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Thermo Electron Corporation: The Spinout Strategy

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From 1983 to 1996, Thermo Electron Corporation amassed an impressive record in terms of growth, profitability and return on investment. Its compound annual rate of return from August 1983 to April 1996, was 23.8%—about twice the S&P 500's 11.5%. Most people familiar with the company believed that Thermo Electron's outstanding performance was due in part to the company's practice of spinning out subsidiaries into the public markets.

The spinout strategy was devised in 1983 by George Hatsopoulos, CEO and founder of Thermo Electron, and his brother, John, the chief financial officer. As a result of it, Thermo Electron had a unique organizational structure: in addition to the parent company, as at June 1996, fifteen other public companies were members of the Thermo group. This group was generally known as the "Thermo family" of companies.

Thermo Electron's public subsidiaries were extremely diverse. They included companies like Thermo Cardiosystems and ThermoLase that were basically growth options on promising new technologies (heart replacement and hair removal respectively), as well as companies like Thermo Instrument Systems that specialized in acquiring businesses and turning them around.

If anything, Thermo's subsidiaries had performed even better than the parent. Holding an equal-dollar-weighted portfolio of the listed subsidiaries (rebalanced annually), an investor could have earned a compound annual return of 39.3% between 1983 and 1996. **Exhibit 1** tabulates the stock price performance from initial public offering (IPO) to April 30, 1996 of the Thermo cluster of companies. **Exhibit 2** graphs the market values of Thermo Electron and its listed subsidiaries that have been public for at least a year.

The questions facing Thermo Electron's managers in mid-1996 were: what were the essential ingredients of Thermo Electron's success? Was the spinout strategy critical to its achievements in the past? If so, how and why did the strategy work? Would it continue to be effective? And, most importantly, how could the group maintain its present trajectory in terms of profitability, growth and returns to its shareholders?

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Early Years

Thermo Electron was founded in 1956 by George Hatsopoulos, a native of Greece, and a professor of mechanical engineering at the Massachusetts Institute of Technology. Soon afterward, George hired his younger brother, John Hatsopoulos, to be the company's purchasing manager. The two brothers had been very close since childhood, and they continued to work together to build the company. In 1996, George was the chairman and chief executive officer of Thermo Electron Corporation, and John was the chief financial officer of Thermo Electron and all its public subsidiaries.

Thermo Electron Corporation originally drew most of its revenue from contract R&D. Its main customers were the federal government and power-generating utilities. It used the money gained from contract R&D to fund product development.

The company grew steadily through the 1960s and 1970s. However, its customers were hard hit by the recession of 1981-1982 and Thermo Electron suffered from their cutbacks in capital spending. A second severe blow came in 1982 when oil prices collapsed, and the demand for its energy-efficient products disappeared.

Thermo Electron's managers responded to this crisis by redirecting the company towards high technology, medicine and the environment. It increased R&D spending on projects in ambient air monitoring, medical diagnosis, bioinstrumentation, and clean fuel technology. At the same time, it restructured its businesses, closed plants and exited a number of markets.

The Spinout Strategy

The problem In 1982, George Hatsopoulos confronted the question of how to allow his high technology company to continue growing. He saw two problems: (1) motivating managers to take appropriate risks; and (2) raising capital to fund new ventures. He explained:

> We wanted to go after big rewards. To do this we needed to attract entrepreneurs and create a small company environment.

However, by the early 1980s, the company had grown to the point that Hatsopoulos felt it was losing the feeling of a small company. Rewards based on stock options did not relate to the performance of individual managers, particularly in the smaller lines of business.

Hatsopoulos also faced the problem of financing the company's entry into new markets. In particular, investments in long-term R&D were a drag on Thermo Electron's earnings. Hatsopoulos believed the company had an implicit commitment to shareholders to show steady increases in reported earnings per share:

> To maintain our relationship with stockholders, we have to show a progression of profit, [and thus] we need to support earnings.

The solution The solution George and John Hatsopoulos devised was to sell stock in newly created public subsidiaries. These businesses were small relative to Thermo Electron as a whole, and so spinning them out gave investors a chance to buy stock in "pure plays".

Thermedics Inc., which was involved in long-term research on a heart replacement device, was the first "spinout". Its IPO took place in August 1983.

A gain from the sale of securities was immediately reflected in both the income statement and balance sheet of Thermo Electron. Thus, although Thermo Electron embarked on the IPO for reasons unrelated to accounting, the favorable accounting treatment was a beneficial side effect.

Between 1983 and June 1996, Thermo Electron took a total of eight subsidiaries public through IPOs. Two were merged in 1990, so that seven remained in June 1996.

