

DIVERSIFICATION THROUGH ACQUISITION OF
FOREIGN COMPANIES: A CASE STUDY

by

Rafael del Pino
S.M., Universidad Politécnica de Madrid
(1981)

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN MANAGEMENT

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

June 1986

© Rafael del Pino 1986

The author hereby grants M.I.T. permission to reproduce
and to distribute copies of this thesis document in
whole or in part.

Signature of author: _____
Alfred P. Sloan School of Management
May 16, 1986

Certified by: _____
Arnoldo C. Hax
Thesis Supervisor

Accepted by: _____
Jeffrey A. Barks
Associate Dean, Master's and Bachelor's Programs



DIVERSIFICATION THROUGH ACQUISITION OF
FOREIGN COMPANIES: A CASE STUDY

by

Rafael del Pino

Submitted to the Alfred P. Sloan of Management on May 16, 1986, in partial fulfillment of the requirements for the Degree of Master of Science in Management.

ABSTRACT

Diversification has been, for the past twenty years, the standard approach to Corporate growth in America. In spite of that, many diversified companies in the Fortune 500 lag behind the average in terms of return on assets and return on equity, and have lower price earnings ratio than the market average.

The objective of this thesis is to develop a framework that will help managers analyze their diversification decisions under the perspective of creating value for shareholders, and it concentrates on diversification made through acquisitions.

The framework is later applied to study the optimal entry strategy of a Spanish construction company in the U.S. market, and to evaluate the adequacy and value of several acquisition candidates.

Thesis Supervisor: Dr. Arnoldo C. Hax

Title: Professor of Management

TABLE OF CONTENTS

PART 1. ABOUT DIVERSIFICATION STRATEGIES. page

1. THE RATIONALE FOR DIVERSIFICATION.....	5
2. DIVERSIFICATION STRATEGIES.....	7
Internal development.....	7
Acquisitions.....	8
Licensing.....	8
Internal ventures.....	8
Joint ventures.....	9
Venture capital and educational acquisitions.....	9
3. THE FAMILIARITY MATRIX.....	12

PART 2. A FRAMEWORK FOR THE ACQUISITION EVALUATION
PROCESS.

1. GENERAL APPROACH TO ACQUISITION ANALYSIS.....	18
The planning stage.....	18
Search and screen process.....	20
Financial evaluation.....	21
2. DIVERSIFICATION OBJECTIVES AND ACQUISITION CRITERIA	24
3. STRATEGIC AND ORGANIZATIONAL FIT.....	26
4. SELECTION AND SCREENING OF CANDIDATES.....	30
5. FINANCIAL EVALUATION.....	32
Calculating cash flow.....	34
Cost of Capital.....	36
The reservation price.....	36
6. SUMMARY.....	38

ENVIRONMENTAL SCAN

1. OVERVIEW OF THE SPANISH CONSTRUCTION MARKET.....	40
2. ANALYSIS OF COMPETITORS (SPAIN).....	43
3. INTERNATIONAL OUTLOOK.....	47
4. THE U.S. CONSTRUCTION INDUSTRY.....	49
5. ANALYSIS OF COMPETITORS (U.S.).....	52
6. SUMMARY OF THE ENVIRONMENTAL SCAN.....	57

VISION OF THE FIRM AND INTERNAL SCRUTINY

7. BRIEF HISTORY OF FERROVIAL.....	58
8. VISION OF THE FIRM.....	60
9. INTERNAL SCRUTINY OF FERROVIAL AND POTENTIAL SYNERGIES WITH AN EVENTUAL U.S. PARTNER.....	61

STRATEGIC THRUSTS AND ACQUISITION CRITERIA

10. STRATEGIC THRUSTS.....	63
11. TWO POSSIBLE APPROACHES.....	64
12. ACQUISITION CRITERIA.....	67

SEARCH AND SCREEN PROCESS

13. SCREENING OF CANDIDATES.....	69
14. SELECTION OF CANDIDATES.....	78

FINANCIAL ANALYSIS

15. C.W. DRIVER: FINANCIAL ANALYSIS.....	80
16. SUMMARY.....	91

17. CONCLUSIONS AND RECOMMENDATIONS.....	92
--	----

BIBLIOGRAPHY.....	96
-------------------	----

PART 1. ABOUT DIVERSIFICATION STRATEGIES.

1. THE RATIONALE FOR DIVERSIFICATION.

One of the reasons more commonly cited for diversification is to mitigate the effects of a slowdown in sales and/or earnings accompanying the mature phase of a business life cycle. The first priority is frequently the search for candidates operating in markets with higher actual or potential growth rates than the traditional one.

Competitive pressure, the desire to smooth out cyclical business cycles, and the desire to build a cash balanced business portfolio -in which mature cash generating businesses help finance cash consumers- can also force companies to diversify.

Another precipitating factor is the existence of companies in conditions of extreme liquidity, whose excess cash cannot be profitably reinvested in the core business, and who seek to invest these idle assets in new businesses with the potential for generating returns in excess of those that could be earned from simple portfolio investments alone.

Growth minded companies with access to financial resources have also used unrelated diversification as a way to mitigate the constraints imposed by antitrust legislation in vertical or horizontal integration.

We can identify two essentially different diversification strategies. A related diversifier is one that expands the basic business by entering markets or adding activities that are tangibly related to the collective skills and strengths possessed by the company. An unrelated diversifier is a company pursuing growth in markets not necessarily related to the core business.

Historically, related diversifiers have performed better than the S&P 500 average, and better than dominant business companies. The performance of unrelated diversified companies has lagged behind the other two.

2. DIVERSIFICATION STRATEGIES.

Familiarity of a company with the technology and market being addressed is the critical variable that explains much of the success or failure in new business development approaches. Rumelt, in his 1974 study about the relative performance of dominant business companies, related business companies, and unrelated business companies, found that the related group of companies was the most profitable, building on single strengths or resources associated with their original business.

The superior performance of these "well managed" organizations seemed to derive from the fact that they had been able to identify the key strengths developed in their original businesses and build upon them. Also, they had not moved into potentially attractive new business areas that required skills that they did not possess. As Peters & Waterman said in Search of Excellence, they stuck to their knitting.

Selective use of the alternative strategies available for entering new businesses is a key issue for diversifying corporations. The approaches include internal development, acquisition, licensing, joint ventures, and minority venture capital investments.

Internal development.

Internal development exploits internal resources as a basis for establishing a business new to the company. According to Biggadike's study, eight years are typically needed to generate a positive return on investment and the performance of the new unit does not

match that of a mature business until ten or twelve years have elapsed. However, Weiss study suggests that independent businesses started by individuals require half the time of corporate ventures to reach profitability.

In addition to these time constraints, the unfamiliarity with new markets may lead to errors.

Acquisitions.

Acquisitions allow for a much faster market entry and offer a much lower initial cost of entry into a new business or industry. This is especially so if the key variables for success in the new business are intangibles, such as patents, brand name, reputation or R&D skills, that are difficult to duplicate in internal developments in a reasonable period of time or at a reasonable cost.

On the other hand, if the new business area is unfamiliar to the parent company, the new management team may not take optimal decisions in a first stage.

Licensing.

Licensing is an alternative to acquiring a complete company. It provides rapid access to proven technology with reduced financial exposure, although is not a substitute for internal technical competence. As the technology is not proprietary of the licensee, it makes him dependent upon the licensor.

Internal ventures.

Internal ventures use existing resources to set up a separate entity within the existing corporate body. They

have a mixed record of success, but may be the only way for a company to retain a talented entrepreneur. However, the corporation's internal climate may prove unsuitable to maintain the entrepreneurial incentives or spirit.

Joint ventures.

Joint ventures allow to exploit synergies between small and large companies, and become an essential factor when projects are large, technology more expensive or the cost of failure too large to be borne by a company alone. As a drawback, there is a great potential for conflict between the two partners.

Generally the small company provides the technology, the large company provides the marketing capability, and the venture is synergistic for both parties. The small company, because of its size, usually lacks the necessary marketing clout and the opposite very rarely is true.

The creative use of corporate venture capital is a special subdivision of joint venturing, with growing strategic importance.

Venture capital and educational acquisitions.

The venture capital strategy permits some degree of entry at the lowest level of required corporate commitment. The most usual motivation is the opportunity to secure a window on a new technology or on a new market through becoming involved in the growth and development of small companies with a minority investment. Because of its necessarily reduced size it

is unlikely to become by itself a major stimulus of corporate growth or diversification.

In educational acquisitions the acquiring firm immediately obtains people familiar with the new business area, providing then a staffed window on technology or on the market. It usually requires a higher level of financial commitment than a minority investment and therefore its associated downside risk is higher. It is also necessary to ensure that key people do not leave after the acquisition as a result of the elimination of entrepreneurial incentives.

Exhibit 1 summarizes the advantages and disadvantages of the different diversification strategies.

EXHIBIT 1
DIVERSIFICATION STRATEGIES: SUMMARY

<u>Strategy</u>	<u>Advantages</u>	<u>Disadvantages</u>
Internal development	Use existing resources	Time to break even Unfamiliarity leads to errors
Acquisition	Rapid entry	New area may be unfamiliar to parent
Licensing	Rapid access to technology	Dependent upon licensor
Internal Ventures	Retain entrepreneur Existing resources	Unsuitable climate Mixed success record
Joint Ventures	Exploit synergies Distribute risk	Potential conflict between partners
Venture Capital	Window on market or technology	Unlikely to stimulate large corporate growth
Educational Acquisitions	Provides window & initial staff	Risk of departure of entrepreneurs

Each entry strategy requires a different level of corporate involvement and commitment. In venture capital and educational acquisitions corporate involvement is relatively low. Licensing, internal ventures and joint ventures require a higher degree of corporate involvement, and both internal developments and acquisitions require the highest degree of it (see exhibit 2).

EXHIBIT 2.

CORPORATE INVOLVEMENT IN ACQUISITION STRATEGIES

- | | | |
|----------------------------|---------------------|------------------------|
| • Venture capital | • Licensing | • Acquisitions |
| • Educational acquisitions | • Joint ventures | • Internal development |
| | • Internal ventures | |

LOW ————— CORPORATE INVOLVEMENT ————— HIGH

It is clear by now that there is no single mechanism ideal for all new business development, and that the selective use of entry mechanisms can yield substantial benefits as compared to concentration on one particular approach. The familiarity matrix, described in the next chapter, is a tool that is useful to decide when to use each strategy and why.

3. THE FAMILIARITY MATRIX.

Introduction.

The familiarity matrix can be applied to help a company select optimum entry strategies into new technologies or new markets, depending on the familiarity of the company's management with these new areas.

EXHIBIT 3. THE FAMILIARITY MATRIX

MARKET FACTORS			
New unfamiliar			
New familiar			
Base			
	Base	New familiar	New unfamiliar
	TECHNOLOGIES OR SERVICES EMBODIED IN THE PRODUCT		

Base, familiar, and unfamiliar technologies and markets.

We will say that a technology or service is new when it has not been formerly embodied within the products of the company. A market is new when the products of the company have not been targeted at that market before.

A technology is familiar to a company when this technology exists within the company, even if it has not been embodied in any of its products. Similarly, a market will be considered familiar when the characteristics and business patterns of this market are understood within the company, but not necessarily as a result of participation in it.

If the businesses in which a company presently competes are called its base businesses, then the market factors associated with the new business area may be characterized as base markets, new familiar or new unfamiliar markets. Similarly, the technologies or services embodied in the product for the new business area may be classified according to the same criteria (see exhibit 3).

Different strategies for different objectives.

In a situation in which familiarity is low or absent, preacquisition screening is liable to miss important factors, reducing the probability of success. This argument can be extended to internal development, leading to the conclusion that entry strategies requiring high corporate involvement (acquisitions and internal development) should be reserved for new businesses with familiar market and technological characteristics.

Following the same argument one can conclude that entry mechanisms requiring low corporate input seem best suited for unfamiliar sectors (see exhibit 4).

A two stage approach may be appropriate for entry into unfamiliar sectors. The first stage would be devoted to

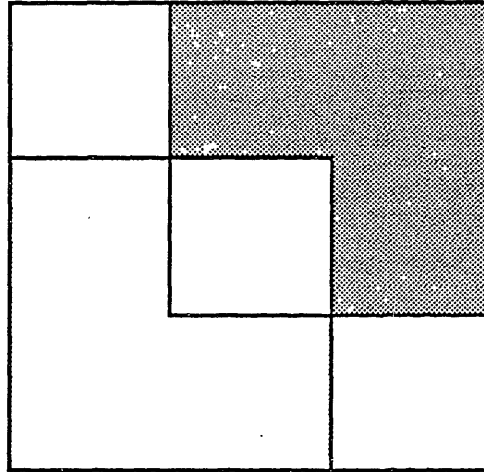
EXHIBIT 4
FAMILIAR AND UNFAMILIAR SECTORS

MARKET
FACTORS

New
unfamiliar

New
familiar

Base



Base New New
 familiar unfamiliar

TECHNOLOGIES OR SERVICES
EMBODIED IN THE PRODUCT



Familiar Marginal Unfamiliar
sectors sectors sectors

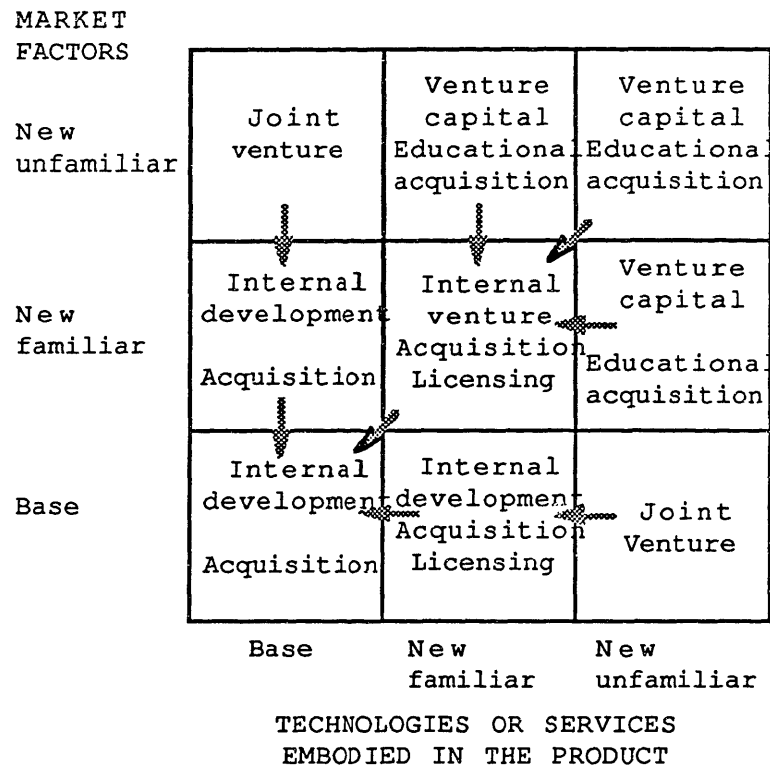
building corporate familiarity in the new area, so as to be in a position from which the parent company can exercise adequate judgement on the commitment of more substantial resources. The second would entail the commitment of these resources to effectively diversify into the new area. In the case of a first stage educational acquisition, for example, the target should be evaluated on the basis of its ability to provide

increased corporate familiarity, and not short term profitability.

