# Euroland Foods S.A.

In early January 2001, the senior management committee of Euroland Foods was to meet to draw up the firm's capital budget for the new year. Up for consideration were 11 major projects that totaled more than (euro) EUR316 million. Unfortunately, the board of directors had imposed a spending limit on capital projects of only EUR120 million; even so, investment at that rate would represent a major increase in the firm's current asset base of EUR965 million. Thus, the challenge for the senior managers of Euroland Foods was to allocate funds among a range of compelling projects: new-product introduction, acquisition, market expansion, efficiency improvements, preventive maintenance, safety, and pollution control.

#### The Company

Euroland Foods, headquartered in Brussels, Belgium, was a multinational producer of high-quality ice cream, yogurt, bottled water, and fruit juices. Its products were sold throughout Scandinavia, Britain, Belgium, the Netherlands, Luxembourg, western Germany, and northern France. (See Exhibit 1 for a map of the company's marketing region.)

The company was founded in 1924 by Theo Verdin, a Belgian farmer, as an offshoot of his dairy business. Through his keen attention to product development and shrewd marketing, the business grew steadily over the years. The company went public in 1979, and, by 1993, was listed for trading on the London, Frankfurt, and Brussels exchanges. In 2000, Euroland Foods had sales of almost EUR1.6 billion.

Ice cream accounted for 60% of the company's revenue; yogurt, which was introduced in 1982, contributed about 20%. The remaining 20% of sales was divided equally between bottled water and fruit juices. Euroland Foods's flagship brand name was "Rolly," which was represented by a fat dancing bear in farmer's clothing. Ice cream, the company's leading product, had a loyal base of customers who sought out its high-butterfat content, large chunks of chocolate, fruit, nuts, and wide range of original flavors.

This case was prepared by Casey Opitz and Robert F. Bruner, Dean and Charles C. Abbott Professor of Business Administration, and draws certain elements from an antecedent case by them. All names are fictitious. The financial support of the Batten Institute is gratefully acknowledged. It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Copyright © 2001 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. To order copies, send an e-mail to sales@dardenbusinesspublishing.com. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation.

Euroland Foods sales had been static since 1998 (see **Exhibit 2**), which management attributed to low population growth in northern Europe and market saturation in some areas. Outside observers, however, faulted recent failures in new-product introductions. Most members of management wanted to expand the company's market presence and introduce more new products to boost sales. Those managers hoped that increased market presence and sales would improve the company's market value. The company's stock was currently at 14 times earnings, just below book value. This price/earnings ratio was below the trading multiples of comparable companies, and it gave little value to the company's brands.

#### Resource Allocation

The capital budget at Euroland Foods was prepared annually by a committee of senior managers, who then presented it for approval to the board of directors. The committee consisted of five managing directors, the président directeur-général (PDG), and the finance director. Typically, the PDG solicited investment proposals from the managing directors. The proposals included a brief project description, a financial analysis, and a discussion of strategic or other qualitative considerations.

As a matter of policy, investment proposals at Euroland Foods were subject to two financial tests: payback and internal rate of return (IRR). The tests, or hurdles, had been established in 1999 by the management committee and varied according to the type of project as shown in **Table 1.** 

**TABLE 1** | Project Hurdles

Type of Project	Minimum Acceptable IRR	Maximum Acceptable Payback Years
New product or new markets	osali sa 12% i bishawil a	6 years
2. Product or market extension	10% IIII II aasti ali 10%	at which will be by 5 years
3. Efficiency improvements	orbitation will be 8% and remained	4 years
4. Safety or environmental	No test	No test

In January 2001, the estimated weighted-average cost of capital (WACC) for Euroland Foods was 10.6%.

In describing the capital-budgeting process, the finance director, Trudi Lauf, said:

We use the sliding scale of IRR tests as a way of recognizing differences in risk among the various types of projects. Where the company takes more risk, we should earn more return. The payback test signals that we are not prepared to wait for long to achieve that return.

#### Ownership and the Sentiment of Creditors and Investors

Euroland Foods's 12-member board of directors included three members of the Verdin family, four members of management, and five outside directors who were prominent managers or public figures in northern Europe. Members of the Verdin family combined owned 20% of Euroland Foods's shares outstanding, and company executives

combined owned 10% of the shares. Venus Asset Management, a mutual-fund management company in London, held 12%. Banque du Bruges et des Pays Bas held 9% and had one representative on the board of directors. The remaining 49% of the firm's shares were widely held. The firm's shares traded in Brussels and Frankfurt, Germany.

