STRATEGIES OF THE MAJOR SPANISH CONSTRUCTION COMPANIES
FOR IMPROVING THEIR DOMESTIC AND INTERNATIONAL
COMPETITIVENESS

by

Gonzalo Gomez Barquin

Ingeniero de Caminos, Canales y Puertos
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Submitted to the Department of Civil and Environmental Engineering in
Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE
in Civil and Environmental Engineering

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

February 1994

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Department of Civil and Environmental Engineering
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MASSACHUSETTS INSTITUTE
OF TECHNOLOGY

MAR 21 1994
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ABSTRACT

The first part of this thesis is analyzing both the contingency factors and the
structural factors affecting to the Spanish construction sector, the former with a
relatively transitory impact (including current recessive economy and policies of
fiscal expansion adopted) and the latter with a more permanent influence on the
competitiveness of the companies (including productivity-related issues and social
constraints -i.e. labor market-).

The core part of the thesis is addressing the strategies followed by the major
Spanish construction firms in order to achieve a double objective: not only to
overcome the current domestic recession but also to improve their competitiveness
and long-run strategic positioning, both in the domestic and international markets. In
particular, the processes of internationalization, mergers and diversification of the
major contractors will receive an in-depth analysis; also the strategies relative to
commercial positioning, technological innovation, human resources and internal
organization will be addressed.

The line of exposition for each of the strategies introduced includes: first, the
reasons for such processes to take place and their current extent to the Spanish
companies; second, examples or case-studies to illustrate the success -or the failure-of the analyzed strategy; and third, a more in-depth discussion or theoretical
framework in which that specific strategy fits. Since the successful implementation
of each strategy requires an efficient and specific structural configuration of the
companies, that third part will be focused as well on the structuring -or restructuring-
of the firms involved in order to accomplish the analyzed strategy.

Thesis Supervisor: Fred Moavenzadeh
Title: Director, Center for Construction Research and Education and George
Macomber Professor of Construction Management
ACKNOWLEDGEMENTS

The first recognition is due to the Fundación Pedro Barrié de la Maza, whose financial support has made possible this investigation, as well as the rest of the requirements for my program in construction management. Also to the Institute of International Education of New York for the administration of such resources.

A special gratitude as well to my parents and to Isabel, that have been my main contact with Spain while studying at MIT, making the important task of collecting and sending the articles and newspapers connected to my thesis work.

A mention is due also to the people of the Spanish construction companies and institutions, who have dedicated their time and effort to prepare and answer my interviews. In particular, to: Rafael Jimenez (Agroman); Jose Florez (Dragados); Victor Relaño (Entrecanales-Iberinsa); Antonio Iglesias, Ana Villacañas and Diego Valle (Ferrovial); Andres del Rio (Fomento de Construcciones y Contratas); Jose Antonio Herrera (Huarte); Alejandro del Valle and Jose Luis Carreras (Seopan); and Juan Antonio Becerril (Universidad Politecnica de Madrid professor).

I would like to recognize as well the work of the staff and professors of the Center for Construction Research and Education of MIT; in particular: Fred Moavenzadeh, academic advisor and thesis supervisor; and Henry Irwig, whose lectures on structuring construction organizations have been of great support for this thesis.

Finally, a special gratefulness to my friends Luis Miguel Dominguez, Manuel Traseira, Ana Maria Pedraz and Kiam Ho for their continuous encouragement and support.
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CHAPTER 1. DOMESTIC ENVIRONMENT.

This first chapter establishes a framework in which the Spanish construction firms are immersed, dealing with the current economic situation at Spain, the effects that such situation is having on the construction industry and the corrective policies taken by the Government, which will have a strong impact on the sector during the next years.

1.1. Economic situation.

During the last 20 years Spain has lived one of the most changing periods in terms of political, social, cultural and economic development. I will focus here on the economic growth during the last years; the structural imbalances of this growth; the current situation and the response of both the Government and the industry to such condition of the economy.