Within base or familiar sectors, a company is fully equipped to undertake all aspects of new business development. Although the full range of strategies may be considered, the potential for conflict between partners reduces the appeal of a joint venture, and minority investments do not offer any additional benefit, reducing the choices to internal development, licensing or acquisition.

EXHIBIT 5

ENTRY STRATEGIES AND TIME DYNAMICS



↙ = Transition over time

Within the marginal sectors, joint ventures offer the benefit of both partners taking advantage of the other's specific know how, with high potential synergies. Acquisitions may be potentially attractive in all marginal sectors, but in new unfamiliar markets or technologies may prevent the company from carrying out a comprehensive screening of candidates, restricting this option to new familiar market/technology sector.

Summary.

We can conclude that within familiar sectors any strategy may be adopted, although internal development and acquisitions are probably the most appropriate.

In unfamiliar areas, in order to increase the chances of success, greater familiarity should be built before entry is attempted.

As a general recommendation, a multi step approach, combining the different strategies in order to increase familiarity through low involvement strategies in unfamiliar areas, will make available a broader range of business opportunities at a lower risk than would otherwise be possible (see exhibit 5).

PART 2

PART 2. A FRAMEWORK FOR THE ACQUISITION EVALUATION
PROCESS

1. GENERAL APPROACH TO ACQUISITION ANALYSIS.

The process of analyzing acquisitions falls broadly in three stages: planning, search and screen, and financial evaluation.

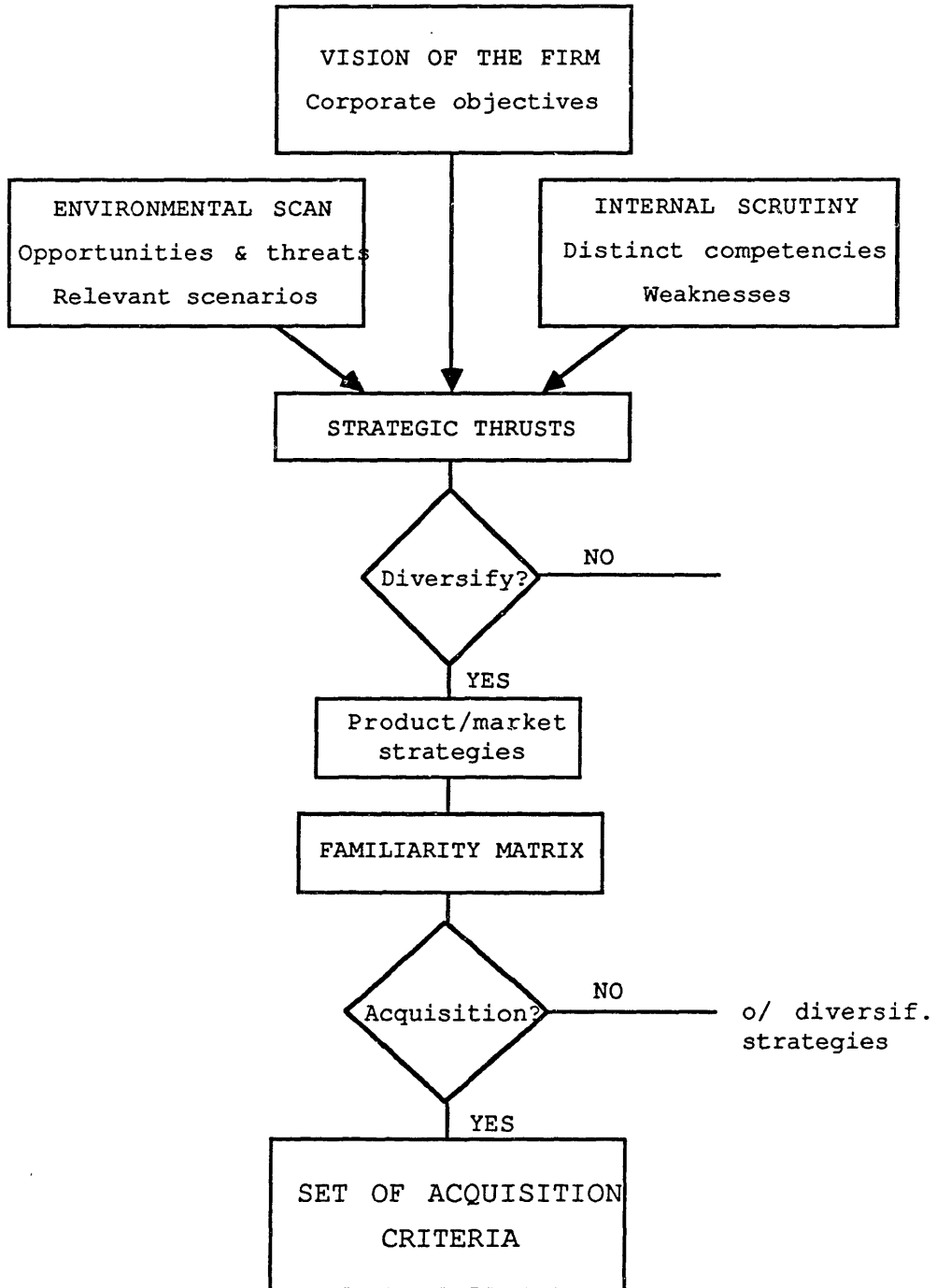
The planning stage.

The objective of the planning stage is to review the corporate objectives and product market strategies for various strategic business units in order to define the potential direction for corporate growth and diversification. The analysis has two components: a company specific study of strengths and weaknesses, and an environmental scan. This stage is fundamentally a reassessment of the strategic posture of the firm. The link to the strategy development process of the firm can be seen in exhibit 6. The output of this stage is a set of acquisition and diversification criteria.

A secondary benefit of the planning process is the establishment of a common set of beliefs and assumptions among all the managers involved that will improve the capability of the firm to react to other acquisition opportunities in the future.

EXHIBIT 6

ACQUISITION PLANNING AND THE STRATEGY DEVELOPMENT PROCESS

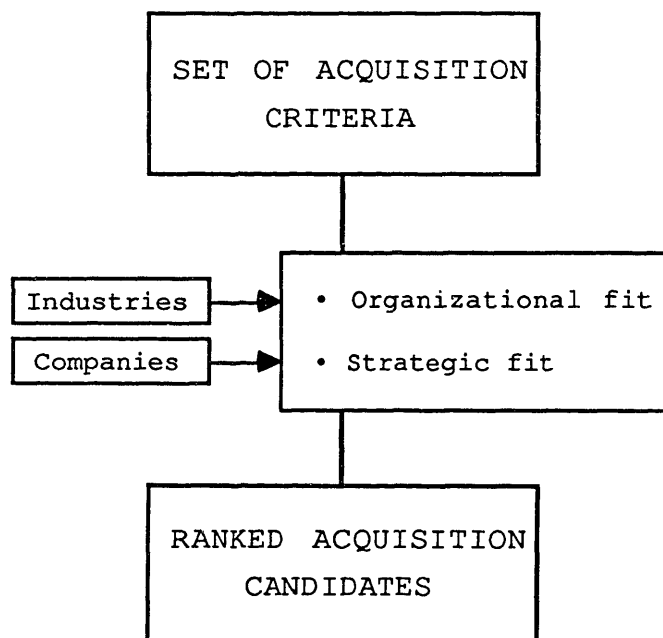


Search and screen process.

The search and screen process is a systematic approach to compiling a list of good acquisition prospects. The search focuses on where to look for candidates and the screening process selects a few of the best ones according to the objectives and criteria developed in the planning phase. The output is a list of desirable acquisition candidates (see exhibit 7).

The screening system serves also as a mechanism for communicating corporate goals and personal knowledge among the parties involved.

EXHIBIT 7
SEARCH AND SCREEN PROCESS



Financial evaluation.

The objective of the financial evaluation process is to be able to determine the maximum price that should be paid for the target company, the impact of the acquisition on earnings, cash flow and balance sheet, and the best way to finance it. An additional step might include a sensitivity analysis of all of these variables in different possible scenarios.

The process is summarized in exhibit 8, and treated with more detail in chapter 5 of part 2.

EXHIBIT 8
FINANCIAL EVALUATION PROCESS

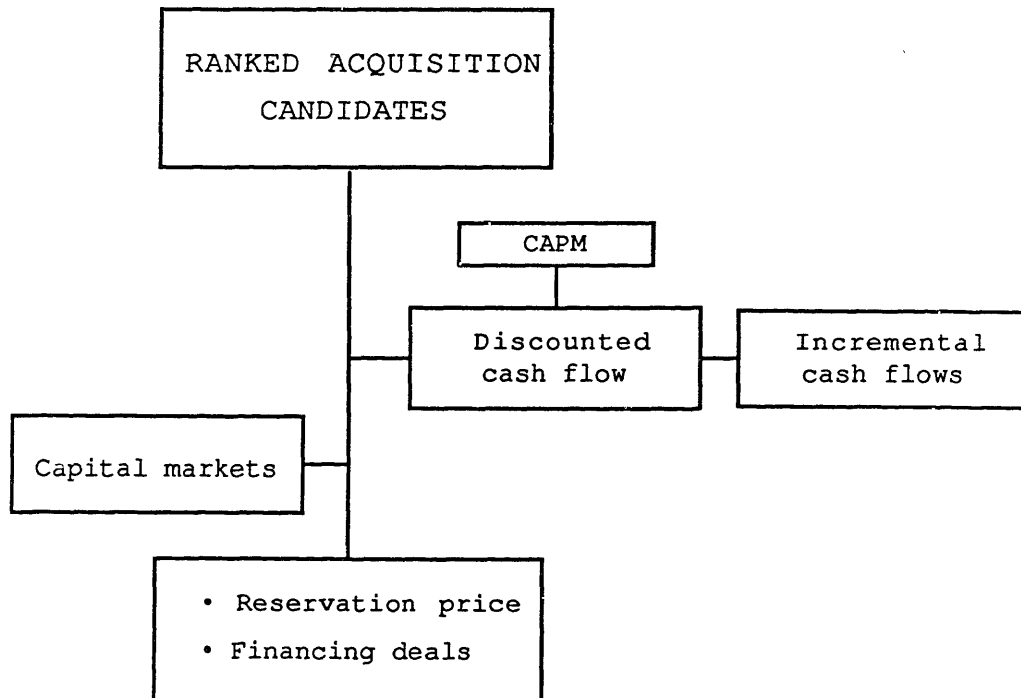
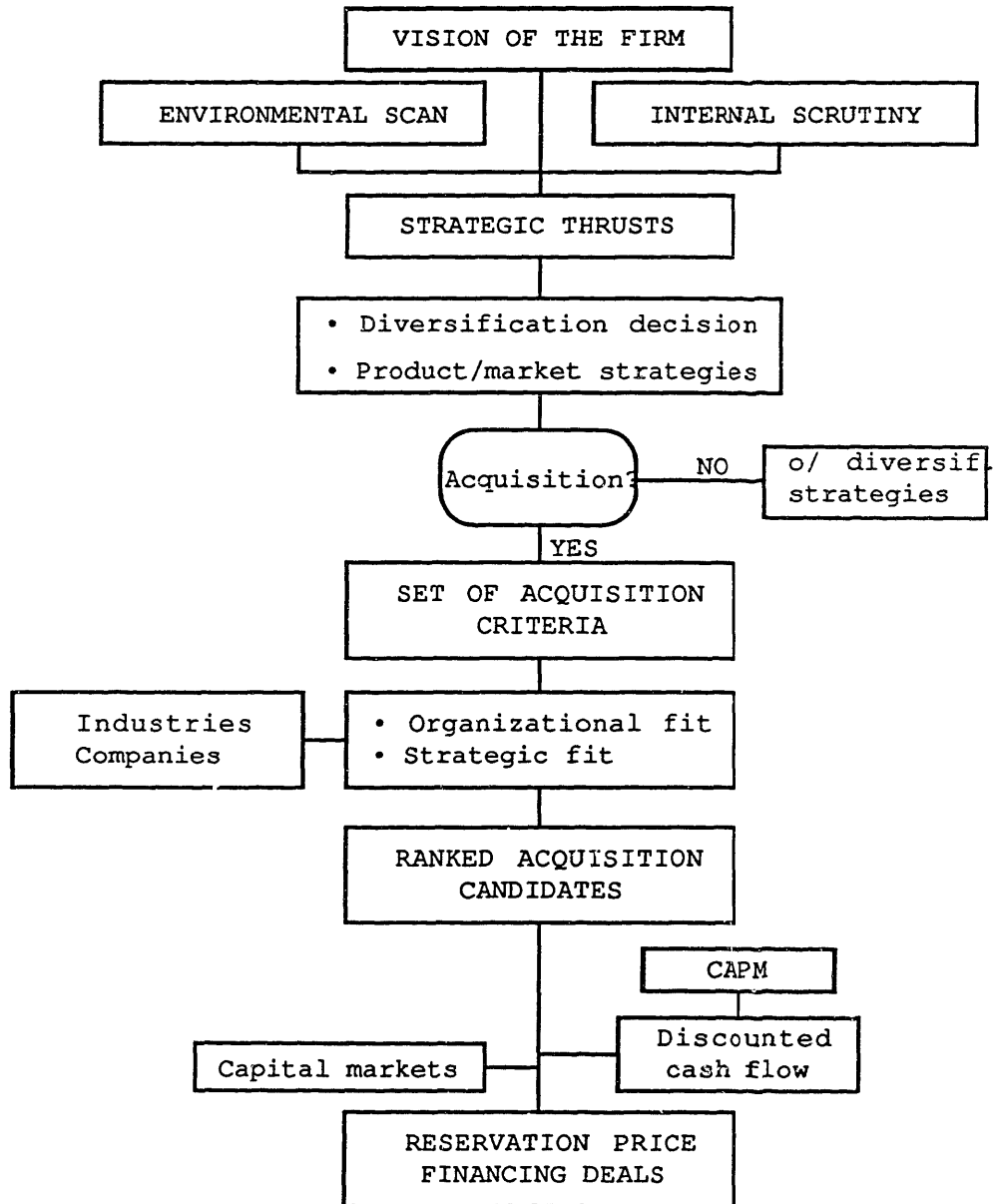


Exhibit 9 shows the integration of the three steps described above.