At a debt-to-equity ratio of 125%, Euroland Foods was leveraged much more highly than its peers in the European consumer-foods industry. Management had relied on debt financing significantly in the past few years to sustain the firm's capital spending and dividends during a period of price wars initiated by Euroland. Now, with the price wars finished, Euroland's bankers (led by Banque du Bruges) strongly urged an aggressive program of debt reduction. In any event, they were not prepared to finance increases in leverage beyond the current level. The president of Banque du Bruges had remarked at a recent board meeting:

Restoring some strength to the right-hand side of the balance sheet should now be a first priority. Any expansion of assets should be financed from the cash flow after debt amortization until the debt ratio returns to a more prudent level. If there are crucial investments that cannot be funded this way, then we should cut the dividend!

At a price-to-earnings ratio of 14 times, shares of Euroland Foods common stock were priced below the average multiples of peer companies and the average multiples of all companies on the exchanges where Euroland Foods was traded. This was attributable to the recent price wars, which had suppressed the company's profitability, and to the well-known recent failure of the company to seize significant market share with a new product line of flavored mineral water. Since January 2000, all the major securities houses had been issuing "sell" recommendations to investors in Euroland Foods shares. Venus Asset Management had quietly accumulated shares during this period, however, in the expectation of a turnaround in the firm's performance. At the most recent board meeting, the senior managing director of Venus gave a presentation, in which he said:

Cutting the dividend is unthinkable, as it would signal a lack of faith in your own future. Selling new shares of stock at this depressed price level is also unthinkable, as it would impose unacceptable dilution on your current shareholders. Your equity investors expect an improvement in performance. If that improvement is not forthcoming, or worse, if investors' hopes are dashed, your shares might fall into the hands of raiders like Carlo de Benedetti or the Flick brothers.<sup>1</sup>

At the conclusion of the most recent meeting of the directors, the board voted unanimously to limit capital spending to EUR120 million in 2001.

### Members of the Senior Management Committee

Seven senior managers of Euroland Foods would prepare the capital budget. For consideration, each project had to be sponsored by one of the managers present. Usually the decision process included a period of discussion followed by a vote on

<sup>&</sup>lt;sup>1</sup>De Benedetti of Milan and the Flick brothers of Munich were leaders of prominent hostile-takeover attempts in recent years.

two to four alternative capital budgets. The various executives were well known to each other:

- Wilhelmina Verdin (Belgian), PDG, age 57. Granddaughter of the founder and spokesperson on the board of directors for the Verdin family's interests. Worked for the company her entire career, with significant experience in brand management. Elected "European Marketer of the Year" in 1982 for successfully introducing low-fat yogurt and ice cream, the first major roll-out of this type of product. Eager to position the company for long-term growth but cautious in the wake of recent difficulties.
- Trudi Lauf (Swiss), finance director, age 51. Hired from Nestlé in 1995 to modernize financial controls and systems. Had been a vocal proponent of reducing leverage on the balance sheet. Also, voiced the concerns and frustrations of stockholders.
- Heinz Klink (German), managing director for Distribution, age 49. Oversaw the transportation, warehousing, and order-fulfillment activities in the company. Spoilage, transport costs, stock-outs, and control systems were perennial challenges.
- Maarten Leyden (Dutch), managing director for Production and Purchasing, age 59. Managed production operations at the company's 14 plants. Engineer by training. Tough negotiator, especially with unions and suppliers. A fanatic about production-cost control. Had voiced doubts about the sincerity of creditors' and investors' commitment to the firm.
- Marco Ponti (Italian), managing director of Sales, age 45. Oversaw the field sales force of 250 representatives and planned changes in geographical sales coverage. The most vocal proponent of rapid expansion on the senior-management committee. Saw several opportunities for ways to improve geographical positioning. Hired from Unilever in 1993 to revitalize the sales organization, which he successfully accomplished.
- Fabienne Morin (French), managing director for Marketing, age 41. Responsible for marketing research, new-product development, advertising, and in general, brand management. The primary advocate of the recent price war, which, although financially difficult, realized solid gains in market share. Perceived a "window of opportunity" for product and market expansion and tended to support growth-oriented projects.
- Nigel Humbolt (British), managing director for Strategic Planning, age 47. Hired two years previously from a well-known consulting firm to set up a strategic planning staff for Euroland Foods. Known for asking difficult and challenging questions about Euroland's core business, its maturity, and profitability. Supported initiatives aimed at growth and market share. Had presented the most aggressive proposals in 2000, none of which were accepted. Becoming frustrated with what he perceived to be his lack of influence in the organization.

