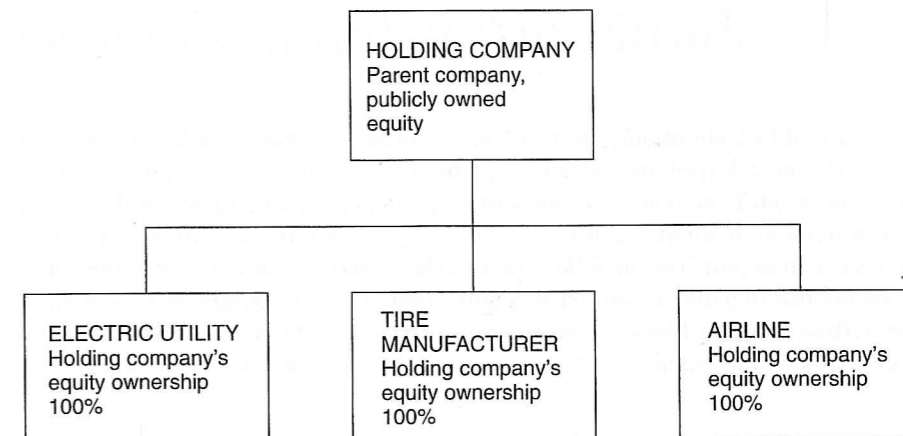
## The CAPM and Risk-Adjusted Discount Rates

The CAPM provides a conceptual framework for determining the  $k_E$  appropriate for a subsidiary's capital budgeting decisions. Assume that the holding company described in Figure VI has no debt outstanding. The parent company owns all the equity in its subsidiaries, and the holding company's stock is publicly traded.<sup>3</sup> Such a firm can be viewed as a portfolio of assets. Its stock's beta is a weighted average of the betas associated with the riskiness of each subsidiary industry. Suppose that the parent company's beta is 1. However, the appropriate cost of equity capital for capital budgeting purposes is not the  $k_E$  derived from the beta of the holding company's stock. The cost of equity capital used to evaluate investment proposals for a subsidiary should reflect the risk associated with the industry in which that subsidiary operates. Thus, while the holding company's beta of 1 yields a  $k_E$  of 13%, investments in the utility subsidiary should be evaluated using a lower  $k_E$ , since the utility industry is less risky than the other subsidiary industries. Therefore, the market's expected (or required) return is lower for investments in the utility subsidiary. Since the airline industry is risky, a higher  $k_E$  should be used in capital budgeting for an airline subsidiary.

Application of the firm's overall  $k_E$  to the individual subsidiaries would result in poor decisions. Good projects in the utility subsidiary would be rejected, while poor projects in the airline subsidiary would be accepted. When the cost of equity capital used in a subsidiary's capital budgeting decisions reflects the risk associated with that subsidiary's line of business, this ensures that project returns are measured against the returns shareholders would expect to receive on alternative investments of corresponding risk.

How can we estimate the beta appropriate for a subsidiary? An obvious approach is to use the beta on similar independent firms operating in the same industry. The resulting estimates of  $k_E$  reflect the risk level of the industry and are therefore appropriate

FIGURE VI  
Corporate Structure  
of a Holding  
Company with Three  
Subsidiaries



for investment decisions concerning a subsidiary operating in the same industry. If there are no independent firms in the industry, an intuitive estimate of beta can be made. This estimate would reflect the degree to which the subsidiary's earnings and cash flows tend to move in concert with other firm's earnings and cash flows.

## Conclusion and Caveats

The CAPM is widely applied in investment management and corporate financial management. Although some of the model's assumptions are clearly unrealistic, empirical tests demonstrate that there is a strong relation between returns and risk as measured by beta. However, the nature and stability of the relations predicted by the SML are not fully supported by these tests. Furthermore, application of the CAPM requires estimating  $k_M - R_F$ , the market risk premium, and  $R_F$ , the risk-free rate. The estimates of beta are also subject to error. Thus, the CAPM should not be relied upon as the sole answer to cost-of-capital determination.

Nevertheless, the model has much to say about the way returns are determined in the securities market. The cost of equity capital is inherently difficult to measure. The shortcomings of the CAPM appear less severe than those of alternative methods of estimating the cost of equity capital (for instance, the dividend growth model). Though imperfect, the CAPM represents an important approach to this difficult task. Using the CAPM in conjunction with more traditional approaches, corporate financial managers can develop realistic, useful estimates of the cost of equity capital.

<sup>3</sup>The cost of equity is appropriate to evaluate capital investment only when the firm is all equity-financed. The note "Leveraged Betas and the Cost of Equity" explains how to estimate the cost of capital for firms that are financed with debt.