EXHIBIT 9

SUMMARY OF THE ACQUISITION EVALUATION PROCESS



SECTION 2

2. DIVERSIFICATION OBJECTIVES AND ACQUISITION CRITERIA.

The critical first step in developing acquisition guidelines is to perform a corporate self analysis. The guidelines can help focus attention on these acquisition candidates that have the greatest potential to fulfill a company's diversification objectives and to create value for shareholders. Assets can and do have different value in the hands of different investors, and the diversifying company can create value for its shareholders by varying the use or improving the performance of what were before underutilized assets.

Acquisitions are used for diversification into related/familiar products or markets, as argued in the previous chapter, and so the development of guidelines has to focus on the strategic fit or potential synergies between the eventual candidates and the bidder. It is intuitive that the eventual benefits stemming from operating synergies are much greater than those derived from improved financial management or capital efficiencies, although they are more difficult to implement.

A correctly developed set of criteria should include some reference to the type of markets in which the candidate should be involved, the competitive strengths that it possesses, identify potential contributions of the buyer, type of business (consumer vs. industrial), profitability, size and amount of the investment.

Finally, effective acquisition guidelines must reflect carefully thought out diversification objectives.

EXHIBIT 10. ACQUISITION GUIDELINES.

Risk/return characteristics.

- Levels of systematic risk (β -values)
- Leverage and debt to equity ratio
- Timing and size of expected cash flows

Product/market portfolio characteristics.

- Product/markets related/unrelated to existing competencies
- Consumer vs. industrial markets
- Capital vs. labor vs. marketing intensive
- Growth perspectives

Strategic characteristics.

- Proven vs. new products or management
- Required corporate involvement
- Integration/uniformity of control systems
- Key management skills required and fit with acquiring co.
- Size and positioning

3. STRATEGIC AND ORGANIZATIONAL FIT.

Value is created when diversifying acquisitions lead to a free cash flow from the combined company that is greater than what could be realized from a portfolio investment in the two companies, or whose variability is smaller than it would be with a portfolio investment in the two companies. This chapter explores the factors that contribute to value creation and that are essential to the development of an adequate set of acquisition criteria.

Definitions.

We will say that an acquisition is related supplementary when it involves entry into new product markets where a company can use its existing functional skills or resources.

Related complementary acquisitions are those that involve adding functional skills to the company's existing distinctive competence, while leaving its product-markets relatively unchanged.

Different objectives for different strategies.

The choice of a particular acquisition strategy depends on identifying the route that best uses the company's existing asset base and especial resources. When a company can export or import surplus functional skills and resources relevant to its industrial or commercial setting, it should consider related acquisitions as an attractive strategic option. Related diversification, on the other hand, requires that the new businesses or activities have a coherence or fit with the existing

business of the acquirer. Identifying the company's distinctive skills and achieving the fit are two essential activities on the way to success.

In a related supplementary acquisition, the bidder should look for a target with similar critical success variables, to build on these skills and resources.

Alternatively, if the company's strategy is to acquire new skills and talents, the target needs to have some attractive but different skills. It is clear that the two strategies will lead to a very different set of acquisition guidelines and to the selection of different candidates, and so a company pursuing a strategy of growth into related fields must decide whether to expand skills and resources into new products and markets or to add new functional skills and resources.

Looking for synergies: strategic fit.

The fit between the businesses in a portfolio can take a variety of different forms and lead to a variety of economic benefits. It can be described in terms of financial characteristics of a portfolio, complementary strategic assets, reduction of long run average costs because of scale effects and rationalization of production, etc. Whatever the basis of fit, it must reflect a concept of how to create real economic value for shareholders.

There might also be financial risk pooling benefits that may allow to develop an internal capital market that is more efficient than the external marketplace. These benefits can arise from improved cash management, more aggressive financial leverage, cross subsidization, etc.

Organizational fit.

Another set of criteria a diversifying company should consider in developing its screening program concerns the acquisition's potential for successful integration. Such criteria are especially important for a related diversifier, and this is what we call "organizational fit".

The most important variables to achieve any synergy are the existence of supplementary skills and resources, and the ability to transfer and effectively use the skills and resources of one partner to the competitive advantage of the other. A similar argument can be applied to the existence of complementary skills and resources, the focus being on improving the competitive position of the business by adding these skills.

A surplus of general management resources in either partner must always be considered a positive feature, as it allows to create value by revitalizing underused assets.

The critical issue is organizational compatibility, as the potential for value creation identified by the previous variables can only be realized by organizations that effectively exploit it. It is worth noting however that the benefits most commonly achieved have occurred in the financial area.

The realization of operating benefits accompanying diversification usually requires significant changes in the company's organizational format and administrative behavior. These changes are slow to come, but the

process can be facilitated by recognizing the need to relate the key components of a diversification strategy together.

4. SELECTION AND SCREENING OF CANDIDATES.

Once articulated, the acquisition guidelines can be used to identify attractive acquisition candidates. The screening system should provide measures of the potential for value creation for the diversifying company's shareholders, reflect the special needs of the bidder, be flexible, and serve as a mechanism for communicating corporate goals to the parties involved.

The final step in the screening process is to determine the relative attractiveness of the leading acquisition candidates. This includes both analytical work, that can be done by specialists, and analysis of non quantitative variables, such as management style, that require direct involvement of the managers responsible for implementing the program of diversification.

All members of the group or task force responsible for the formulation and implementation of an acquisition strategy should agree in a single set of widely accepted, explicit screening criteria.

The screening process will typically be iterative, gradually reducing the potential acquisition universe to a few candidates, ranked according to a largely qualitative set of criteria.

A formal acquisition screening system can help a company in several ways: it leads to widely shared assumptions about the company's strengths and weaknesses and its special needs, it develops a common language or set of concepts relevant to the diversification decision, and

it allows to thoroughly analyze the consistency between the acquisition opportunity and the company's resource structure, overall strategy, and diversification objectives. But the real question remains whether the acquisition's potential for value creation is sufficient to justify the required purchase price.

EXHIBIT 11. ACQUISITION SCREENING GRID.

<u>Risk variables.</u>	<u>Company A</u>	<u>Company B...</u>
• Business specific risk		
• Systematic risk		
• Vulnerability to changes in supply/demand		
• Ease of market entry/exit		
• Gross margin stability		
• Competitive position		
• Government intervention		
• Political risk		
<u>Return variables.</u>		
• Size of investment		
• Period of investment		
• Liquidity of the investment		
• Size of return		
• Period of the return		
• Return due to unique company characteristics.		
<u>Integration potential.</u>		
• Supplementary skills and resources		
• Complementary skills and resources		
• Financial fit: risk pooling benefits		
• Availability of general management skills		
• Organizational compatibility		

5. FINANCIAL EVALUATION.

The objective of the financial evaluation is to determine what is the maximum price that should be paid for a particular company and what is the best way to finance the acquisition. After all, shareholders' value depends on the actual acquisition price the acquiring company pays as compared with the selling company's cash flow contribution to the combined company. The size of the premiums that must be paid by a company bidding successfully calls for more careful analysis by buyers than ever before. And because of the competitive nature of the acquisition market, the companies must respond quickly as well. Sound analysis convincingly communicated can also yield substantial benefits in negotiating with the target company's management or shareholders.

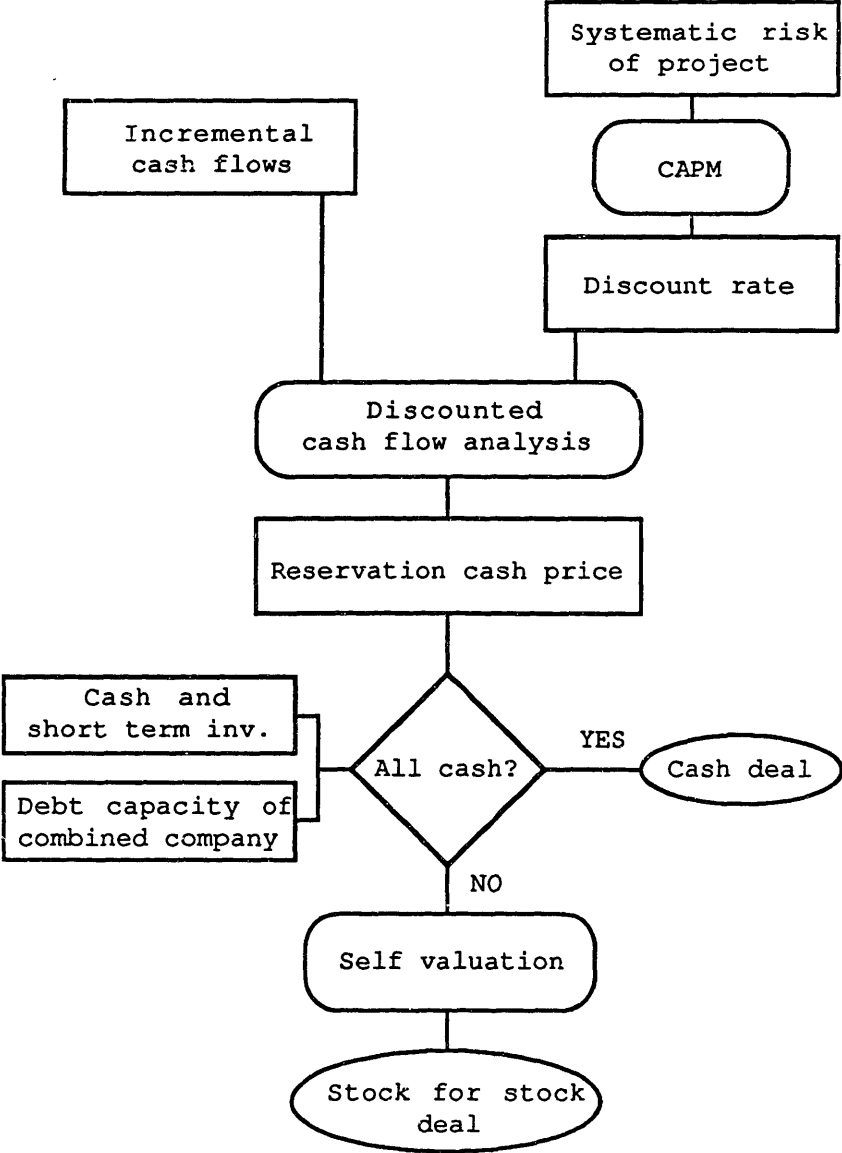
The financial evaluation process involves both a self evaluation by the acquiring company and the evaluation of the candidate for acquisition. Although it is not essential to carry out an extensive self evaluation, it can yield substantial benefits.

The fundamental questions posed by a self evaluation are (1) How much is the company worth? and (2) How will its value be affected by each of several scenarios?

The first question is a most likely estimate of the value of the company based on management's detailed assessment of its objectives, strategies, and plans. The second question is a sensitivity analysis, that allows managers to assess the value based on a range of

possible scenarios that enable management to test the joint effect of environmental forces and several product market strategies.

EXHIBIT 12. FINANCIAL EVALUATION.



The advantages of a self evaluation are obvious: it allows managers to respond to tender offers or acquisition inquiries responsibly and quickly, it may call attention on strategic divestment opportunities, and it provides acquisition minded companies a basis for assessing the comparative advantages of a cash versus an stock for stock offer.

The valuation of the target company should be done, according to the theory of modern finance, relying on the discounted cash flow technique (DCF) and the capital asset pricing model (CAPM).

To establish the maximum acceptable acquisition price under the DCF approach we need estimates both for the incremental cash flows expected to be generated because of the acquisition and for the cost of capital, that is, the minimum acceptable return required by the market for an investment with a level of risk similar to that of the project we are undertaking.

Calculating cash-flow.

The cash flow mentioned above should be total incremental cash flow, i.e. the cash flow contribution the candidate is expected to make to the acquiring company. These results are not necessarily equal to those obtained for the candidate viewed as an independent company, for there may be joint operating economies or growth opportunities not available to the selling company alone.