#### The Expenditure Proposals

The forthcoming meeting would entertain the following proposals in Table 2:

TABLE 2 | Project Proposals

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1. Replacement and expansion of the truck fleet	33 11000000	Klink, distribution
2. A new plant	45	Leyden, production
3. Expansion of a plant	15	Leyden, production
4. Development and roll-out of snack foods	27	Morin, marketing
5. Plant automation and conveyor systems	21	Leyden, production
6. Effluent-water treatment at four plants	6	Leyden, production
7. Market expansion southward	30	Ponti, sales
8. Market expansion eastward	30	Ponti, sales
9. Development and introduction of new		
artificially sweetened yogurt and ice cream	27	Morin, marketing
Networked, computer-based inventory- control system for warehouses and field		
representatives	22.5	Klink, distribution
Acquisition of a leading schnapps brand and associated facilities	60	Humbolt, strategic planning

1. Replacement and expansion of the truck fleet: Heinz Klink proposed to purchase 100 new refrigerated tractor-trailer trucks, 50 each in 2001 and 2002. By doing so, the company could sell 60 old, fully depreciated trucks over the two years for a total of EUR4.05 million. The purchase would expand the fleet by 40 trucks within two years. Each of the new trailers would be larger than the old trailers and afforded a 15% increase in cubic meters of goods hauled on each trip. The new tractors would also be more fuel- and maintenance-efficient. The increase in the number of trucks would permit more flexible scheduling and more efficient routing and servicing of the fleet than at present and would cut delivery times and, therefore, possibly inventories. It would also allow more frequent deliveries to the company's major markets, which would reduce the loss of sales caused by stock-outs. Finally, expanding the fleet would support geographical expansion over the long term.

As shown in **Exhibit 3**, the total net investment in trucks of EUR30 million and the increase in working capital to support added maintenance, fuel, payroll, and inventories of EUR3 million was expected to yield total cost savings and added sales potential of EUR11.6 million over the next seven years. The resulting IRR was estimated to be 7.8%, marginally below the minimum 8% required return on efficiency projects. Some of the managers wondered if this project would be more properly classified as "efficiency" than "expansion."

2. A new plant: Maarten Leyden noted that Euroland Foods yogurt and icecream sales in the southeastern region of the company's market were about to

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exceed the capacity of its Melun, France, manufacturing and packaging plant. At present, some of the demand was being met by shipments from the company's newest, most efficient facility, located in Strasbourg, France. Shipping costs over that distance were high, however, and some sales were undoubtedly being lost when the marketing effort could not be supported by delivery. Leyden proposed that a new manufacturing and packaging plant be built in Dijon, France, just at the current southern edge of the Euroland Foods marketing region, to take the burden off the Melun and Strasbourg plants.

The cost of that plant would be EUR37.5 million and would entail EUR7.5 million for working capital. The EUR21 million worth of equipment would be amortized over seven years, and the plant over ten years. Through an increase in sales and depreciation and the decrease in delivery costs, the plant was expected to yield after-tax cash flows totaling EUR35.6 million and an IRR of 11.3% over the next 10 years. This project would be classified as a market extension.

3. Expansion of a plant: In addition to the need for greater production capacity in Euroland Foods's southeastern region, its Nuremberg, Germany, plant had reached full capacity. This situation made the scheduling of routine equipment maintenance difficult, which, in turn, created production scheduling and deadline problems. This plant was one of two highly automated facilities that produced the Euroland Foods's entire line of bottled water, mineral water, and fruit juices. The Nuremberg plant supplied central and western Europe. (The other plant, near Copenhagen, Denmark, supplied the Euroland Foods northern European markets.)

The Nuremberg plant capacity could be expanded by 20% for EUR15 million. The equipment (EUR10.5 million) would be depreciated over seven years, and the plant over ten years. The increased capacity was expected to result in additional production of up to EUR2.25 million a year, yielding an IRR of 11.2%. This project would be classified as a market extension.