With respect to the economic growth at Spain, let's analyze the three major variables: total output, employment and investment. During the 11-years period 1975/85 the GDP increased an average of 1.5% annually which was followed by a high decrease in employment (-1.6% annually), that is, the lost of 2.13 millions of jobs. This pace was drastically changed in the five years 1986/90, during which the GDP has grown -in real terms- with an average annual rate of 4.5%. To keep this rate, the employment rate has also experienced a huge growth (+3.6% annually). This means that the total employed population has changed from 10.5 million people -the lowest figure, in the second quarter of 1985- to 12.6 million people in the last quarter of 1990.
Besides output and employment, the third variable that better reflects the economic pace is the investment since it not only increases the aggregate demand but also the potential of future output in the medium and long run - a higher investment means a possibility to increase and renew the installed capacity to produce goods and services in the future-. Again, the two periods are quite different: during 1975/85 the investment decreased an average annual rate of -1.8% while during 1986/90 the investment grew with an average annual rate of 11.7%. It seems clear how the investment acted as an envelope with respect to the GDP, amplifying its variations and so can be considered as an "strategic" variable to predict future growth.

Together with this positive growth during the period 1986/90, important imbalances have appeared in the Spanish economy:

a) The budget deficit has increased during the last years -from 2.7% of GDP in 1989 to 4.4% of GDP in 1991-.

b) The current account deficit has also increased -from 1.1% of GDP in 1988 to 2.9% of GDP in 1991, the highest current account deficit in Europe after Greece-. This deficit has been offset (financed) in terms of the balance of payments with a huge foreign capital inflow.

c) Precisely to keep that foreign capital inflow two key variables have intervened: (1) high interest rates (i.e. 13-14% in 1-year public treasury bond), which in turn is hitting the direct investment and (2) high appreciation of the domestic currency, which in turn is making Spanish firms lose competitiveness abroad.

d) The inflation rate has also increased -from 5.6% in 1988 to 7.3% in 1990- as a consequence of the increases in salaries above the rate of growth of GDP and
productivity, as well as the higher costs of material inputs and energy.

Both the appreciation of the domestic currency and the steady inflation rate have doubtlessly had negative effects on the competitiveness of the Spanish firms abroad (our products have become relatively more expensive with respect to other countries' products). Of course, there are also structural reasons affecting competitiveness; a study in more detail is shown in the second chapter.

After this brief description of the last years, which is the present situation of the economy in Spain? The indicators are suggesting a deep recession in most of the sectors. In fact, the GDP decreased (-0.2%) in the last quarter of 1992 (the first negative growth since 1981), which means a total growth for 1992 of 1%. This is followed -and amplified, as explained before- by the decrease in the investment (-6% in the last quarter of 1992 and -3% the average of the year). Those are the data of the National Institute of Statistics (INE) but the Institute for Social Research and Development (FIES) establishes even more pessimistic data, with a total growth of GDP of 0.7% and the next evolution by sectors during 1992:

<table>
<thead>
<tr>
<th>change(%) in GDP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>-1.4</td>
</tr>
<tr>
<td>Industry</td>
<td>-0.3</td>
</tr>
<tr>
<td>Construction</td>
<td>-4.5</td>
</tr>
<tr>
<td>Services</td>
<td>1.9</td>
</tr>
<tr>
<td>Total</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Source: FIES 3/10/93
Together with the indicators of output and investment, the unemployment rate is one of the worst figures of the Spanish economy during 1992 (reaching the level that the Government faced in 1982, that is, 3 million people or 20% of the labor force). The evolution of the rate of unemployment is indicated in the graph below.