In 1988, Thermedics, which had developed a drug and bomb detection business while continuing to work on the heart-assist device, spun out its heart research in the form of a new public subsidiary, Thermo Cardiosystems. This was the first of the so-called "grandchildren." In the ensuing years, five of the seven original public subsidiaries followed suit, taking their own subsidiaries public.

The Whole and the Sum of the Parts

Thermo Electron's common stock was listed on the New York Stock Exchange; all of the subsidiaries' stocks were listed on the American Stock Exchange. In June 1996, the combined market value of the group was approximately $9.7 billion. This number included the value of the parent company plus the value of outstanding minority shares of all the subsidiaries. In addition to the parent, the group comprised seven "children," and eight "grandchildren." **Exhibit 3** shows the structure of Thermo Electron group as of mid-1996.

One of the questions most often raised about the Thermo Electron group was: How is the parent company's value related to the sum of its holdings in subsidiaries? Arguments could be made for valuing the parent at either a premium or a discount, so there was no "right answer" to this question.

In fact, between 1983 and 1995, the parent company's value ranged from 17% *less* than its holdings (in 1988) to 26% *more* then its holdings (in 1991). In June 1996, the parent company was valued at about a 10% premium over its holdings. **Exhibit 4** shows the breakdown of Thermo Electron's market value relative to its subsidiary holdings at each year-end from 1983 to 1995.

Thermo Electron Management Principles

Over the years, Thermo Electron's managers had developed a set of principles, which they found useful in managing their businesses. These written and unwritten policies are summarized below, grouped according to the following categories shown in **Table A**.

Table A Overview of Thermo Electron Management Principles

Spinouts
Criteria for a public issue
Staging of a spinout
Agreements among the companies
The Thermo Charter
Inter-subsidiary transactions and conflicts of interest
Acquisitions and Operations
Acquisitions
Employment practices
Management compensation
Budgeting and expense control
Finance and Investor Communications

Centralized management and financial strategy
Debt guarantees and risk management
Communicating with investors
Financial innovation
Stock transactions

Spinouts

Criteria for a public issue Thermo Electron had three criteria for taking a subsidiary public. The subsidiary had to have:

1. opportunities for aggressive growth, and a need for external capital;
2. a strong management team; and
3. be attractively priced as a public company.

If these three tests were met, then the subsidiary was ready to go public.

The staging of a spinout The creation of a public subsidiary normally took place in three stages. First the subsidiary would place a small percentage of common stock with private investors. Second, the subsidiary would issue new shares—10% to 25% of its equity—to the public. The offerings were usually timed to occur when the market was "hot"; in other words, when a number of other IPOs were occurring, and new-issue prices were relatively high. Thermo Electron always kept a majority position in the subsidiary's stock after the initial public offering.

After the public offering established a visible stock price, the subsidiary usually completed a larger private placement of convertible debentures. Such debentures were especially popular in Europe, where George and John Hatsopoulos maintained close ties with a number of European financial institutions.

Agreements among the companies There were many complications arising from inter-subsidiary legal relationships. Sandra Lambert, the corporate secretary, described some of the problems:

> What do you do when an employee of subsidiary X switches jobs to subsidiary Y, and then is given stock in X as part of the compensation package in Y?

Thermo Electron had three formal contractual agreements with its subsidiaries;

1. a tax-sharing agreement;
2. a corporate services agreement; and
3. a corporate charter.

The *tax-sharing agreement* stipulated that when Thermo Electron owned at least 80% of a subsidiary, the subsidiary could be pooled with Thermo Electron for tax purposes. The subsidiary would receive the tax credits it would have used had it filed a separate return: additional tax credits, if any, would be used to offset the parent's taxable income.

The *corporate services agreement* provided that Thermo Electron, the parent, would provide services related to:

- human resource management;

- finance;
- insurance;
- contracts and litigation;
- communications and investor relations;
- accounting and legal; and
- publications (including annual reports).

The subsidiaries were charged 1%-2% of their revenue for corporate services, and could terminate the arrangement with four months' notice. The corporate services charge in 1996 was 1% of revenue.

The charter The Thermo Electron corporate charter was written in 1988 to formalize practices that affected the subsidiaries' relationships to the parent and to one another. It was adopted by all the subsidiaries' boards of directors, and was summarized in the prospectuses and proxy statements issued by members of the Thermo Electron group.

Thermo Electron's general intention to keep a majority ownership of each subsidiary was clearly set forth in the charter. The substance of the corporate services agreement was also described.

The charter governed relationships among all member of the Thermo Electron family. It recognized that the board of directors of each subsidiary had distinct responsibilities to the shareholders of that subsidiary. The CEO of each subsidiary reported to the board of the subsidiary, and also to a sector head on Thermo Electron's operating committee. The subsidiary's controller reported to the CEO of the subsidiary and to Paul Kelleher, Thermo Electron's controller.