4. Development and roll-out of snack foods: Fabienne Morin suggested that the company use the excess capacity at its Antwerp spice- and nut-processing facility to produce a line of dried fruits to be test-marketed in Belgium, Britain, and the Netherlands. She noted the strength of the Rolly brand in those countries and the success of other food and beverage companies that had expanded into snack food production. She argued that the Euroland Foods's reputation for wholesome, quality products would be enhanced by a line of dried fruits and, further, that name association with the new product would probably even lead to increased sales of the company's other products among health-conscious consumers.

Equipment and working-capital investments were expected to total EUR22.5 million and EUR4.5 million, respectively, for this project. The equipment would be depreciated over seven years. Assuming the test market was successful, cash flows from the project would be able to support further plant expansions in other strategic locations. The IRR was expected to be 13.4%, slightly above the required return of 12% for new-product projects.

5. Plant automation and conveyer systems: Maarten Leyden also requested EUR21 million to increase automation of the production lines at six of the company's older plants. The result would be improved throughput speed and reduced accidents,

spillage, and production tie-ups. The last two plants the company had built included conveyer systems that eliminated the need for any heavy lifting by employees. The systems reduced the chance of injury by employees; at the six older plants, the company had sustained an average of 223 missed-worker days per year per plant in the last two years because of muscle injuries sustained in heavy lifting. At an average hourly total compensation rate of EUR14.00 an hour, more than EUR150,000 a year were thus lost, and the possibility always existed of more serious injuries and lawsuits. Overall, cost savings and depreciation totaling EUR4.13 million a year for the project were expected to yield an IRR of 8.7%. This project would be classed in the efficiency category.

6. Effluent-water treatment at four plants: Euroland Foods preprocessed a variety of fresh fruits at its Melun and Strasbourg plants. One of the first stages of processing involved cleaning the fruit to remove dirt and pesticides. The dirty water was simply sent down the drain and into the Seine or Rhine Rivers. Recent European Community directives called for any wastewater containing even slight traces of poisonous chemicals to be treated at the sources, and gave companies four years to comply. As an environmentally oriented project, this proposal fell outside the normal financial tests of project attractiveness. Leyden noted, however, that the water-treatment equipment could be purchased today for EUR6 million; he speculated that the same equipment would cost EUR15 million in four years when immediate conversion became mandatory. In the intervening time, the company would run the risks that European Community regulators would shorten the compliance time or that the company's pollution record would become public and impair the image of the company in the eyes of the consumer. This project would be classed in the environmental category.

7 and 8. Market expansions southward and eastward: Marco Ponti recommended that the company expand its market southward to include southern France, Switzerland, Italy, and Spain, and/or eastward to include eastern Germany, Poland, Czechoslovakia, and Austria. Ponti believed the time was right to expand sales of ice cream, and perhaps yogurt, geographically. In theory, the company could sustain expansions in both directions simultaneously, but practically, Ponti doubted that the sales and distribution organizations could sustain both expansions at once.

Each alternative geographical expansion had its benefits and risks. If the company expanded eastward, it could reach a large population with a great appetite for frozen dairy products, but it would also face more competition from local and regional ice cream manufacturers. Moreover, consumers in eastern Germany, Poland, and Czechoslovakia did not have the purchasing power that consumers to the south did. The eastward expansion would have to be supplied from plants in Nuremberg, Strasbourg, and Hamburg.

Looking southward, the tables were turned: more purchasing power and less competition but also a smaller consumer appetite for ice cream and yogurt. A southward expansion would require building consumer demand for premium-quality yogurt and ice cream. If neither of the plant proposals (proposals 2 and 3) was accepted, then the southward expansion would need to be supplied from plants in Melun, Strasbourg, and Rouen.

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The initial cost of either proposal was EUR30 million of working capital. The bulk of this project's costs was expected to involve the financing of distributorships, but over the 10-year forecast period, the distributors would gradually take over the burden of carrying receivables and inventory. Both expansion proposals assumed the rental of suitable warehouse and distribution facilities. The after-tax cash flows were expected to total EUR56.3 million for southward expansion and EUR48.8 million for eastward expansion.

Marco Ponti pointed out that southward expansion meant a higher possible IRR but that moving eastward was a less risky proposition. The projected IRRs were 21.4% and 18.8% for southern and eastern expansion, respectively. These projects would be classed in the market-extension category.