Rate of unemployment (% of the labor force)

Figures of 1992 (by quarters, total # of unemployed)


Not only the previous figures are threatening the expansion of the Spanish economy, but also the next issues:

a) The weakening of the GDP and employment is a direct consequence of a fall in investment -not in consumption-, which means a lower potential for future growth. In other words, only the sector of services keeps pulling of an economy supported mostly by consumption.
b) The consumer price index (CPI) did not decrease as much as expected in a recession context, keeping in a 5.3% at the end of 1992, with the costs of labor and services pushing up.

c) In order to offset partially the effects of inflation and gain competitiveness in exports, the Government devalued the domestic currency (peseta) a 5% on Sept. 17, 1992 and an additional 6% on Nov. 22, 1992. The immediate effect of these devaluations was an increase in the interest rates in order to stop the outflows in the capital markets that were taking place as a consequence of expectations of new devaluations. For example, the reserves in foreign currency of Spain decreased from $ 71.3 billion in August to $ 59.6 billion (-16.4%) in September as a consequence of speculation. (Curiously, the Government had assured on October, 1992 that there would not be new devaluations or increase in the interest rates\(^1\), probably in order to calm unsuccessfully the expectations).

The key issue is that, even after these devaluations of the currency, the balance of payments increased its deficit a 63.7% during 1992 with respect to the deficit of 1991. It seems normal that the capital inflow fell because of the expectations of the financial investors (as explained previously) but the component of the imports that also fell was mainly the one of the capital goods, necessary to renovate the productive structure of the firms. Thus, once again, the investment is indirectly suffering.

\(^1\) El Pais Internacional. Oct. 12, 1992
An analysis developed by Lehman Brothers (a major bank of investment of the US) is suggesting that the Spanish Government will be tempted before the elections (fall 1993 or probably before) to force a new devaluation of the domestic currency (around 11%, that is, until a exchange rate of 80 pts/DM) in order to improve the trade balance, trying at the same time to offset the effects of the differentials in inflation with respect to other EC countries.

d) In the previous point it was highlighted how the expectations of new devaluations had made the nominal interest rates to raise \( i = 12.5\% \) in long-term Treasury bonds). Even discounting the inflation rate, the real interest rates are high enough to have a negative feedback on the direct investment, the major loser during this recession. The analysis of the Spanish economy by Merril Lynch establishes a forecast of negative growth (-3.2%) in direct investment also for 1993.

In this context, the Commission of Ministers of Economy and Treasury (ECOFIN) of the European Community (EC) has strongly recommended "to increase the spending in investment and decrease the public expenditures and consumption, as well as give more attention to the infrastructures and capital goods."\(^2\) This Commission has also established a forecast of growth in Europe for 1993: 0.8% or 0.9% on average; 0% in Germany, 1% in France and Spain and 1.3% in United Kingdom, so confirming the extreme weakness of the economy along the EC. This forecast is the same one predicted for Spain by the OECD and is also confirmed by the project *Hispalink* -an econometric model developed in Spain- that predicts a 1.1% growth in GDP in 1993\(^3\).

\(^2\) El Pais. 1/19/93
The next question in this analysis is what will be the policy of the Spanish government in this context of recession and huge unemployment. There are clearly two opposite forces: as a first approach, an expansionary monetary and/or fiscal policy might reactivate the economy but, on the other hand, Spain has a commitment with the rest of the EC countries in order to consolidate the last phase of the monetary union in 1999. The conditions are summarized in the Maastricht Agreements and refer to:

- public debt (<60% of GDP)
- public deficit (<3% of GDP)
- interest rates (measured with respect to the other EC countries)
- inflation (measured with respect to the other EC countries)
- exchange rates (in the EMS band and without devaluations in two years).

In order to achieve the Maastricht objectives -which in turn is to correct the structural imbalances of the Spanish economy- it seems difficult to apply a monetary expansion (which would create an inflationary process) or a fiscal expansion (which would result in an increase of public deficit and debt). In words of the Spanish Minister of Economy and Treasury, Mr. Carlos Solchaga, "we have to put the process of convergence before the recovery of our economy". This explains the next facts:

3 Expansion. 3/10/93
4 Expansion. 3/12/93
(1) The restrictive monetary policy applied during 1992 and its continuity during 1993. In this sense, it is an important step that the Bank of Spain will decide -from January 1, 1994- the objectives in monetary policy and will execute such objectives with complete independence of the government, as it occurs in other countries (Bundesbank in Germany or Federal Reserve in United States). This will allow the Bank to apply a more aggressive inflation-fighting policy (exchange rates policies will remain under the control of the government, though).