The charter also stipulated that the chief financial officer of Thermo Electron and all its subsidiaries would be the same person—currently John Hatsopoulos. Subsidiaries could put their funds in a centralized cash management system controlled by the company. The subsidiaries could borrow against this fund at any time, and were paid interest on their deposits.

Intersubsidiary transactions Thermo Electron required that its subsidiaries deal with one another on an arm's length basis. The level of intercompany transactions was very low: for example, in 1995, intercompany sales amounted to 0.3% of the group's total revenue. Any significant transaction between two subsidiaries had to be approved by both boards of directors, including outside directors.

Acquisitions and Operations

Acquisitions Thermo Electron and its subsidiaries made a number of acquisitions, but the group did not impose a common acquisition strategy on its subsidiaries. Instead, each unit developed its own acquisition strategy, based on particular conditions in its markets.

For example, Arvin Smith, CEO of Thermo Instrument Systems, said that his company used acquisitions to enter new markets.

> Instrument customers tend to be good at judging a product. What is important is having the best instrument. [Thus], we use acquisitions to enter markets: otherwise it would take forever.

If a subsidiary sought to acquire another company, it would propose the acquisition to the Thermo Electron Operating Committee, who (if they were in favor) would then present the proposal to Thermo Electron's board for its views. The acquisition would then be formally proposed to the subsidiary board, which had final approval rights.

Employment practices George Hatsopoulos believed that a key benefit of the corporate structure was the fact it could reward entrepreneurial ability and retain employees by giving them the chance to run their own public company. Employees leaving to start their own firms might be commonplace at other high technology firms, but were almost unheard of at Thermo Electron.

Another benefit was that top managers of the public subsidiaries were in direct contact with shareholders, and thus gained valuable exposure to the capital markets. Hatsopoulos pointed out, "Contenders for my position are getting training with a public company."

Below the top management ranks, Thermo Electron sought to develop an integrated labor market. Employees could apply for positions anywhere within the Thermo Electron group and were free to switch jobs as positions opened up. However, being part of the larger organization gave employees greater opportunities for growth and more job security than the subsidiaries could have offered had they been a stand-alone company.

Thermo Electron also maintained a strong, public commitment not to sell a subsidiary. Hatsopoulos said divestitures would be demoralizing to employees: "you don't sell your children, they're part of the Thermo Electron family."

In fact, most of Thermo Electron's most senior managers and headquarters staff had been with the company a very long time. However, as the subsidiaries grew and acquired new businesses, more of the key subsidiary managers were being recruited from outside the group.

Managerial compensation Hatsopoulos was a firm believer in giving employees stock options in the company:

> Basing rewards on financial results does not work as well as stock options because accounting results can't measure value created. The head of the company can decide on the reward, but then the manager can claim unfairness. The stock market, however, is objective—the manager can't complain to the market.

There was an informal rule that the presidents of the subsidiaries received 50% of their options in their own subsidiary, 40% of their options in Thermo Electron, and 10% in other subsidiaries. Further down in the organization, the employees received the bulk of their options in their own company's stock.

Typically, Thermo Electron and its subsidiaries awarded 5% to 10% of their stock in options every five years. About 20% of the group's employees received options-based compensation in any given year. Options were exercisable at the current market price on the date of issue, with terms ranging from seven to twelve years.

Budgeting and expense control Thermo Electron's top managers believed in strict budgets and tight expense control. All subsidiaries were encouraged to keep head counts to a minimum, and to outsource all nonessential functions. Staffing up in anticipation of revenue growth was especially discouraged, and as a result, the operating businesses were very lean. According to Rick Chapman, CEO of ThermoQuest, "Thermo companies are 0.8 deep in every position."

A scientist himself, George Hatsopoulos, did not believe that scientists and engineers needed to spend lavishly to do good work. In the mid-1980s, as Thermo Electron began to spin out R&D-intensive businesses, the following policy was developed as a way of controlling expenditures:

> A public subsidiary that issues shares or debentures will earn a market rate of interest if it deposits the funds with the central financial office. The subsidiary may then set its R&D budgets to *break even* in terms of net income.

In effect, Thermo subsidiaries could finance R&D, as well as other business development expenses, by "spending the interest" earned on the money they raised in the public markets. They could supplement these funds by taking on contract R&D for the U.S. government or other third parties.

This policy ensured that, in terms of both cash flow and reported net income, each subsidiary "paid its own way." The earnings of a profitable subsidiary would not be used to finance a business that was losing money. John Hatsopoulos believed that this policy distinguished Thermo Electron from other public companies in the eyes of investors:

> That's why people don't like conglomerates. They use their cash cows to fund their dogs. We don't cross-subsidize. The public subsidiaries have to raise their own funds.