9. Development and introduction of new artificially sweetened yogurt and ice cream: Fabienne Morin noted that recent developments in the synthesis of artificial sweeteners were showing promise of significant cost savings to food and beverage producers as well as stimulating growing demand for low-calorie products. The challenge was to create the right flavor to complement or enhance the other ingredients. For ice cream manufacturers, the difficulty lay in creating a balance that would result in the same flavor as was obtained when using natural sweeteners; artificial sweeteners might, of course, create a superior taste.

In addition, EUR27 million would be needed to commercialize a yogurt line that had received promising results in laboratory tests. This cost included acquiring specialized production facilities, working capital, and the cost of the initial product introduction. The overall IRR was estimated to be 20.5%.

Morin stressed that the proposal, although highly uncertain in terms of actual results, could be viewed as a means of protecting present market share, because other high-quality ice- cream producers carrying out the same research might introduce these products; if the Rolly brand did not carry an artificially sweetened line and its competitors did, the brand might suffer. Morin also noted the parallels between innovating with artificial sweeteners and the company's past success in introducing low-fat products. This project would be classed in the new-product category of investments.

10. Networked, computer-based inventory-control system for warehouses and field representatives. Heinz Klink had pressed unsuccessfully for three years for a state-of-the-art computer-based inventory-control system that would link field sales representatives, distributors, drivers, warehouses, and possibly even retailers. The benefits of such a system would be shorter delays in ordering and order processing, better control of inventory, reduction of spoilage, and faster recognition of changes in demand at the customer level. Klink was reluctant to quantify these benefits, because they could range between modest and quite large amounts. This year, for the first time, he presented a cash-flow forecast, however, that reflected an initial outlay of EUR18 million for the system, followed by EUR4.5 million in the next year for ancillary equipment. The inflows reflected depreciation tax shields, tax credits, cost reductions in warehousing, and reduced inventory. He forecast these benefits to last for only three years. Even so, the project's IRR was estimated to be 16.2%. This project would be classed in the efficiency category of proposals.

11. Acquisition of a leading schnapps<sup>2</sup> brand and associated facilities. Nigel Humbolt had advocated making diversifying acquisitions in an effort to move beyond the company's mature core business but doing so in a way that exploited the company's skills in brand management. He had explored six possible related industries in the general field of consumer packaged goods and determined that cordials and liqueurs offered unusual opportunities for real growth and, at the same time, market protection through branding. He had identified four small producers of well-established brands of liqueurs as acquisition candidates. Following exploratory talks with each, he had determined that only one company could be purchased in the near future, namely, the leading private European manufacturer of schnapps, located in Munich.

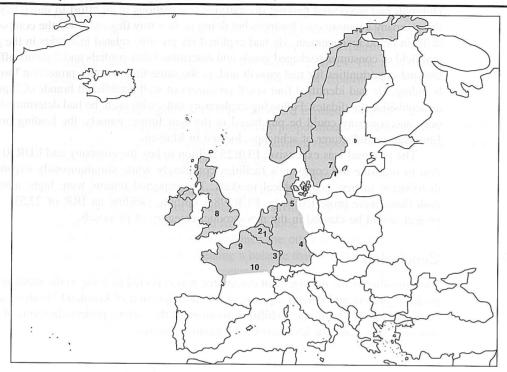
The proposal was expensive: EUR25 million to buy the company and EUR30 million to renovate the company's facilities completely while simultaneously expanding distribution to new geographical markets. The expected returns were high: after-tax cash flows were projected to be EUR198.5 million, yielding an IRR of 27.5%. This project would be classed in the new-product category of proposals.

#### Conclusion

Each member of the management committee was expected to come to the meeting prepared to present and defend a proposal for the allocation of Euroland Foods's capital budget of EUR120 million. **Exhibit 3** summarizes the various projects in terms of their free cash flows and the investment-performance criteria.

<sup>&</sup>lt;sup>2</sup>Any of various strong dry liquors, such as a strong Dutch gin. Definition borrowed from *American Heritage*® *Dictionary of the English Language*, 4th ed.