A simple model used to generate cash flows is shown on exhibit 13.

EXHIBIT 13. FORECASTING CASH FLOWS.

$$CF_t = S_{t-1} (1 + g_t) p_t (1 - T_t) - (S_t - S_{t-1}) (f_t + W_t)$$

where:

CF = cash flow

S = sales

g = annual sales growth rate

p = EBIT as % of sales

T = income tax rate

f = capital investment required per dollar of sales increase

W = working capital required per dollar of sales increase

t = time period

The major problem with this model is estimating the capital investment and working capital required per dollar of sales. A line manager familiar with the potential acquisition operation may give a good estimate, or one can develop his own estimates based on historical industry or company specific relationships.

In developing the cash flow forecast two additional issues need to be considered: (1) what is the horizon date, or the date past which the cash flows related to the acquisition are not specifically projected and (2) what the residual value of the company is at the horizon date.

For practical purposes we can assume that the company does not earn any abnormal returns (abnormal returns are those in excess of the cost of capital) past the initial periods, and thus its value past the horizon date

(usually 5 to 10 years) is equal to a 100% dividend payout of earnings. This is equivalent to the present value of the resulting cash flow to perpetuity beginning one year after the horizon date.

Cost of capital.

The cost of capital is calculated with the capital asset pricing model (exhibit 14). The specific level of risk of each candidate should be taken into account -whenever possible- in setting the cost of capital i.e. use company specific β -values.

EXHIBIT 14. CAPITAL ASSET PRICING MODEL.

$$k_e = r_f + \beta (r_m - r_f)$$

where:

- k_e = cost of equity capital
- r_f = risk free rate (T-bills)
- β = covariance of the return with the market
- $r_m - r_f$ = market risk premium

If there are no company specific β coefficients listed, one can use either industry averages or asset β 's adjusted for the levered firm.

The reservation price.

Finally, the cash flows should be discounted at a rate equal to the average cost of capital. The present value of this stream of cash flows equals the reservation price.

Once the price has been determined, it is necessary to analyze the feasibility of a cash purchase. The maximum

funds available for the purchase of the target equal the post merger debt capacity of the combined company minus the premerger debt of the two companies plus the temporary investments of the two companies (working capital not required for everyday operations).

Exhibit 15. AVAILABLE FUNDS.

+ cash and short term securities of both companies	
- combined premerger debt	
+ postmerger debt capacity	
<hr/>	
= Total funds available	

When the funds available are bigger than the agreed price, it is possible to proceed to an all cash deal. If a cash purchase is not feasible because the price is bigger than the available funds, then it is necessary to study the possibility of a stock-for stock acquisition.

A stock-for-stock deal involves the following additional analysis: (1) estimate the value of the bidder's shares (2) determine the maximum number of shares that can be exchanged (stock reservation price) and (3) evaluate the impact of the acquisition on the bidder's capital structure and financial statements.

6. SUMMARY.

The experience of companies that have implemented this or a similar approach to acquisition analysis is that not only is it an effective way of evaluating a prospective acquisition candidate but also serves as a catalyst for reevaluating a company's overall strategic plans. It will also enable management to justify acquisition recommendations to the board of directors in an economically sound, convincing fashion.

When this approach is applied for initial screening of potential candidates, input estimates are quickly generated to establish whether the range of maximum acceptable prices is greater than the current market price -or the market price plus the estimated premium required- of the target companies.

Use of the framework outlined above should improve the prospects of creating value for shareholders by acquisitions.

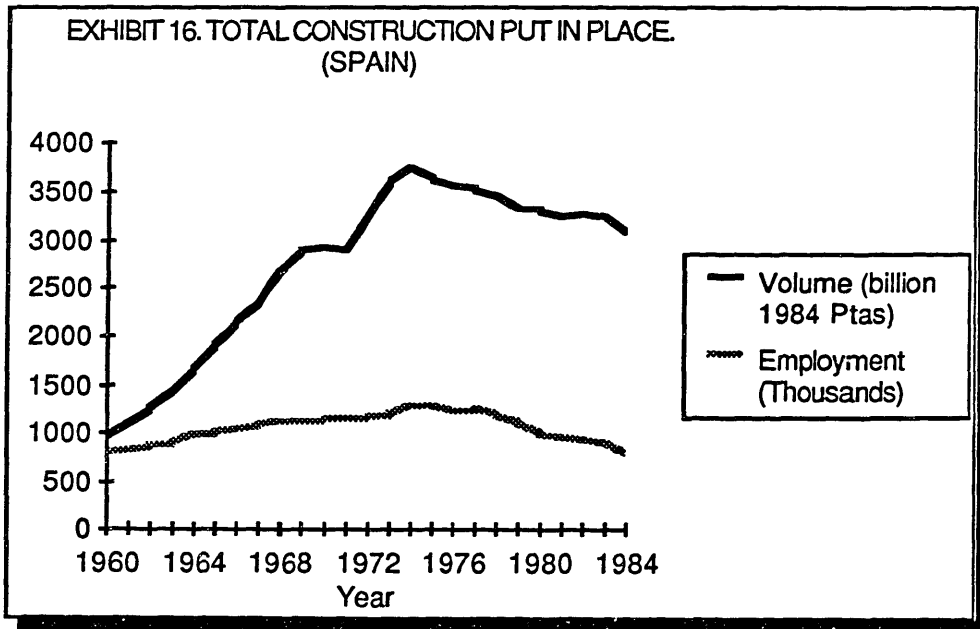
PART 3

PART 3. CASE STUDY.

ENVIRONMENTAL SCAN

1. OVERVIEW OF THE SPANISH CONSTRUCTION MARKET.

The only data available about the Spanish construction market is the historic total volume contracted on a yearly basis. There are no forecasts available to the public either.

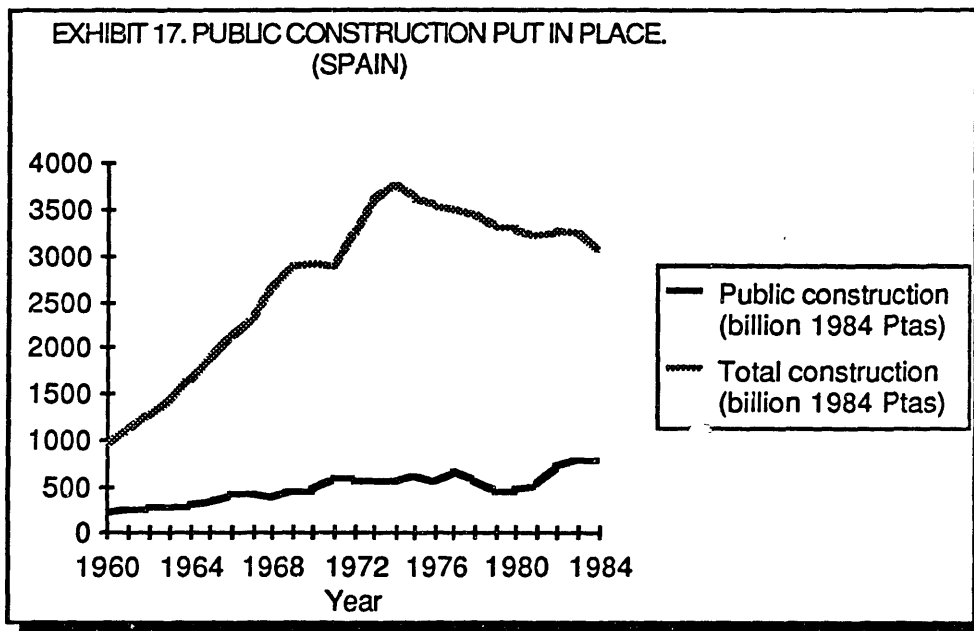


As can be seen in exhibit 16, total construction put in place in Spain grew continuously from 1960 until 1974, the volume in 1974 being 3.78 times that of 1960 in real terms (equivalent to a cumulative annual rate of 10%). In the past ten years, since the all time peak of 1974, total construction put in place has decreased

continuously, except for a brief and weak recovery in the 1982-83.

Total volume in 1984 was approximately 80% of that of 1974, measured in real terms. It is worth noting that construction was the only domestic industry to decrease in absolute terms in that period. In 1986 total volume is expected to decrease even further, approximately to a level equivalent to 75% of the all time high of 1974.

There are no objective reasons to expect any recovery in the short run, and the scarce demand and excess capacity are the cause of a fierce competition in the domestic market. Labor regulations limit and make very expensive employee layoffs, and that increases the barriers to exit and contributes to slow down the long term adjustment to a weaker market.



The estimated government expenditures in construction projects are shown on exhibit 17. They show continuous growth up until 1975, with a steady decline from 1976 to 1981, and a brief recovery thereafter. The 1985 and 1986 levels are expected to be lower than that of 1984. Government expenditures account for only 25% of the market but represent 85% of Ferrovia's sales and present backlog.

2. ANALYSIS OF COMPETITORS (SPAIN).

Exhibit 18 summarizes the relevant data of three of Ferrovial's main competitors corresponding to fiscal year 1984. Ferrovial ranks sixth in sales in the industry, but the other two missing are private companies and thus their accounting data are not made available to the public. H&C, another major competitor privately held, was acquired by a foreign investment group based in Illinois in 1985 for a nominal price of \$0.01 per share. Had not been acquired, it would probably have filed for bankruptcy. The acquisition deal involved a complete renegotiation of its debt with private banks and the government.

EXHIBIT 18.

FINANCIAL DATA OF COMPETITORS

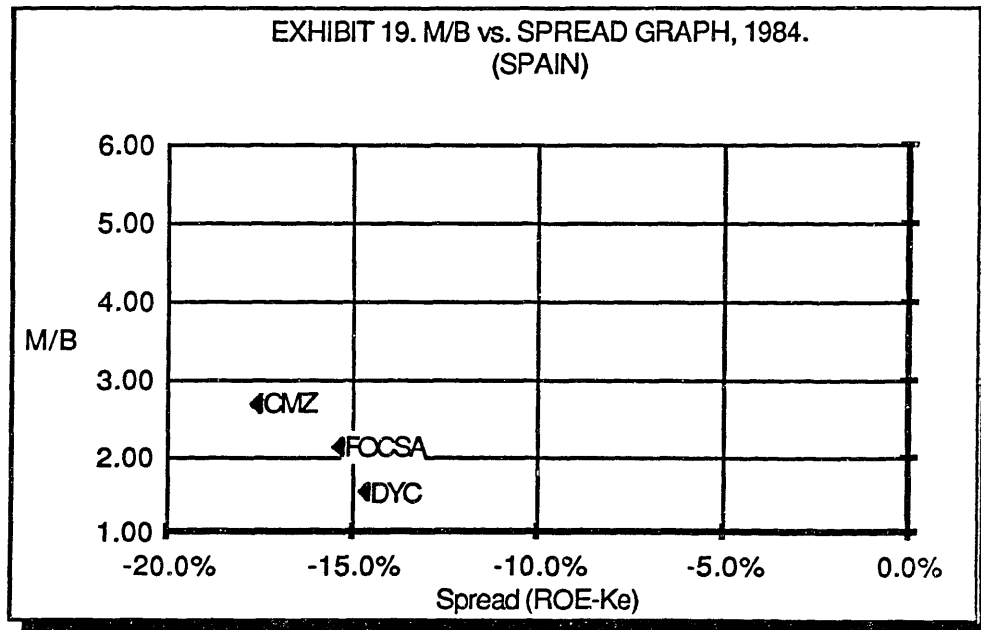
(FYE 1984, Ptas million)

	<u>DyC</u>	<u>CMZ</u>	<u>FOCSA</u>
Revenues	110,000	55,910	46,716
Net income	1,439	352	508
Equity	19,339	7,776	7,553
ROE (%)	7.44	4.53	6.73
M/B	1.53	2.70	2.13

Exhibit 19 contains a market-to-book versus spread graph of these competitors. It is worth noting that although all the companies posted accounting gains in the past few years, none managed to create value. Their return on book value equity was even lower than the riskless interest rate and thus the spread always negative.

Ferrovial's financial data are not disclosed, but it managed to create value in that period.

The market to book value corresponds to the average daily stock price on December 31, 1984.



The cost of equity capital has been computed from average industry and market data (there are no β -values available), according to the following criteria:

1. Average market risk premium, computed from the Madrid stock exchange historical data 1940-1975, $R_m - R_f = 5\%$.
2. Average β -coefficient equal to that of the U.S. construction industry, 1966-1974, $\beta = 1.27$.

3. Riskless interest rate equal to the three month interbank rate in 1984, $R_f = 15\%$.

Applying the capital asset pricing model formula to these data results in an average cost of equity capital equal to:

$$K_e = R_f + \beta (R_m - R_f) = 0.15 + 1.27 \times 0.05 = 0.214$$

$$K_e = 21.4 \%$$

From this analysis, the perspective on the domestic market is even bleaker than before because although all the companies have a M/B value bigger than 1, their spread is noticeably smaller than 0.