Finance and Investor Communications

Centralized management and financial strategy The Thermo Electron charter provided that most financial activities of the group would be managed centrally. Public subsidiaries could place their funds in a central Thermo "bank," and were paid interest on their deposits. Other members of the group could borrow from the bank at market interest rates. However, Thermo Electron's budgeting and expense control policies caused most of the subsidiaries to have large cash surpluses. The excess funds were invested in marketable securities.

Thermo Electron's financial strategy was conservative. George and John Hatsopoulos believed that, with the technical risks inherent in the businesses, the group should not take any additional financial risks. According to George Hatsopoulos:

> I want to have permanently parked on the balance sheet a large amount of cash for use only in emergencies. Having a lot of cash allows me to take more risk.

As of the end of 1995, the group's cash and short-term investments amounted to $1.05 billion, against total debt of $1.22 billion.

Debt guarantees and risk management Thermo Electron guaranteed interest and principal payments on virtually all its subsidiaries' debt. Parent and subsidiary debt had the same ratings: senior unsecured debt was rated A, and subordinated debt A-, by Standard & Poors.

The parent guarantee allowed Thermo Electron's subsidiaries to borrow at a lower rate and with more favorable conversion prices than stand-alone companies of similar size.

The risk implicit in parent company guarantees was mitigated by the group's budgeting and expense control policy. The cash proceeds of a debt issue went into the Thermo "bank"; often the subsidiary only spent the interest on the proceeds. In theory, if a subsidiary's R&D did not pan out, the parent company could wind down its operations, and simply manage the cash against the liabilities. The debt obligation would then be almost completely hedged, and the parent's guarantee exposure would be very small.

Communicating with investors Thermo Electron's philosophy was to be as open as possible with investors. John Hatsopoulos stated "while other companies shun investors when there is bad news, we make ourselves available to reassure them". Such an attitude and the continued stellar performance by the subsidiaries kept investors clamoring for the group's stock and debt issues. (See **Exhibits 1** and **2**).

John Hatsopoulos took pride in the company's relationship with its investors. He was, however, conscious of how easily things could change:

> Because of the relationship built up with investors, they may excuse us for the occasional small mistake. However, one major mistake by Thermo Electron or any of its spun-out subsidiaries could adversely affect investor attitude towards the entire group.

Having such a large number of public companies exposed Thermo Electron to more risk of securities litigation than most companies of its size. U.S. securities law was especially strict in requiring the disclosure of all value-relevant information, particularly around the time of a public offering.

Financial innovation Thermo Electron's credibility with investors enabled it to undertake innovative financial transactions. For example, in 1988, when the stock market was still reeling from the crash of October 1987, Thermo Electron managed to launch the Thermo Cardiosystems IPO by attaching put rights to the stock. The puts, which were guaranteed by Thermo Electron, allowed the holders of Cardiosystems to sell their shares back at the IPO price, at various times within three years. Substantively, the common-stock-plus-put-right package was equivalent to a zero-coupon convertible debt issue. Thermo Cardiosystems later issued actual zero coupon convertibles.

In 1995, ThermoQuest and Thermo Optek, both subsidiaries of Thermo Instrument Systems, reversed the normal staging of a spinout by issuing convertible debentures *before* they went public. The deals were structured so that, for every year the issuer did not go public, the coupon on its debt would increase 50 basis points (up to a maximum of 150 basis points above its initial rate of 5%), and the conversion premium would drop 2.5 percentage points. Both ThermoQuest and Thermo Optek went public in the first half of 1996.

Stock transactions What with IPO's, debt issuances, private placements and conversions going on for sixteen public companies, Thermo Electron and its subsidiaries were continuously involved in securities transactions. These transactions were an important source of cash to the group, as well as a source of nonoperating income to the parent. Exhibit 5 shows Thermo Electron's cash proceeds and net income from transactions in the stock of subsidiaries in 1993, 1994, and 1995.

Thermo Electron used open market purchases to maintain targeted levels of ownership in its subsidiaries. For example, to continue to consolidate Thermo Instrument Systems for tax purposes, the parent company had to always maintain at least 80% ownership of Instrument's common stock. Stock outstanding could fluctuate because of debt conversions and the exercise of options by employees. Thus John Hatsopoulos's office actively monitored the parent's holdings and used open market purchases and sales to maintain ownership within comfortable bounds.

In addition, through the central treasurer's office, Thermo companies purchased their own common stock. The parent company was known to be willing to purchase shares in any subsidiary whose stock was deemed to be undervalued. The group's total liquid resources were large, totalling approximately $1.1 billion at the end of 1995, hence this policy, which had been implemented on a few occasions, was a significant deterrent to would-be short-sellers.