**EXHIBIT 1** | Nations Where Euroland Foods Competed



Note: The shaded area on this map reveals the principal distribution region of Euroland's products. Important facilities are indicated by the following figures:

- 1 Headquarters, Brussels, Belgium
- 2 Plant, Antwerp, Belgium
- 3 Plant, Strasbourg, France
- 4 Plant, Nuremberg, Germany
- 5 Plant, Hamburg, Germany
- 6 Plant, Copenhagen, Denmark
- 7 Plant, Svald, Sweden
- 8 Plant, Nelly-on-Mersey, England
- 9 Plant, Caen, France
- 10 Plant, Melun, France

**EXHIBIT 2** | Summary of Financial Results (all values in euro millions, except per-share amounts)

		Fiscal Year	Ending De	ecember	
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Gross sales	1,614		1,608	看台灣	1,611
Net income	77		74		56
Earnings per share	1.13		1.08		0.81
Dividends	30		30		30
Total assets	716		870		984
Shareholders' equity (book value)	559		640		697
Shareholders' equity (market value)	1,271		1,258		784

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Capital  Year  Vear  0	Snack Foods	Automation and Conveyer Systems	Southward Expansion <sup>5</sup>	Southward Eastward Expansion <sup>5</sup>	Inventory Artificial Control Sweetener System	Inventory- Control	- Strategic Acquisition <sup>6</sup>
Vear         Year           0         -17.10         -45.00         -15.00         -9.           1         -11.85         3.00         -1.88         -9.         -9.           2         4.50         7.50         2.25         -9.         -9.           3         5.25         8.25         2.63         4.         -9.00         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         -9.         4.50         9.         4.50         9.         7.50         9.         9.         7.88         2.25         9.         9.         7.88         2.25         9.         9.         7.88         2.95         9.         9.         7.88         2.95         9.         9.         9.         7.88         2.95         9.	CU	21.00	0.00	0.00	22.50	22.50	45.00
Year       0     -17.10     -45.00     -15.00     -9.       1     -11.85     3.00     1.88     -9.       2     4.50     7.50     2.25     -9.       3     5.25     8.25     2.63     4.       4     6.00     9.00     3.00     4.       6     7.50     9.75     3.75     6.       9     7.50     9.25     7.       9     7.88     2.25     9.       10     8.25     2.25     9.       11.55     35.63     10.88     29.       ROR     11.3%     11.2%     13.       10.0%     10.0%     10.0%     12.       10.2%     1.3%     0.41     3.       10.6%     0.82     1.2%     1.       10.8     2.81     0.82     1.	4.	0.00	30.00	30.00	4.50	0.00	15.00
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6 7.50 9.75 3.75  8 7 10.50 10.13 2.25  9 7.88 2.25  10 8.25 2.25  11.55 35.63 10.88  6 6 6  6 6 6  11.2%  ROR 8.0% 10.0% 10.0%  -0.2% 1.3% 1.2%  10.6%) -2.88 1.49 0.41  DR -0.19 2.81 0.82	3.38 6.00	4.13	8.25	7.50	7.50		19.50
7 10.50 10.13 2.25 9 7.50 2.25 10 8.25 7.88 2.25 11.55 35.63 10.88 3 6 6 6 6 6 6 7.8% 11.3% 11.2% 10.0	3.75 6.75	4.13	9.00	8.25	7.50		22.50
FOR T.50 2.25  7.88 2.25  7.88 2.25  10  11.55 35.63 10.88  6 6 6  6 6 6  7.8% 11.3% 11.2%  ROR 8.0% 10.0% 10.0%  -0.2% 1.3% 1.2%  -0.2% 1.3% 1.2%  -0.2% 1.3% 0.41  DR -0.19 2.81 0.82	2.25 7.50	4.13	9.75	9.00	7.50		25.50
7.88 2.25 10 8.25 2.25 11.55 35.63 10.88 3 6 6 6 6 6 7.8% 11.3% 11.2% ROR 8.0% 10.0% 10.0% -0.2% 1.3% 1.2% 1.2% 1.2% 1.2% 1.2% -0.2% 1.3% 0.41	2.25 8.25		10.50	9.75	7.50		28.50
10 8.25 2.25 6.00 1.1.55 35.63 10.88 7 10.08 7.8% 11.3% 11.2% 10.0	2.25 9.00		11.25	10.50	7.50		31.50
Ccepted 6 6 6 6 6 6 6 5 5 7.8% 11.3% 11.2% 10.0% 10.0% 10.0% 10.0% 10.0% 10.0% 10.0% 10.0% 10.0% 10.2% 1.3% 1.2% 1.2% 1.2% 1.2% 1.3% 1.2% 1.2% 1.2% 1.3% 1.2% 1.2% 1.2% 1.3% 1.2% 1.2% 1.3% 1.2% 1.2% 1.3% 1.2% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.2% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.2% 1.3% 1.3% 1.2% 1.3% 1.3% 1.2% 1.3% 1.3% 1.3% 1.3% 1.3% 1.3% 1.3% 1.3	2.25 9.75		12.00	11.25	7.50		88.50
k (years)     6     6     6     6       m Payback Accepted     7.8%     11.3%     11.2%       m Accepted ROR     8.0%     10.0%     10.0%       -0.2%     1.3%     1.2%       Corp. WACC (10.6%)     -2.88     1.49     0.41       Minimum ROB     -0.19     2.81     0.82	10.88 29.25	7.88	56.25	48.75	42.75	00.9	198.50
Minimum ROB  T.8% 7.8% 11.3% 11.2% 8.0% 10.0% 10.0% -0.2% 1.3% 1.2% Corp. WACC (10.6%) -0.19 2.81 0.82	2 9	9	2	Ŋ	Ŋ	က	2
7.8% 11.3% 11.2% m Accepted ROR 8.0% 10.0% 10.0% 10.0% 10.2% 1.3% 1.2% Corp. WACC (10.6%) -2.88 1.49 0.41 Minimum ROB -0.19 2.81 0.82	5 6	4	9	9	9	4	9
M Accepted ROR     8.0%     10.0%     10.0%       -0.2%     1.3%     1.2%       Corp. WACC (10.6%)     -2.88     1.49     0.41       Minimum ROB     -0.19     2.81     0.82	11.2% 13.4%	8.7%	21.4%	18.8%	20.5%	16.2%	27.5%
Corp. WACC (10.6%) -2.88 1.49 0.41 Minimum ROB -0.19 2.81 0.82	8		12.0%	12.0%	12.0%	8.0%	12.0%
-2.88 1.49 0.41 -0.19 2.81 0.82	1.2% 1.4%	%2.0	9.4%	%8.9	8.5%	8.2%	15.5%
-0.19 2.81 0.82	0.41 3.74	-1.31	17.99	13.49	13.43	1.75	69.45
	0.82 1.79	0.48	14.85	10.62	10.97	2.67	59.62
Equivalent Annuity <sup>2</sup> -0.04 0.46 0.13 0.32	0.13 0.32	0.09	2.63	1.88	1.94	1.03	10.56