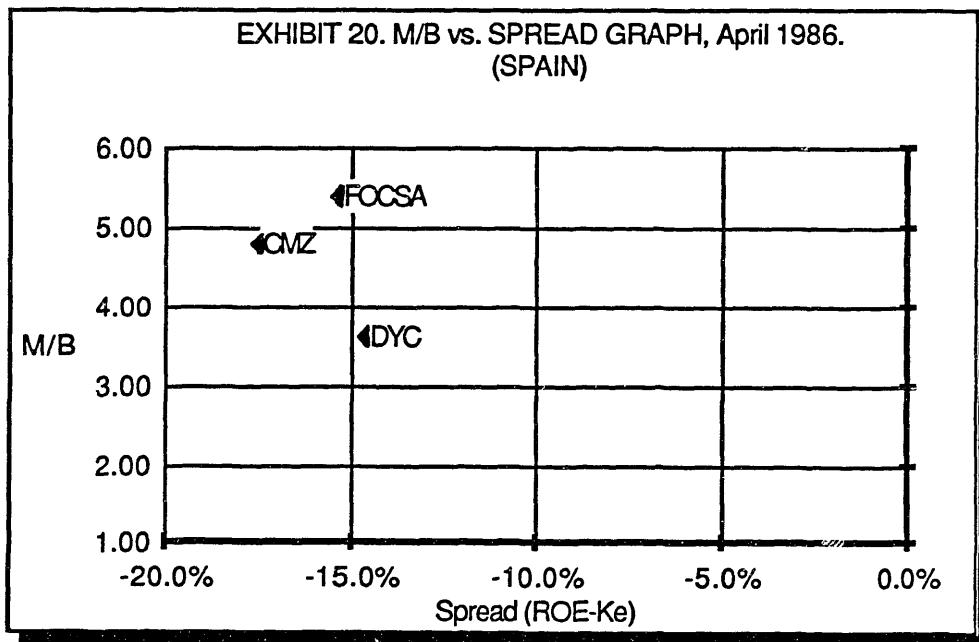
Since January 1986, and probably due to a combination of the decline of oil prices, the reduction of interest rates, and the relative liberalization of the Spanish capital market as a consequence of the entrance in the CEE, the Madrid stock exchange index is up 70% as of April 23. The M/B values of the three companies mentioned above have changed as follows:

	<u>DyC</u>	<u>CMZ</u>	<u>FOCSA</u>
M/B April 86	3.62	4.18	5.40

The new M/B graph, keeping ROE constant (there is no evidence to expect major increases in net income), is shown in exhibit 20.

The amazing results obtained induce to think that either the capital market is not efficient or that the industry forecasts are unrealistic. Another possible and more

credible explanation is that the book value of the assets is grossly understated as compared to their replacement cost, due to the high past inflation rate and the use of accelerated depreciation methods to reduce taxes payable. Unfortunately, there are no data on the liquidation value of these assets.



3. INTERNATIONAL OUTLOOK.

In contrast to the prosperity and expansion of the international construction activity during the 1970's, the 1980's have brought to the companies of industrialized countries increased competition in a declining market. The worldwide recession, the downturn in oil prices and oil demand bringing cash flow problems within OPEC, the decline in loans to developing nations, and increased competition from less developed countries, especially Korea, Brazil, Turkey and India, have tightened the conditions in the international arena.

Potential customers are encountering increasing problems in arranging for financing of projects. International contractors are often finding necessary to include financial packages when making bids for projects. Some governments also offer subsidized lines of credit to domestic contractors, making more difficult for others to compete.

Falling commodity prices, debt problems of developing countries, and intensifying competitive pressures in a shrinking market combine to cloud the outlook for the international construction market in 1986. No improvement over 1985 is expected.

Economic recovery abroad is expected to be slow. Falling commodity prices will make recovery more difficult for developing countries, most of which rely on commodity exports to service debt. Although lower interest rates have mitigated commodity price declines, lower cash

flows will cause many governments and private concerns to defer planned projects.

The decline in commodity prices will particularly influence the incidence of new projects in the Middle East.

Prospects could improve in Latin America. Although debt problems will continue to slow recovery, the worst of the business decline may have passed.

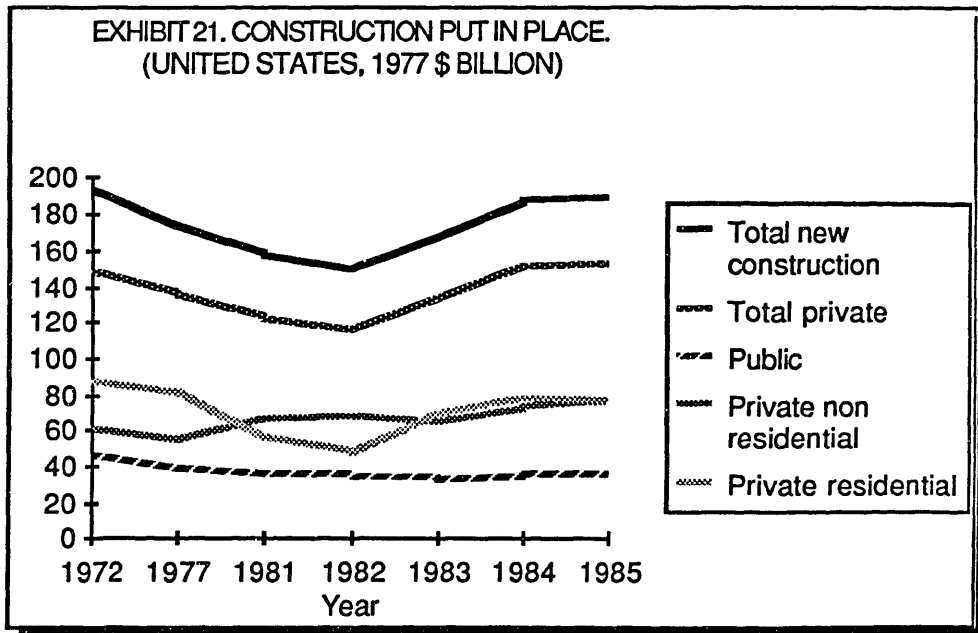
Explosive population growth abroad, especially in the developing countries, and concentration of people in urban areas will create the need for additional infrastructure and suggest vast potential for the international construction industry over the long term.

With economic support from the world community and proper planning, developing countries should regain momentum, offering expanding opportunities to international contractors.

4. THE US CONSTRUCTION INDUSTRY.

In the past several years, a large number of foreign owned construction firms have entered the US market because of declining business elsewhere. The U.S. market is not only the world's largest, but also one of the healthiest and less restricted. Most of the foreign entry has been by way of acquiring existing U.S. firms rather than establishing new businesses.

Exhibit 21 shows the evolution of total construction put in place in the past fourteen years. The value of domestic construction put in place in the US, deflated, had a compound annual growth rate of minus 1.3% from 1972 to 1983. From 1983 to the present, total construction put in place has grown at a healthy annual rate of 6%.



During the past decade, several categories of construction not included in new construction have grown rapidly. Among these are maintenance and repair, commercial and industrial renovation, hazardous waste clean-up, and oil and gas development.

1985 on perspective.

In 1985, for the third consecutive year, total new construction increased sharply, to a current-dollar value of \$340 billion. The dollar value, after adjusting for inflation, was 6 percent higher than in 1984, and exceeded the previous peak year of 1973.

The value of residential construction was about the same as in 1984, although the pace of homebuilding accelerated during 1985. Private nonresidential construction exceeded the record level set in 1984 by 10 percent, largely on the strength of the commercial building boom. Public works construction increased by 9 percent, with gains in most types of public works.

The value of new construction put in place in 1985 was equal to approximately 8.9% of GNP. This represents a solid increase from 8.5 percent of GNP in 1984 and 7.9 percent in 1983, but is well below the 1966 ratio of 11.9%.

Outlook for 1986.

The constant dollar value of new construction put in place in the United States will increase by about 6 percent in 1986, to set an all time record. Homebuilding, especially the construction of single family homes, will increase as interest rates decline

further. Nonresidential construction will also gain, especially commercial industrial buildings and highways.

Long term prospects.

During the rest of the decade the value of new construction is expected to grow to record levels. The fastest growing market category will be private non residential construction, especially industrial construction. Although new houses starts will average only about 1.75 million units a year, the average size per unit will increase slightly. Public works construction has ended its long term decline and will grow steadily for the rest of the decade.

EXHIBIT 22.

LONG TERM FORECAST FOR NEW CONSTRUCTION

(Value put in place, 1977 \$ billion)

	<u>1985</u>	<u>1989</u>
Total new construction	189.5	212
Private residential	75.8	84
Private non residential	77.1	89
Public	36.6	39

In the aggregate, construction will increase at an average annual rate of about 2.5 percent between 1985 and the end of the decade. By 1989, the level of construction is expected to exceed the 1972 record level by 9 percent.

5. ANALYSIS OF COMPETITORS (U.S.).

The momentum of the nation's strong economic recovery carried over into 1985, as the country's largest contractors were awarded more new business for the second consecutive year. There was a 7 percent increase in U.S. contracts, fueled by a surge in new transportation work and strong commercial markets.

Foreign work, affected by the impact of weaker overseas markets for petroleum and natural resource processing facilities, was reduced by 7 percent compared to 1984 levels.

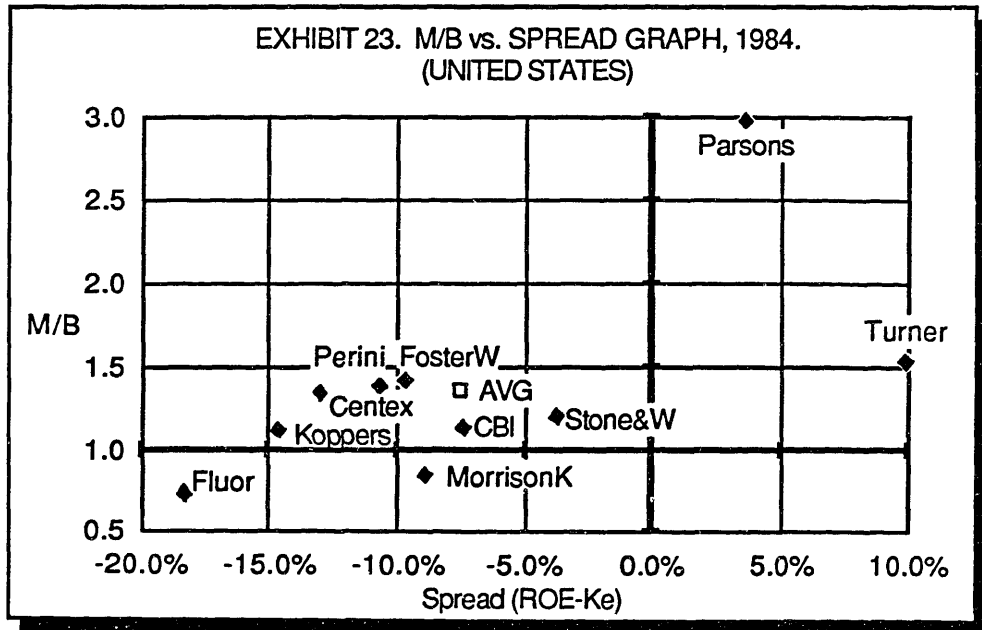
The squeeze abroad, combined with a weak process plant and utility markets in the U.S., meant more competition at home and lean profit margins. This triggered a boost of reorganizational efforts by many of the country's largest builders. Many restructurings were aimed at consolidating operations, shedding fat and focusing traditional company strengths on emerging markets. Some acquired other firms to complement existing construction capabilities.

Exhibit 23 shows a market-to-book value ratio versus spread graph for ten of the top 40 public contractors based on their December 1983 financial statements. The following table shows their ranking in the U.S. according to 1984 sales in different market segments.

Name	Overall	D/C	C/M	BLDG	H/C
Fluor Corp	2	2	15	2	8
Parsons Corp.	4	5	1	-	-
Stone & Webster	8	10	4	-	46
Foster Wheeler	9	9	-	-	-
Turner Corp.	11	-	34	1	-
Morrison Knudsen	12	11	11	26	7
Perini Corp.	19	-	-	4	16
Centex	23	-	38	5	-
CBI Industries	36	19	-	-	-
Koppers Co.	50	-	-	-	5

D/C: Design-Construct
C/M: Const. Management

BLDG: Building
H/C : Heavy Const.



The β -coefficients for risk adjustment in the CAPM model were obtained from Merrill Lynch's "Security Risk Analysis", Jan. 1984 edition. All the firms were individually listed and there has been no need for leverage adjustment.

The cost of equity capital K_e has been calculated using the capital asset pricing model (CAPM), described in exhibit 14.

In 1983 the risk free rate was 8 percent and the average historical value of the market risk premium (1926-1981) is 8.3 percent.

It is worth mentioning that although all of the firms reported accounting profits in 1983, only Parsons and Turner had a positive spread ($ROE - K_e$) and thus economic profit.

All the companies, except for Fluor and Morrison Knudsen have a market-to-book value ratio bigger than one. As their spread is negative in most of the cases, this means that the market expects them to perform better in the future than in 1983. The overall improvement in 1984 confirms this hypothesis, as there has been an average increase in ROE of more than two percentage points.

EXHIBIT 24.1.

U.S. COMPETITORS: 1983 FINANCIAL STATEMENTS (\$,000)

<u>BALANCE SHEET</u>	<u>CBI</u> <u>INDUSTRIES</u>	<u>CENTEX</u> <u>CORP.</u>	<u>FLUOR</u> <u>CORP.</u>	<u>FOSTER</u> <u>WHEELER</u>	<u>KOPPERS</u> <u>CO.</u>
<u>ASSETS</u>					
Cash & Marketable Secs.	197491	21118	145713	241404	118314
Accounts Receivable	134967	179019	421642	305196	223424
Inventories	11266	463555	159052	28126	144830
Other Current Assets	35839	255178	419596	97341	40759
Net Plant & Equipment	279077	129128	2379833	81895	459907
Investments & o/Assets	258412	21102	559084	154343	188180
Total Assets	917052	1069100	4084920	908305	1175414
<u>LIABILITIES and EQUITY</u>					
Accounts Payable	39989	225445	355518	117078	68649
Other Current Liab.	269192	0	734637	364414	176326
Long Term Debt	2555	78082	720007	23832	232897
Deferred Tax & o/Liab.	139880	354357	527509	30184	143065
Stockholders' Equity	465436	411216	1747249	372797	554477
Total Liabilities	917052	1069100	4084920	908305	1175414
<u>INCOME STATEMENT</u>					
<u>REVENUES</u>	876194	1183261	5300452	1540853	1565670
<u>EXPENSES</u>					
Cost of goods sold	712152	1067103	5017777	1346008	1356829
G & A Expenses	91734	5870	47200	134908	161398
Interest Expense	3523	25025	63675	4711	26440
Other Expense	4098	866	0	-20636	-17311
Tax	20577	33587	91100	31649	15406
<u>NET INCOME</u>	44110	50810	80700	44213	22908

EXHIBIT 24.2.