Costs of Thermo Electron's Unique Structure

Headquarters' expenses at Thermo Electron were approximately $ 29 million in 1995, or 1.3% of the group's consolidated revenue. In recent years, headquarters expense had not increased as fast as revenue, thus the corporate services charge had been declining.

George Hatsopoulos guessed that Thermo Electron had three to four million dollars per year of extra overhead because of its unique structure. But he was quick to point out that the added overhead was less than if all the public subsidiaries had been independent companies.

Paul Kelleher, the controller, thought Hatsopoulos' estimate too high, but agreed that there were extra costs:

> We have more employee option plans than you can shake a stick at. Plus we have all the additional legal requirements and reporting requirements. We have to write quarterly and annual reports for each subsidiary, and have independent audits.

Kelleher half-jokingly remarked that a major cost of the company's structure was, "wearing people out. . . . Some of us attend six board meetings every three months."

John Wood, CEO of Thermedics, said the process reminded him of a cartoon where:

> They provide us with headphones for translating as they do at the United Nations, so that at board meetings we know which subsidiary we are representing.

Two Tracks Within Thermo Electron

Within Thermo Electron there were companies of two distinct types. Some, like Thermo Cardiosystems and ThermoLase, were "building value from the ground up." To succeed, their managers had to transform their technologies into commercial products and build new markets. Wall Street saw these ventures as "pure plays" on promising ideas. From a valuation standpoint, they were "growth options"; that is, they offered high upside potential, and limited downside risk if managed well.

Other subsidiaries within the group, like Thermo Instrument Systems[1], were in the business of acquiring underperforming companies and turning them around. Managers of these businesses had to be skilled at restructuring businesses to achieve positive cash flow and growth within a short period of time. These companies were valued on the basis of their cash profits and expected growth.

One question facing Thermo Electron in 1996 was: Because of its structure, could it continue to accommodate companies with such diverse strategies and goals "under one roof?"

Most organizations comparable to Thermo Electron, specifically venture capitalist and LBO organizations, tended to specialize in one type of business or another. For example, a typical venture capitalist's portfolio looked very much like that of Thermo Electron's portfolio of "growth options." The risk profile of these ventures was highly skewed: typically for every technology that delivered on its early promise, ten might only break even or fail.

LBO organizations, on the other hand, concentrated on improving the value-added performance of established businesses. The risks in these businesses were not as high as in high-tech startups, but, by the same token, the returns were not as great. (LBO organizations took advantage of the low business risk of their portfolio companies by issuing debt. The resulting high leverage increased the rate of return to equity investors.)

For a single organization to succeed at both turnarounds and startups was almost unheard of. That, however, is what Thermo Electron was attempting to do. Thus in 1996, the group contained businesses in every stage of the life-cycle, from startups to cash cows. Thermo had thus far managed

[1] The turnaround strategy is described in detail in Thermo Instrument Systems, Inc.: The Turnaround Factory, Harvard Business School Case 897-068.

to keep the businesses independent and not competitive with one another. But the *managers* were all part of one "family," and hence, were bound to follow the group's policies and management principles.

Exhibit 1 Stock Price Performance of Thermo Companies

Subsidiary	IPO Date	Split-Adjusted IPO Price	Closing Price April 30, 1996	Compounded Annual Return from IPO to April 30, 1996
Thermedics, Inc.	August 1983	$2.53	$30.25	21.6%
Thermo Instrument Systems, Inc.	August 1986	$1.90	$33.00	34.4%
Thermo TerraTech Inc.[a]	August 1986	$2.78	$13.50	17.8%
Thermo Power Corp.[b]	June 1987	$8.50	$13.25	5.2%
Thermo Cardiosystems Inc.	January 1989	$1.51	$47.42	60.9%
Thermo Voltek Corp.[c]	March 1990	$1.12	$20.25	60.9%
ThermoTrex Corp.[d]	July 1991	$8.00	$52.50	48.6%
Thermo Fibertek Inc.	November 1992	$5.33	$22.88	53.2%
Thermo Remediation Inc.	December 1993	$8.33	$13.63	23.5%
ThermoLase Corp.	July 1994	$3.00	$33.13	294.5%
Thermo Ecotek Corp.[e]	January 1995	$12.75	$23.63	63.8%
ThermoSpectra Corp.	August 1995	$14.00	$17.25	36.8%
Weighted average (equal dollar investment)				39.3%
Thermo Electron Corp.	October 1967	$0.68	$61.63	17.1%
Compounded return since August 1983				23.8%
S&P 500	August 1983	$164.40	$654.17	11.5%

Notes:

[a]Formerly known as Thermo Process Systems.
[b]Formerly known as Tecogen.
[c]Formerly known as Universal Voltronics. Acquisition date is used instead of IPO date.
[d]Formerly known as Thermo Electron Technologies Corp.
[e]Formerly known as Thermo Energy Systems.