(2) The restrictive fiscal policy for 1993. In fact, the public budget for 1993 -presented in September 29, 1992- is the most restrictive in real terms in the last 20 years (all the components of the public expenditures present a restrictive character, but those of retirement pensions, public debt and unemployment subsidies). These restrictive policies fit quite well with the view that "wh:n there is a strong international recession wave, it cannot be stopped in a single and small economy with keynesian-type policies", that is, with increases in the public spending; the only way is "to correct the unbalances -inflation and deficit- in order to improve the private expectations and, consequently, the investment".5

This seems accurate in macroeconomics terms but it is difficult to maintain in terms of social stability -mainly with an official unemployment rate close to 20%-. The fact is that in March, 93 the government finally has presented a package of public expenditures to activate the economy; this package is focused mainly on civil works and construction. Because of its importance for the construction sector, it will be discussed in detail in part 1.3 of this chapter.

5 Minister of Economy and Treasury of Spain. El Pais. 10/5/92
1.2. Effects on the construction sector.

Following the same line of exposition that in the previous point, I will describe briefly the evolution of the Spanish construction industry during the last years as well as the present situation of the sector, including the effects of the general recession on the main construction firms.

The early 70s were characterized by a huge construction activity (turnpikes, energy plants, etc.) with a high increase in the construction firms’ assets in labor and modern equipment. After that, and following -or rather, anticipating- the evolution of the economy, the period 1974/84 meant a deep recession for the Spanish construction industry (deeper than in the rest of Europe). These few data are representative of that period: the decrease in the construction activity between 1974 and 1984 was of 25% -in real terms-, which was translated in the lost of 500,000 jobs and an unemployment rate in the sector of 36%.

The period 1985/90 was completely different: the construction activity experienced a growth higher than 50%, while the GDP grew 24%. In both periods the growth in construction amplifies that of the economy and the construction industry changed from being the most depressed sector to being one of the top sectors in terms of growth.

And, what has happened during the years 1991 and 1992? Following the same trend of the Spanish economy described in 1.1 the construction sector has suffered -amplified- the crisis, presenting negative growth during the year 1992; even more,
the decrease of investment in construction has been higher than the overall decrease in investment. The next figures summarize the main data of investment in construction, compared to the general investment and the growth in GDP:

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>2.6</td>
<td>2.3</td>
<td>2.3</td>
<td>2</td>
<td>1.9</td>
<td>1.5</td>
<td>1</td>
<td>-0.2</td>
</tr>
<tr>
<td>Consumption</td>
<td>3.1</td>
<td>3</td>
<td>3</td>
<td>3.3</td>
<td>3.3</td>
<td>3.1</td>
<td>2.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Public expenditures</td>
<td>3.9</td>
<td>3.8</td>
<td>4.2</td>
<td>5</td>
<td>5.9</td>
<td>5.7</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Investment</td>
<td>3.2</td>
<td>1.8</td>
<td>1.1</td>
<td>0.3</td>
<td>-0.4</td>
<td>-2.3</td>
<td>-3.9</td>
<td>-6</td>
</tr>
<tr>
<td>Inv. in construction</td>
<td>7.9</td>
<td>5.7</td>
<td>3.5</td>
<td>0.1</td>
<td>-2.4</td>
<td>-4.1</td>
<td>-4.9</td>
<td>-6.5</td>
</tr>
</tbody>
</table>

Source: INE and Seopan (Spanish contractors' association); reports Jan. 1993

As explained in point 1.1 the major loser during this recession is the direct investment -mainly in construction, that represents a 64% of the total investment- while the private consumption and public expenditures maintain relatively high rates of growth compared to the actual output.