U.S. COMPETITORS: 1983 FINANCIAL STATEMENTS (\$,000)

<u>BALANCE SHEET</u>	MORRISON <u>KNUDSEN</u>	PARSONS <u>CORP.</u>	PERINI <u>CORP.</u>	STONE & <u>WEBSTER</u>	TURNER <u>CONS.Co.</u>
<u>ASSETS</u>					
Cash & Marketable Secs.	6940	340202	41625	86770	22147
Accounts Receivable	180168	78610	110519	119841	7648
Inventories	0	0	0	0	0
Other Current Assets	367155	26917	42042	68863	382347
Net Plant & Equipment	246054	65242	34284	157532	16240
Investments & o/Assets	58705	14494	61025	24835	7147
Total Assets	859022	525465	289495	457841	435529
<u>LIABILITIES and EQUITY</u>					
Accounts Payable	254210	66257	87080	32834	299018
Other Current Liab.	126986	225375	60127	144656	77373
Long Term Debt	79848	20022	13172	18365	0
Deferred Tax & o/Liab.	72509	9272	23977	20962	9012
Stockholders' Equity	325469	204539	99139	241024	50126
Total Liabilities	859022	525465	289495	457841	435529
<u>INCOME STATEMENT</u>					
<u>REVENUES</u>	2165987	864486	859450	994296	1777891
<u>EXPENSES</u>					
Cost of goods sold	2033459	707568	807909	664531	1709940
G & A Expenses	53456	68731	37157	254330	48111
Interest Expense	10364	1810	-355	2142	0
Other Expense	0	0	-609	16027	0
Tax	27196	40600	5443	27834	8433
<u>NET INCOME</u>	41512	45777	9905	29432	11407

6. SUMMARY OF THE ENVIRONMENTAL SCAN.

As we have seen in the previous chapters, the Spanish construction market does not look very attractive in the short term, and its long term perspective, although better (it cannot be worse!), is highly uncertain.

The U.S. market future looks good in spite of increasing competition. Its average profitability is one of the world's highest, and the political stability of the U.S. together with its growth perspectives make it most attractive.

The rest of the world does not have a very promising future except for China, a market that might still take years to develop, and Latin America, with its financial and political uncertainties.

VISION OF THE FIRM AND INTERNAL SCRUTINY.

7. BRIEF HISTORY OF FERROVIAL.

“ Ferrovial was founded in 1952, starting as a supplier of sleepers to the Spanish National Railway Co. During its first ten years of existence, it expanded and consolidated its position in its base business, the construction and conservation of railways and related activities.

During its second decade, and reacting to a decline of the importance of the railway network and related investment, Ferrovial entered new markets: roads and highways, hidraulic works, including water supply, sewage and irrigation systems, and started into the residential and industrial building activities, that now account for 40% of all domestic work.

In its third decade, it continued to expand into related activities, such as airports, harbours, and gas pipelines, and entered the international arena, concentrating its efforts in Latin America and the Middle East. Ferrovial also entered with success into new markets during that period, such as real estate, toll roads, engineering, and even gambling (!), through the construction and management of a casino in the southern coast of Spain.

At present the international work is declining. From a peak of approximately 30% of sales in 1981-82, it has decreased now to 10% of the backlog. This is due to the end of the activities in Kuwait and the lack of new

contracts in Libya, that was by far the most developed market.

Domestic backlog, on the other hand, is an all time high at more than \$500 million, in spite of the tough competition in the declining domestic market, but the long term perspectives for growth are scarce without an important participation in the international markets.

8. VISION OF THE FIRM.

Ferrovial is a firm primarily engaged in construction activities, both building and heavy construction, whose objective is to become a major force in the domestic construction market and have extensive international presence, in order to be able to offer the career opportunities that are necessary to attract the talent it needs to continue to offer superior returns to its shareholders, and to fulfill its role as a catalyst for the progress of society.

9. INTERNAL SCRUTINY OF FERROVIAL AND POTENTIAL SYNERGIES
WITH AN EVENTUAL U.S. PARTNER.

Ferrovial is a cash rich company, having now over \$54m in cash and short term investments, on sales of about \$300m per year, due to the lack of investment opportunities at home. This cash allows a substantial increment of the partner's bonding capacity, which usually is an active growth constraint. In addition to that, FerroviaI can provide access to capital markets to finance that eventual growth.

Through its own technical staff and through an engineering consulting company in which it has a controlling interest, FerroviaI can provide technical know how, both for cost improvements on fixed cost contracts, and to facilitate entry into the design construct arena. This technical knowledge is available to small and medium sized companies at a high cost and on a limited number of opportunities.

There is a surplus of management skills and organizational capability at FerroviaI that may improve the productivity of the target's assets. Small companies also may benefit from the implementation of a rigorous and effective control system, as the one used in FerroviaI's current operations.

Finally, as a result of becoming a multinational company, the holding company may achieve tax benefits unavailable to either of the two partners alone, through an adequate capital structure, transfer pricing of services, and dividend policy.

The U.S. partner will provide the necessary elements to reduce the entry costs, as compared to an internal development strategy. Essentially, what Ferroviaal buys is managerial talent with working knowledge of the local market, in the form of a working organization, reputation, and backlog. The first asset is very volatile and it is necessary to make sure that key managers stay and do not take off after the acquisition. This can be accomplished through stock option plans and will be discussed later.

STRATEGIC THRUSTS AND ACQUISITION CRITERIA

10. STRATEGIC THRUSTS.

The vision of the firm calls for expansion in the domestic and world markets, in order to create a dynamic environment within the company that will make it, and hopefully keep it, internationally competitive.

As we have seen in the environmental scan, the most attractive market in the world is that of the U.S. for its profitability, its growth perspectives, for the political stability of the country, and for sheer size.

Ferrovial is already pursuing an active search for investment opportunities at home, both in construction activities and in other related markets, but the potential there is limited.

The company has both the financial resources and the managerial skills needed to pursue profitable activities abroad, where it can find opportunities for long term growth and value creation. The most promising foreign market is that of the U.S., and to diversify geographically into it has to become a major strategic thrust.

11. TWO POSSIBLE APPROACHES.

The U.S. construction market is a new familiar market in which Ferroviaal will apply its base technologies and services. According to the analysis performed when discussing the familiarity matrix, two approaches are recommended: internal development and acquisition.

The internal development alternative is not viable in this case due to its high start up cost, the time required to produce results, and the high uncertainty of the outcome. On the other hand, there are some interesting opportunities for synergy between Ferroviaal and a U.S. contractor that open the road for a profitable acquisition.

We can contemplate two different acquisition strategies for entry into the U.S. market, bearing in mind that this market is becoming increasingly specialized.

Strategy 1.

This strategy is based on a related supplementary acquisition, targeted to exploit actual key strengths of Ferroviaal. About 60% of Ferroviaal's revenues, and a substantially higher percentage of net income, come from public heavy construction. This strategy will involve the acquisition of a heavy construction company, specialized in highway, water supply, sewage, and other public works done for entities such as the Federal Government, State Governments or other Agencies.

Strategy 2.

The second approach involves a related complementary acquisition that will allow to exploit the basic financial synergies, but with a limited scope for operating synergies. The target company should preferably be engaged in private non residential construction, and particularly in industrial building construction, that is the segment with the most promising future. The experience acquired in this field might also be exported to Spain at a later date.

The eventual payoffs of both strategies are very similar. Industrial building construction is expected to have higher growth and slightly higher margins, and heavy construction is more capital intensive and thus more sensitive to economic downturns. This in turn increases barriers to entry, that are extremely low in residential construction, low in non residential building, and higher in heavy construction. Also, the potential synergies of an investment in a heavy construction company more than offset its lower market attractiveness.

EXHIBIT 25

PROBABILITY OF ACHIEVING SYNERGIES

	<u>Strategy 1</u>	<u>Strategy 2</u>
Financial/control synergies	high	high
Design/operating synergies	high	uncertain

In addition to that, the technical risks involved in the acquisition of a builder are higher both because Ferrovial's experience in this field is much more

limited and so is the assistance it can provide to the target, and because reputation and goodwill are very important assets for these companies, making their evaluation more difficult and their value more volatile. On the other hand, a heavy construction company has a higher percentage of tangible assets, namely construction equipment, whose valuation is far easier and certain.

As a summary we can conclude that the payoff structure of both strategies is comparable, the risk involved in the valuation process is lower in strategy 1, and the potential synergies are bigger and easier to attain in strategy 1 also. All of this makes the acquisition of a heavy construction company more desirable.

Strategy 1 can also serve as a first step into the U.S. market: once Ferrovial has increased its familiarity with the new environment it can proceed in a sequence of complementary acquisitions (or joint ventures with future acquisitions), concentrating in the most promising markets. This two step approach reduces the risks of a direct entry into a relatively unfamiliar field and offers a greater chance of success.

12. ACQUISITION CRITERIA.

The environmental scan, together with the internal scrutiny of the firm and the analysis of the different acquisition strategies, make a relatively simple task the development of the following acquisition criteria, that are a direct consequence of all the analysis performed before.

- The company should be engaged primarily in construction activities, preferably in heavy construction. Non residential building, and especially industrial construction, are also attractive alternatives.
- Within the United States, the South, especially the South Atlantic States, and the West are considered the most attractive geographical areas. New England ranks third overall.
- Ferrovial should be able to purchase at least 70 to 80% of the outstanding stock of the company, with the rest of the shares owned by management. This is absolutely necessary in order to exercise control over the company, enjoy the added management flexibility derived from the avoidance of public reporting, and be able to achieve the tax savings through adequate transfer pricing and capital structure policies.
- Private companies are preferred to public corporations, as acquisition of a controlling majority is easier. If the required premium is available

candidates is very high, alternative tender offers for public companies may be worth the additional effort.

- The size of the initial investment is in the \$15m to \$20m range. As average margin on sales is 1.5%, and the average P/E ratio is 9, the sales of prospective candidates will be up to \$150m or \$200m, assuming Ferrovia buys 70% of the stock, and pays a premium of 20% over market value.

$$\$20m / (9 \times 1.2 \times 0.70) = \$2.65m \text{ net income}$$

$$\$2.65m / 0.015 = \$175m \text{ sales}$$

- The candidate should have a proven management team that will continue the company's activity and make it profitable without extensive corporate management intervention. This implies that key managers have to be willing to stay after the takeover, and that they should know about it before closing the deal.
- The candidate should be able to generate positive cash flow from operations since year one, although Ferrovia will be willing to facilitate additional funds to fuel growth.
- The primary decision variable should be whether the acquisition is or is not a sound investment, i.e. whether or not it is a positive net present value project and thus creates value for shareholders.

SEARCH AND SCREEN PROCESS

13. SCREENING OF CANDIDATES.

“
Within the size constraints mentioned in the acquisition criteria, there are four candidates available for sale worth a first study, namely Slattery Group, GBH Macomber, Williams & Burrows, Inc., and C.W. Driver.

What follows is a description of each of them ordered according to the dimensions that I considered more relevant vis a vis an acquisition, bearing in mind the criteria developed in the previous chapter. After that there is a brief discussion from which only one candidate is selected.

ACQUISITION SCREENING GRID

PRODUCT/MARKET PORTFOLIO CHARACTERISTICS

- Product/service scope
- Geographical scope

FINANCIAL CHARACTERISTICS

- Select financial data
- Capital structure
- Sale price

INTEGRATION POTENTIAL

- Supplementary skills and resources
- Complementary skills and resources
- Management skills

SLATTERY GROUP, INC.

PRODUCT/MARKET PORTFOLIO

• Product/service scope.

Heavy construction, with the bulk of its present work and backlog with state and city governments and public authorities.

Most of backlog are sewage and mass transit projects, generally obtained through competitive bidding.

Most frequent projects are either lump sum or fixed unit price, where price and being qualified to carry out the job are the key success factors.

• Geographical scope.

The company is incorporated in New Jersey, but the main offices are in Roslyn, New York.

Historically it has performed 50 to 70% of its work in New York City, with the rest concentrated in the major urban areas across the United States.

FINANCIAL CHARACTERISTICS.

• Select financial data.

(\$,000)	<u>1984</u>	<u>1983</u>
Revenues	139214	146219
Net income from cont. ops.	2653	2405
Cash flow from operations	4719	4590

• Capital structure.

Slattery is a public company listed in the New York Stock Exchange. Power Test Corp. holds 33% of the common stock outstanding, Kimco Corp. 8% and State Farm Mutual Auto Insurance Co. 7%. Insiders control 3%. Has completed in 1985 a \$5m repurchase of stock @ \$26/share.

- Sale price.

If management is buying back stock at \$26/share, the minimum selling price of the whole company would be \$40.2 million. Current market value (5/5/86) is \$37.9 million, book value \$43.8 m.

INTEGRATION POTENTIAL.

- Supplementary skills and resources.

Slattery competes in a market very similar to that of Ferrovia, although it specializes in urban work. Most of Ferrovia's skills both in engineering and in low cost construction can be applied to Slattery's work.

- Complementary skills and resources.

Ferrovia could learn from Slattery underwater tunnel construction (although that unit is independent and may be sold separately), and work in congested urban environment. Similarly, Slattery can import design and highway construction know how.

- Management skills.

Slattery has 200 permanent employees and the maximum number of seasonal employees in 1984 was 1620. Their performance has been average, and management skills should be considered adequate. Most of the managers are apparently willing to stay if no substantial changes are made.

G.B.H. MACOMBER CO.