Exhibit 2 Performance of Thermo Electron Companies

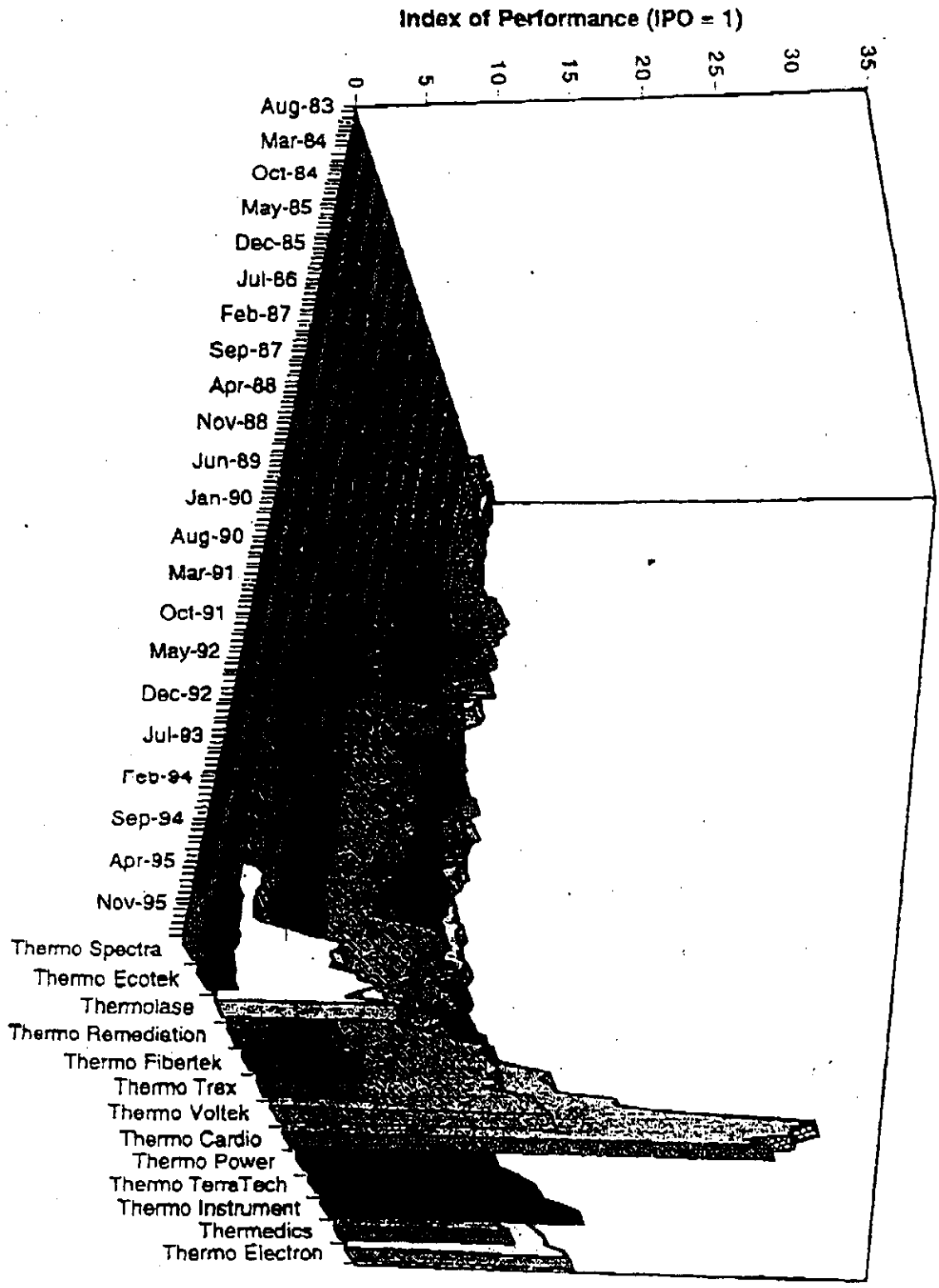
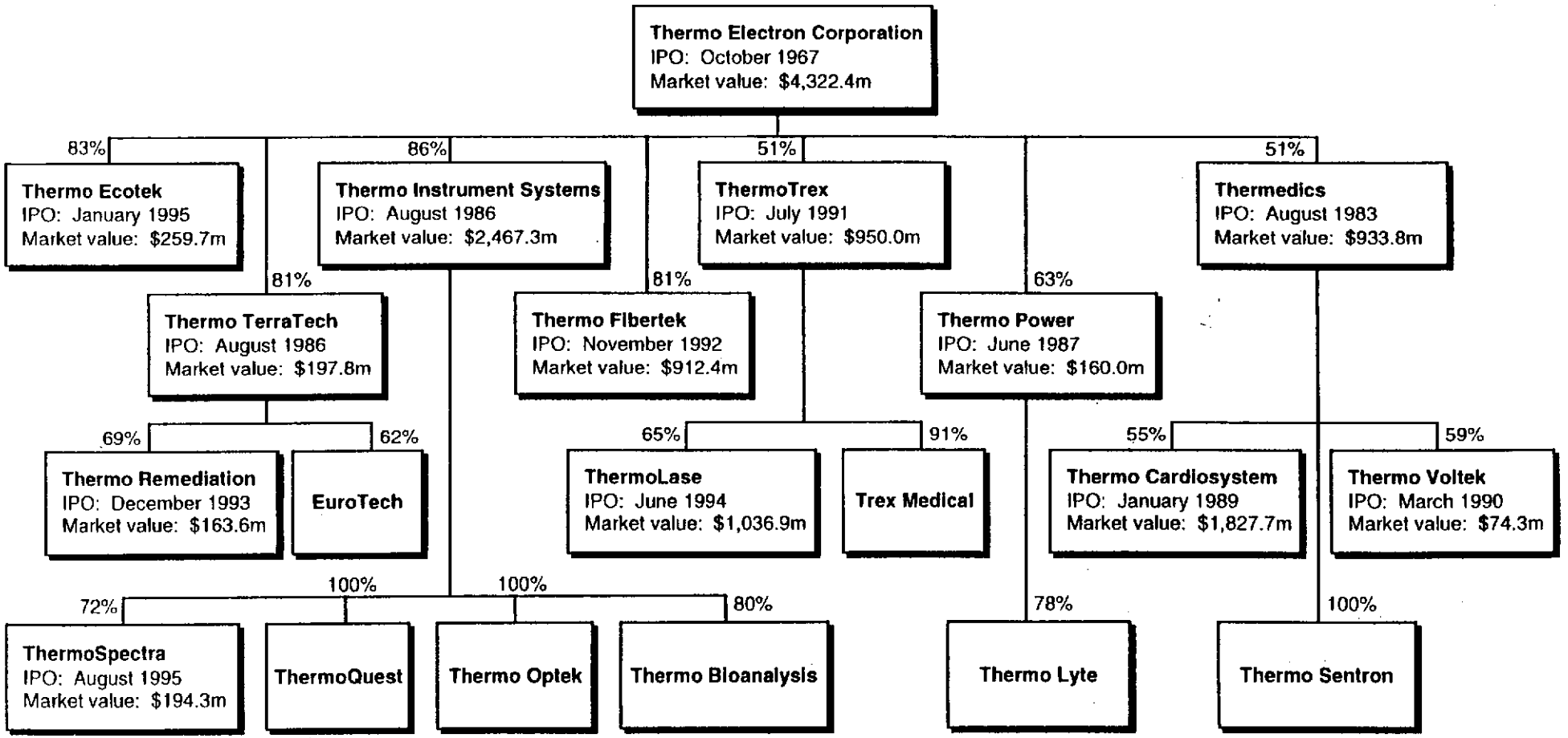