return for that project. ant that yields a net present value equal to the NPV at the minimum required ranking projects on the basis of equivalent annuity, bigger annuities create manding projects.

Investment in fixed assets

# Star River Electronics Ltd.

On July 5, 2001, her first day as CEO of Star River Electronics Ltd., Adeline Koh confronted a host of management problems. One week earlier, Star River's president and CEO had suddenly resigned to accept a CEO position with another firm. Koh had been appointed to fill the position-starting immediately. Several items in her in-box that first day were financial in nature, either requiring a financial decision or with outcomes that would have major financial implications for the firm. That evening, Koh asked to meet with her assistant, Andy Chin, to begin addressing the most prominent issues.

## Star River Electronics and the Optical-Disc-Manufacturing Industry

Star River Electronics had been founded as a joint venture between Starlight Electronics Ltd., United Kingdom, and an Asian venture-capital firm, New Era Partners. Based in Singapore, Star River had a single business mission: to manufacture CD-ROMs as a supplier to major software companies. In no time, Star River gained fame in the industry for producing high-quality discs.

The popularity of optical and multimedia products created rapid growth for CD-ROM manufacturers in the mid-1990s. Accordingly, small manufacturers proliferated, creating an oversupply that pushed prices down by as much as 40%. Consolidation followed as less efficient producers began to feel the pinch.

Star River Electronics survived the shakeout, thanks to its sterling reputation. While other CD-ROM manufacturers floundered, volume sales at the company had grown at a robust rate in the past two years. Unit prices, however, had declined because of price competition and the growing popularity of substitute storage devices, particularly digital video discs (DVDs). The latter had 14 times more storage capacity and threatened to displace CD-ROMs. Although CD-ROM disc drives composed 93% of

This case is derived from materials originally prepared by Robert F. Bruner, Dean and Charles C. Abbott Professor of Business Administration, Robert Conroy, Paul M. Hammaker Research Professor of Business Administration, and Kenneth Eades, Professor of Business Administration. The firms and individuals in the case are fictitious. The financial support of the Batten Institute is gratefully acknowledged. It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Copyright © 2001 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. To order copies, send an e-mail to sales@dardenbusinesspublishing.com. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation. Rev. 12/05.