PRODUCT/MARKET PORTFOLIO

• Product/service scope.

Building, both residential and commercial, mostly with private customers. It has been very strong in Hospitals in the past, although it is a declining market. They have no industrial customers.

Most frequently the projects are negotiated, either in competitive selection or as sole source. Price is less important than build quality or service to the customer; Macomber calls itself a "quality builder".

Projects are obtained through personal contacts and networking. Approximately half of the current customers are repeat customers. Most of the others are referees from previous clients.

• Geographical scope.

The company is incorporated and has its main offices in Boston, Massachusetts.

Historically it has performed most of its work in Massachusetts, and none of it out of New England.

FINANCIAL CHARACTERISTICS.

• Select financial data.

(\$,000)	<u>1984</u>	<u>1983</u>
Revenues	110793	106574
Net income from cont. ops.	841	1066
Cash flow from operations	1345	1537

• Capital structure.

Macomber is a privately held company, and the Macomber family owns 92% of the stock. The rest is held by management.

- Sale price.

The family is ready to sell its stock at twelve times earnings (past three or five years average), which represents approximately a 50% premium over average market P/E ratio for the industry. In addition to that they intend to dividend out \$5m. in case of purchase right before the acquisition.

INTEGRATION POTENTIAL.

- Supplementary skills and resources.

Macomber competes in a market very different to that of Ferrovia, and very few basic skills of Ferrovia are applicable to Macomber's activity.

- Complementary skills and resources.

Ferrovia could learn from Macomber quality commercial construction, of which it has done very little in the past. Similarly, Macomber can import low cost residential construction know how, and at a later stage even heavy construction skills.

- Management skills.

Macomber's CEO is retiring in three years. The executive VP is supposed to succeed him, but the importance of personal contacts and networking to obtain new jobs poses a serious risk. Their performance has been average, and management skills should be considered adequate, although concentrated in two or three persons. The managers are apparently willing to stay if no substantial changes are introduced in company policies.

WILLIAMS & BURROWS, INC.

PRODUCT/MARKET PORTFOLIO

• Product/service scope.

Building.

New work booked in 1985 is \$221 million, up 117% with respect to 1984. Approximately 20% are bid projects, and the rest are negotiated contracts. There is a mix of fixed cost, unit cost and cost plus contracts.

• Geographical scope.

The company is based in Belmont, California, and it performs all of its work in the state of California.

FINANCIAL CHARACTERISTICS.

• Select financial data.

(\$,000)	<u>1984</u>	<u>1983</u>
Revenues	116984	85935
Net income from cont. ops.	(111)	(2140)

• Capital structure.

Williams & Burrows is a private company, held by W. Barrows (40%), R. Barrows (40%), other members of the Barrows family (17%) and the employees. The family is willing to sell 70 or 80% of the total shares outstanding, but W. Barrows would like to stay as manager and minority shareholder.

• Sale price.

The Barrows would like to cash in \$15 million out of the deal.

INTEGRATION POTENTIAL.

- Supplementary skills and resources.

None. W&B markets and services are not close to Ferrovia's key strengths.

- Complementary skills and resources.

Ferrovia could learn from W&B high quality building, while Ferrovia can export organizational, technical and financial know how.

- Management skills.

Their performance has been below average, and management skills should be considered adequate at most. The managers, and even one of the partners, are willing to stay if no substantial changes are made.

C.W. DRIVER

PRODUCT/MARKET PORTFOLIO

• Product/service scope.

Building, mainly commercial. ..

Backlog is \$30 million. Approximately 50% are negotiated contracts, and the rest have been obtained through competitive bidding.

• Geographical scope.

The company is based in Los Angeles, California, and most of its work is performed in and around L.A. and in Orange County.

FINANCIAL CHARACTERISTICS.

• Select financial data.

(\$,000)	<u>1984</u>	<u>1983</u>
Revenues	35866	30636
Net income after tax (est)	183	217
Cash flow from ops.	255	284

• Capital structure.

C.W. Driver is a partnership. The partners are willing to sell 70 or 80% of the company, with one of them staying as manager and another as a consultant to the new corporation.

• Sale price.

The partners are asking for \$5 million for the whole company, \$2 million in cash and the rest subject to performance in the future, but they are willing to study a new proposal from Ferrovia.

INTEGRATION POTENTIAL.

- Supplementary skills and resources.

None. Ferrovia's key operating strengths cannot be exploited in Driver's markets and services.

“

- Complementary skills and resources.

Ferrovia could learn from Driver high quality building, while Ferrovia can export organizational, technical and financial know how.

- Management skills.

Their performance has been average, and management skills should be considered adequate. The two more relevant in house managers and one of the partners are willing to stay if no substantial changes are made.

14. SELECTION OF CANDIDATES.

There are three companies out of the four that are much less attractive as acquisition candidates than the fourth, for for a variety of reasons.

G.B.H. Macomber asks for a price that is absolutely out of range. In addition to that, the potential synergies are low, and the principal asset of the company is its reputation and its personal contacts, that I believe closely tied to Mr. Macomber. As he is retiring and there is no evidence that his successor will inherit his networking capability, this asset is extremely volatile.

Williams & Burrows has had an operating loss in the past two years, and Ferrovia needs a profitable company. The lack of familiarity with the local market does not make possible a quick turnaround, making the risk of acquiring a badly run company too high. What Ferrovia wants to buy essentially is people and backlog. Williams & Burrows does not provide the first element.

Slattery looks very appealing for its product/market mix, but it is a public company with three important institutional investors, making the purchase and the process to take it private much more complex than that the acquisition of a private company. This does not rule out the acquisition of other public companies, but they should only be considered attractive when the potential synergies and/or geographical location outweigh the drawback of the high transaction costs.

This leaves us with C.W. Driver, for its attractive geographical location, its growth potential and the willingness of the current partners to participate in the management of the newly formed corporation. What follows is a more detailed valuation of it.

FINANCIAL ANALYSIS.

15. C.W. DRIVER. FINANCIAL ANALYSIS.

As mentioned before, C.W. Driver is a partnership. If Ferroviaal acquires it, C.W. Driver will have to be incorporated. There are two factors that lead to this conclusion:

- There will be no need for the responsibility of the shareholders to be unlimited, as Ferroviaal will provide the necessary assets to increase the bonding capacity, and on the other hand it will be desirable to have the responsibility limited to the investment in the subsidiary.
- As Ferroviaal intends to build growth, and not to obtain fast cash, the double taxation of dividends in the future corporation is less important than the reduction obtained in taxes paid for retained earnings.

Exhibit 26 shows the financial statements of C.W. Driver for the years 1980 to 1984, as they appear in the 10-K report. As the company will eventually be incorporated, the financial statements need to be modified to reflect what the company's earnings and cash flow will look like in the future under different possible scenarios.

EXHIBIT 26. C.W. DRIVER.

FIVE YEAR COMPARATIVE INCOME STATEMENT

	<u>1984</u>	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>
REVENUE	35866	30636	37246	37025	17592
Cost of Earned Revenue	34020	28222	35115	34448	15991
GROSS PROFIT	1846	2414	2131	2577	1601
G & A Expense	1480	1978	1580	2324	1603
OPERATING PROFIT	366	436	551	253	-2
Other Income	500	212	393	178	305
NET INCOME BEFORE TAXES	866	648	944	431	303

NOTES.

- (1) Revenue recognition method: completed contract in 1980, percentage of completion from 1981 to 1984.
- (2) Other income is equipment rental income. Equipment rental expenses are included in G&A expenses.
- (3) The managing partners had no salary from 81 to 84.

EXHIBIT 27. C.W. DRIVER.

ADJUSTED FIVE YEAR INCOME STATEMENT

	<u>1984</u>	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>
REVENUE	35866	30636	37246	37025	17592
Cost of Earned Revenue	34020	28222	35115	34448	15991
GROSS PROFIT	1846	2414	2131	2577	1601
G & A Expense	1480	1978	1580	2324	1604
OPERATING PROFIT	366	436	551	253	-3
+ Partners Withdrawals	45	51	147	502	314
+ Equipment Expenses	240	177	130	181	0
- Management Salary	250	250	250	83	0
ADJ. OPERATING PROFIT	401	414	578	853	311
Corporate tax 50%	201	207	289	427	156
NET INCOME FROM OPS.	201	207	289	427	156

Exhibit 27 shows the adjusted five year comparative income statement. The operating profit has been modified according to the following criteria:

- The partners' withdrawals have been added back, as dividends in a corporation are subtracted from after tax income, and not from EBIT.
- There were some equipment rental expenses included in G&A expenses imputable to a separate equipment rental business, whose income was declared separately. These expenses have been added back.
- Top management did not have a salary, their sole source of income being the withdrawals from the partnership. An allowance for management salary has been made in the modified income statements.

Net income has also been adjusted to reflect the fact that in the partnership the partners were taxed on their personal income, and there were no taxes on the company's earnings. The income tax, not reflected in C.W. Driver's statements, has also been included in exhibit 27.

What we are concerned about, however, is forecasting what the cash flows will most likely be in the event that Ferrovia takes over. This analysis is presented in exhibits 28 through 34 and is based on C.W. Driver's historical data, some building industry average ratios, and the effect on cash flow of the operating and financial synergies between Driver and Ferrovia.

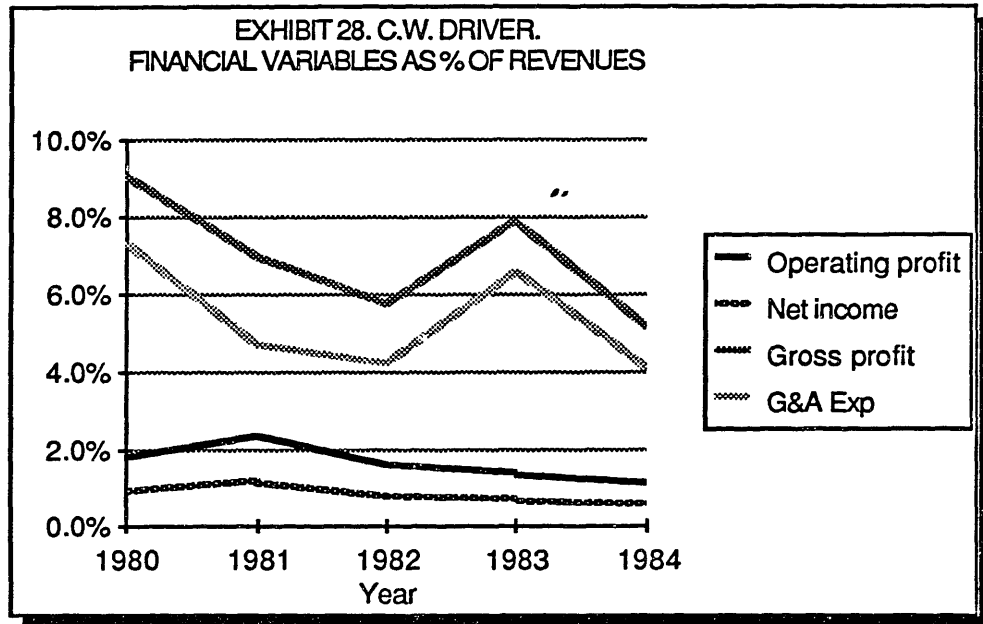
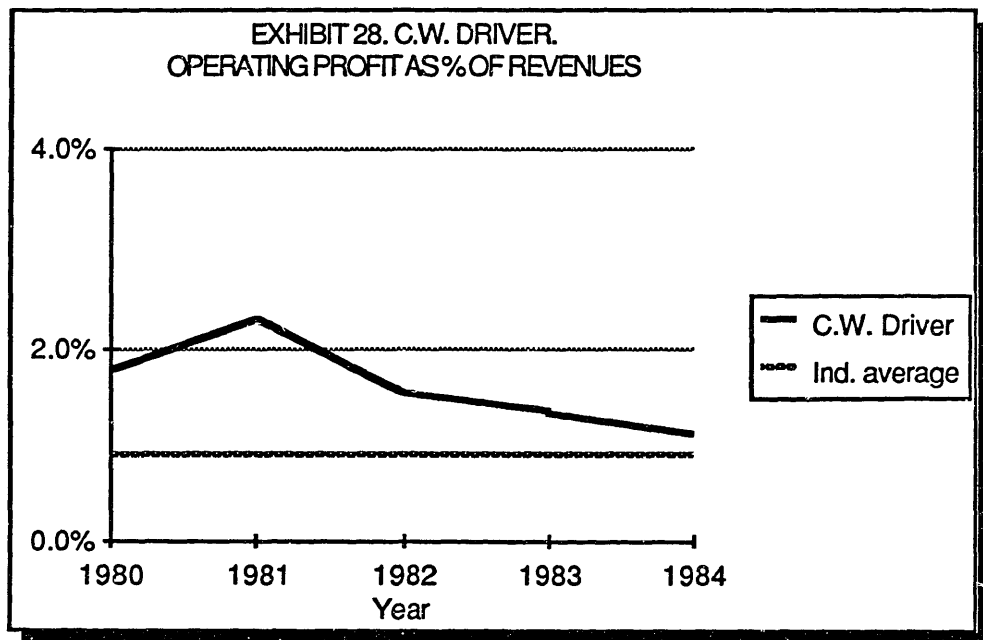


Exhibit 28 shows the evolution of some financial variables in the past five years. There are some issues worth considering:

- The peak of net income in 1981 is most probably due to the change in revenue recognition from the completed contract method to the percentage of completion method, and thus it is not representative of average company performance.
- The sudden increase in gross profit and G&A expenses relative to revenues in 1983 cannot be explained from the income statements alone, but might be due to the recognition of some unexpected revenue, such as payment of a contract claim, transferred to the partners through G&A expenses. This has not been considered a significant factor when evaluating past performance.