Exhibit 3 Thermo Electron Corporation's Organization Structure as at December 30, 1995



Subsequent events:
ThermoQuest had its IPO in March 1996. Following the IPO, Thermo Instrument System's shareholding in the company dropped to 93%.
Thermo Sentron had its IPO in March 1996. Following the IPO, Thermedics' shareholding in the company dropped to 71%.
Thermo Optek had its IPO in June 1996. Following the IPO, Thermo Instrument System's shareholding in the company dropped to 94%.

Exhibit 4 Breakdown of Thermo Electron's Value

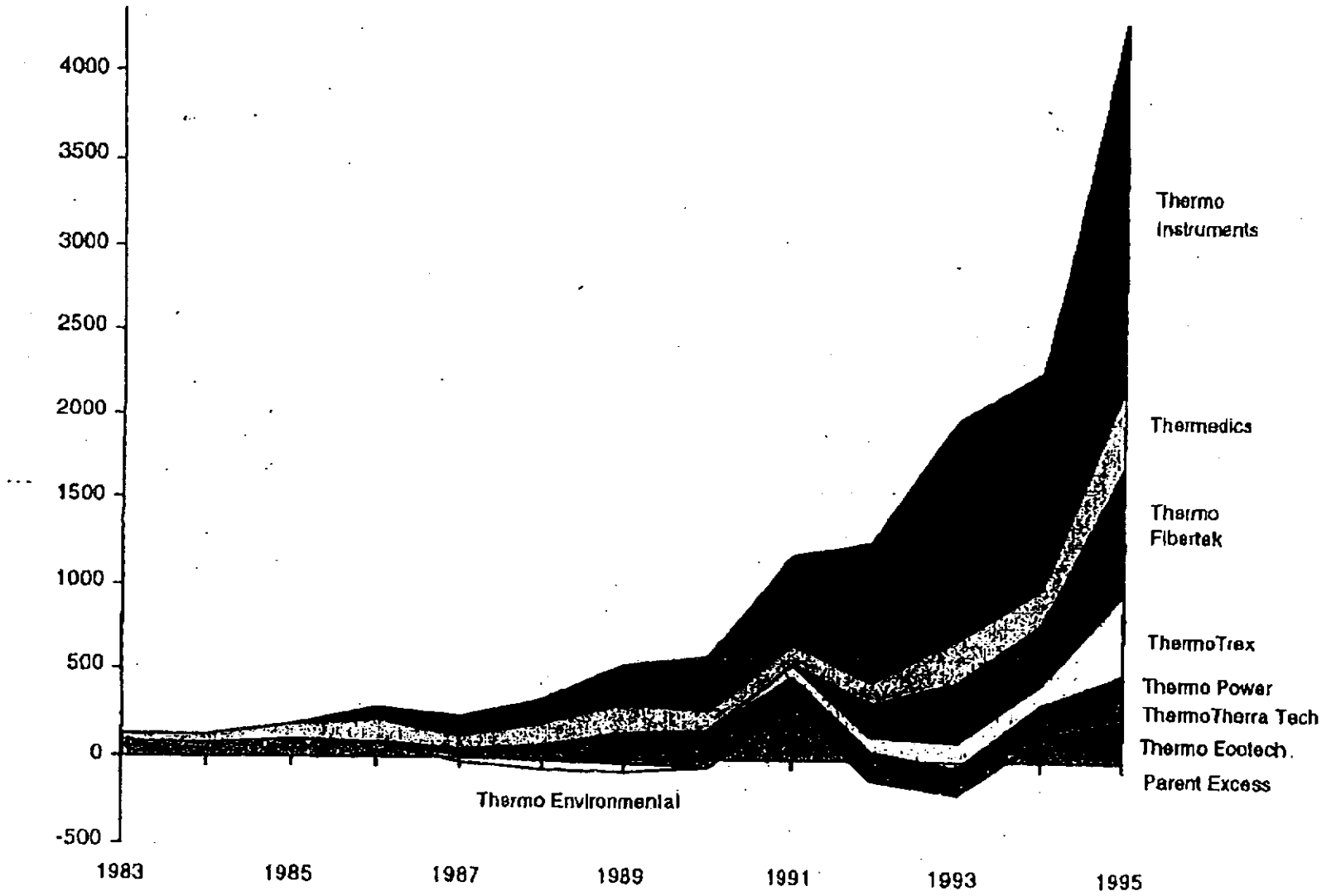


Exhibit 5 Primary Transactions in Stock of Subsidiaries

Company	Purpose	Net Cash Proceeds ($ million)	Accounting (Book) Income ($ million)
1995:			
Thermo Ecotek	Initial public offering	27.5	7.9
Thermo BioAnalysis	Private placement	14.9	9.5
Thermo Remediation	Private placement	6.6	1.6
ThermoLase	Private placement and initial public offering	55.3	34.7
ThermoSpectra	Initial public offering and private placement	24.9	10.6
Thermo Voltek	Conversion of convertible debentures—$9.1 million		3.5
Trex Medical	Private placement	17.6	12.8
	Total	**146.8**	**80.4**
	Percentage of Income Before Taxes and Minority Interest		26.9%
1994:			
ThermoTrex	Public offering	23.0	7.9
ThermoLase	Initial public offering	14.8	8.6
ThermoSpectra	Private placement	14.0	6.5
Thermedics	Conversion of convertible debentures—$3.7 million		1.0
	Total	**51.8**	**24.0**
	Percentage of Income Before Taxes and Minority Interest		11.6%
1993:			
Thermedics	Public offering	30.0	10.7
Thermo Power	Public offering	36.0	10.6
ThermoTrex	Private placement	27.5	11.4
Thermo Remediation	Private placement and initial public offering	14.6	4.2
Thermedics	Conversion of convertible debentures—$7.3 million		2.5
	Total	**108.1**	**39.4**
	Percentage of Income Before Taxes and Minority Interest		30.0%

Source: Thermo Electron 1995 Annual Report.