- There is a continuous decrease in operating profit through the years. This is probably due to an increase in the proportion of bid contracts, that have lower margins than negotiated contracts but are an easier road to growth. In spite of this, the operating profit in 1984 was 1.12% of revenues, well above the industry average, which is 0.90% (see exhibit 29). It is also true that the average operating profit of small companies is larger than that of bigger companies. If Ferrovial makes the company grow, the operating profit may get closer to the industry average.



Exhibits 30 through 34 apply the cash flow model described in exhibit 13 to the particular case of C.W. Driver and under different hypothesis. The model has been applied assuming that the company maintains a constant rate of growth from now until 1991, and does

not grow from 1992 onwards. Another implicit assumption is that all earnings are distributed as dividends starting in 1992.

The main variables in determining cash flow are: (1) sales growth, (2) operating margin, (3) effective income tax rate, and (4) the investment and working capital required per dollar of sales increase. The value of each of them is specified at the beginning of the exhibits.

The cash flows calculated this way are then discounted at a rate estimated using the CAPM and average industry data, and adjusted for inflation as follows:

β -coefficient = 1.27

Market risk premium = 8.3%

Riskless interest rate (10 yrs.) = 7.5%

Expected inflation = 5%

Nominal discount rate $k'_e = 7.5 + 1.27 \times 8.3 = 18\%$

Real discount rate $k_e = 1.18/1.05 = 12\%$

The results of each year's cash flow discounted to the present are shown under the column "present value". "Total present value" is the addition of all the values shown in that column.

EXHIBIT 30. C.W. DRIVER.

CASH FLOW FORECAST AND VALUATION (\$,000) (1)

Sales growth (real terms)	0.00%
Operating margin	0.90%
Corporate tax rate	50.00%
Inv. & w/c per \$ of sales increase	0.05
Discount rate	12.00%

<u>YEAR</u>	<u>REVENUES</u>	<u>CASH FLOW</u>	<u>P. VALUE</u>
1984	35866		
1985	35866	161	144
1986	35866	161	129
1987	35866	161	115
1988	35866	161	103
1989	35866	161	92
1990	35866	161	82
1991	35866	161	73
1992 to ∞	35866	161	543
TOTAL PRESENT VALUE			1280

Exhibit 30 assumes an operating margin (0.90%) and a level of investment and working capital per dollar of sales increase (5.4¢) equal to the industry averages. Under these circumstances it is not profitable to grow, and the present value of the stream of cash flows is \$1.28 million.

EXHIBIT 31. C.W. DRIVER.

CASH FLOW FORECAST AND VALUATION (\$,000) (2)

Sales growth (real terms)	13.00%
Operating margin	1.25%
Corporate tax rate	50.00%
Inv. & w/c per \$ of sales increase	0.05
Discount rate	12.00%

<u>YEAR</u>	<u>REVENUES</u>	<u>CASH FLOW</u>	<u>P.VALUE</u>
1984	35866		
1985	40529	2	1
1986	45797	2	1
1987	51751	2	1
1988	58479	2	1
1989	66081	2	1
1990	74671	3	1
1991	84379	3	1
1992 to ∞	84379	527	1775
TOTAL PRESENT VALUE			1785

Exhibit 31 shows the results obtained if the operating margin is maintained at Driver's historical levels. In this case, the sustainable growth (maximum rate of growth that does not require additional capital inflow) equals 13%. The value of the company in this case is \$1.78 million.

EXHIBIT 32. C.W. DRIVER.
CASH FLOW FORECAST AND VALUATION (\$,000) (3)

Sales growth (real terms)	17.50%
Operating margin	1.20%
Corporate tax rate	50.00%
Inv. & w/c per \$ of sales increase	0.04
Discount rate	12.00%

<u>YEAR</u>	<u>REVENUES</u>	<u>CASH FLOW</u>	<u>P. VALUE</u>
1984	35866		
1985	42143	2	2
1986	49517	2	2
1987	58183	2	2
1988	68365	3	2
1989	80329	3	2
1990	94387	4	2
1991	110904	5	2
1992 to ∞	110904	665	2240
TOTAL PRESENT VALUE			2253

In exhibit 32 I have assumed that the investment and working capital required per \$ of sales increase is maintained at Driver's historical level, in which case the value of the company equals \$2.25 million. Sustainable growth is 17.5%.

EXHIBIT 33. C.W. DRIVER.
CASH FLOW FORECAST AND VALUATION (\$,000) (4)

Sales growth (real terms)	25.00%
Operating margin	1.20%
Corporate tax rate	33.00%
Inv. & w/c per \$ of sales increase	0.04
Discount rate	12.00%

<u>YEAR</u>	<u>REVENUES</u>	<u>CASH FLOW</u>	<u>P.VALUE</u>
1984	35866		
1985	44833	2	2
1986	56041	2	2
1987	70051	3	2
1988	87563	4	2
1989	109454	4	2
1990	136818	5	3
1991	171022	7	3
1992 to ∞	171022	1375	4628
TOTAL PRESENT VALUE			4644

Exhibits 33 and 34 show the effect of a corporate tax rate reduction from 50% (U.S.) to 33% (Spain), obtainable through adequate transfer pricing policies. Exhibit 33 assumes both operating margin and investment plus working capital requirements equal to Driver's historical values, and in exhibit 34 they are equal to the industry averages. The sustainable growth and the value of the cash flows are equal to 25% and 13%, and \$4.6 and \$1.8 million respectively.

EXHIBIT 34. C.W. DRIVER.

CASH FLOW FORECAST AND VALUATION (\$,000) (5)

Sales growth (real terms)	13.00%
Operating margin	0.95%
Corporate tax rate	33.00%
Inv. & w/c per \$ of sales increase	0.05
Discount rate	12.00%

<u>YEAR</u>	<u>REVENUES</u>	<u>CASH FLOW</u>	<u>P.VALUE</u>
1984	35866		
1985	40529	6	6
1986	45797	7	6
1987	51751	8	6
1988	58479	9	6
1989	66081	10	6
1990	74671	11	6
1991	84379	13	6
1992 to ∞	84379	537	1808
TOTAL PRESENT VALUE			1847

16. SUMMARY.

The results of exhibit 34 are particularly significant. They mean that the effect of the financial synergies between Ferrovia and Driver amount to 45% of the premerger value of the company (value increased from \$1.28m to \$1.85m). These financial synergies are only due to an increase in the bonding capacity, needed for growth, and to a reduction in the effective corporate tax rate.

If in addition to that Ferrovia can achieve any significant operating synergies that allow to maintain a higher than average operating margin in the acquired company, the additional value created for shareholders is of the same order of magnitude as that derived from the financial synergies.

We can conclude that there is room enough for value creation to justify an acquisition even if we have to pay a substantial premium over its market value, but that it should only be paid when the potential for value creation is higher than that premium.

We do not have in our list any candidate that fulfills this condition, and that is why I propose that the search be continued until at least one is found. I also propose not to precipitate the decision because of other constraints unless the investment in the target is a positive net present value project.

17. CONCLUSIONS AND RECOMMENDATIONS.

At the start of this thesis I set out to develop a framework that would help managers analyze their diversification decisions in order to create shareholder value.

The framework proposed is summarized in exhibit 9, and starts with a reassessment of the corporate strategy, derived from the vision of the firm, an environmental scan, and an analysis of the strengths and weaknesses of the corporation. The strategic thrusts, that are a direct consequence of the strategy development process, are materialized in a set of product/market strategies and thus in a decision of whether to diversify and in what direction.

Once the diversification decision has been taken, the next question is which is the adequate strategy to follow. I chose the familiarity matrix as the most simple and adequate tool to perform this analysis. It allows a simple assessment of the factors relevant for success with the different strategies and it is easy to evaluate which approach is most adequate in each case, based in the familiarity of the company with the market and the technology of the area into which we want to diversify. If this area is within the so called "familiar" sectors of the matrix, then acquisition is an adequate strategy. This does not rule out the use of other strategies in familiar sectors nor does it prescribe the use of acquisitions in unfamiliar or marginal sectors, but it is a way of maximizing the chances of success of diversification decisions and it

provides an adequately structured way of thinking about the process.

Once it has been established that acquisition is the right diversification strategy to achieve the corporate goals, it is necessary to develop a set of acquisition criteria. The objective of these criteria is to help focus attention on these acquisition candidates that have the greatest potential to fulfill the company's diversification objectives and to create value for shareholders, which in turn means looking for synergies. This is a simple task once the internal scrutiny and the overall strategy have been developed.

After the acquisition criteria have been established, it is necessary to check the strategic and organizational fit between candidates and bidder, and see to which extent they fulfill the acquisition criteria. This analysis produces a list of candidates ranked in order of preference that are later analyzed financially to determine what their value is for the acquiring company.

The financial analysis is based in the theory of modern finance, and applies the capital asset pricing model and the discounted cash flow technique. A simple mathematical model is used to forecast cash flows, that are then discounted at a rate adjusted both for risk and for inflation to determine what its present value is, and thus the reservation price for the acquirer.

This framework accomplishes several tasks. First, it is a rational and structured approach to thinking about acquisitions, under the perspective of creating value for shareholders. It applies quantitative techniques

where it is possible and necessary, and qualitative arguments and common sense where it is appropriate.

Second, it stresses the importance and facilitates the search of both operating and financial synergies in order to be able to identify a positive spread between value to the buyer and to the seller, and thus between buying and selling prices. This is an essential part to any acquisition analysis, and it is implicit both in the strategy development process and in the development of the acquisition criteria.

Third, it provides a way to link the strategy development process to the evaluation of acquisition projects and candidates, and because of this its first part can also be extrapolated to any kind of diversification process.

As weaknesses I may say that it is an inflexible process applied to an extremely dynamic type of event, and as such should be applied with care. It does not intend, however, to be a substitute of the negotiations required in any acquisition process, but rather a tool to be more effective in them.

The financial and qualitative analysis proposed in this thesis is of limited value unless the acquiring company frames the assumptions of the analysis only after a detailed review of management's operating philosophy, policies, practices, procedures, and controls. Evaluating target company management is probably the single most important exercise that an acquiring company has to perform before deciding on the acquisition, unless the target is a turnaround situation. It is not

financial forecasts that make acquisitions work, but people. It is this human variable that is not included in the framework that requires most study, together with the whole negotiation process. Further investigation in these issues will greatly improve the ability of management to react appropriately in any type of situation.

This framework will hopefully serve also as a catalyst to reevaluate a company's overall strategic plans, and will provide for companies seeking acquisitions or being acquisition targets with better information to enable top management and boards make timely and well conceived decisions.

BIBLIOGRAPHY.

- Arzac E. "Do your business units create shareholder value?" HBR, Jan-Feb 1986.
- Biggadike R. "The risky business of divrsification" HBR, May-June 1979.
- Brealey R., Myers S. "Principles of Corporate Finance", 2nd edition. Mc. Graw Hill, 1984.
- Business Week. "Do mergers really work?" BW, June 3, 1985.
- Buzzell R. "Is vertical integration profitable?" HBR, Jan-Feb 1983.
- Castellani V.B. "Comparative financial summaries of major construction, engineering and design companies". V.B. Castellani & Co., 1985.
- Construction Review. "Outlook for 1985". Nov-Dec 1984.
- Construction Review. "Outlook for 1986". Nov-Dec 1985.
- Construction Review. "The 1982 census of construction: a wealth of economic data". Sept-Oct 1985.
- Construction Review. "Regional developments in construction activity". March-April 1983.
- Ellsworth R. "A note on the decision to divest" Unpublished, HBS 1979.
- ENR (Engineering News Record). "The Top 400 Contractors", 1984.
- ENR (Engineering News Record). "The Top 400 Contractors", 1985.

- Jensen M. "Takeovers: folklore and science" HBR, Nov-Dec 1984.
- Hammermesh R., White R. "Manage Beyond Portfolio Analysis" HBR, Jan-Feb 1984.
- Hax N., Majluf N. "Strategic Management. An Integrative Perspective". Prentice Hall, 1984.
- Kester C. "Today's options for tomorrow's growth". HBR March-April 1984.
- Lauenstein M. "Diversification - The hidden explanation of success". Sloan Management Review, Fall 1985.
- Marren J. "Mergers and Acquisitions. Will you overpay?". Dow Jones-Irwin, 1985.
- Miles R. "Learning from Diversifying" Unpublished HBS paper, 1981.
- Myers S. "Finance theory and financial strategy" Interfaces, Jan-Feb 1984.
- Peters T., Waterman R. "In Search of Excellence". Warner Books, 1982.
- Porter M. "Competitive Strategy". The Free Press, 1980.
- Porter M. "Competition in global industries: a conceptual framework". Unpublished, 1984.
- Porter M., Salter M. "Diversification as a strategy" HBS, 1982.
- Rappaport A. "Strategic analysis for more profitable acquisitions". HBR, July-August 1979.
- Rappaport A. "Do you know the value of your company?" Mergers and Acquisitions, Spring 1979.

- Roberts E. "New ventures for corporate growth" HBR, Jul-Aug 1980.
- Roberts E., Berry C. "Entering new businesses: selecting strategies for success". Sloan Management Review, Spring 1985.
- Salter M., Weinhold W. "Diversification through Acquisitions: Strategies for Creating Economic Value". Free Press, 1979.
- Salter M., Weinhold W. "Choosing compatible acquisitions". HBR, Jan-Feb 1981.
- Salter M., Weinhold W. "Diversification via acquisitions: creating value". HBR, Jul-Aug 1978.
- Shelton L. "Strategic business fits and corporate acquisitions". Unpublished paper, August 1985.
- Solnik B. "Why not diversify internationally rather than domestically". Financial Analysts Journal, Jul.-Aug.1974.
- Woo C. "An empirical test of value based planning models and implications" Management Science, Sept. 1984.
- Woo C. "A comparison of value creators against value destroyers along industry factors and firm determinants". May 1985.
- Woo C., Cool K. "The impact of strategic management on systematic risk". 1985.