The evolution of the construction activity is shown in the next chart, in % change with respect to the previous year.

* estimated

These are the data of growth corresponding to the last quarter of 1992 by sectors:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential building</td>
<td>-7 %</td>
</tr>
<tr>
<td>Non residential building</td>
<td>-4 %</td>
</tr>
<tr>
<td>Civil works</td>
<td>-12 %</td>
</tr>
<tr>
<td>Renovation and maintenance</td>
<td>4 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>-6 %</strong></td>
</tr>
</tbody>
</table>

Source: Seopan, report Jan. 1993

Which are the main reasons for such a high -and sudden- decrease in the construction activity?

a) The first underlying reason has been the insufficient private funds to invest in equipment and infrastructure; it is difficult to maintain such investment with so high interest rates.

b) The public investment in construction was accelerated in the previous years in order to accomplish all the building and civil works required for the 1992 events (Olimpic Games, Expo '92, high-speed railway, etc.) but there have not been many relay programs, so it has been somehow an "announced death".

In fact, the next graph presents the data comparing the public bidding during the last years; in 1991, the public bidding decreased a 27.8% with respect to the previous year and in 1992, a 19.5%.
Following the figures by Seopan, the projects of the Central Administration fell by 27%; those of the regional communities by 13.5% and those corresponding to the local Councils by 14.5%. Besides the fall itself, an important conclusion can be drawn out from these figures and the previous chart: the decrease in bidding is lower for the local governments than for the central one; also in the years of growth, this was higher in the regional and local stage than in the national stage. This is suggesting a certain decentralization in the public bidding process, which the construction firms should take into account in order to allocate their resources correspondingly.

c) Not only the civil works, but also the non residential buildings -including new industrial, commercial, offices and services buildings- have fallen as it did the investment.

d) With respect to the residential buildings, one additional factor has to be taken into account when analyzing its negative growth: the prices of housing have
experienced a huge increase during the last years; in fact, the average ratio \([\text{price of a house}] / [\text{family annual income}]\) has changed from 3/4 in 1986 to 7 in 1991. This fact, together with the high price of the loans, are making the demand become insolvent.

e) Finally, the renovation and maintenance sector is the only one that has positive sign, perhaps as a consequence of its substitutive effect with respect to the new buildings and because of the support received in the Quadrennial Housing Plan.

So far, the impact of the recession in a lower demand for construction activity has been addressed, but what about the supply? In other words, what has actually happened to the construction firms during the last year? I will present the results for the seven main construction companies that price in the stock market.

<table>
<thead>
<tr>
<th>year 1992 data in mill. pesetas</th>
<th>pretax profit</th>
<th>change (%) r. to 1991</th>
<th>revenues</th>
<th>change (%) r. to 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCC*</td>
<td>22296</td>
<td>-2 %</td>
<td>382236</td>
<td>4.9 %</td>
</tr>
<tr>
<td>Dragados</td>
<td>13589</td>
<td>6 %</td>
<td>351800</td>
<td>-3 %</td>
</tr>
<tr>
<td>Cubiertas</td>
<td>7417</td>
<td>-17.8 %</td>
<td>218000</td>
<td>-5 %</td>
</tr>
<tr>
<td>Huarte</td>
<td>3563</td>
<td>-1.6 %</td>
<td>110000</td>
<td>-1.1 %</td>
</tr>
<tr>
<td>Ocisa</td>
<td>2966</td>
<td>-38.9 %</td>
<td>151884</td>
<td>-4.3 %</td>
</tr>
<tr>
<td>Obrascon</td>
<td>1171</td>
<td>-33.5 %</td>
<td>22420</td>
<td>1.9 %</td>
</tr>
<tr>
<td>Lain</td>
<td>982</td>
<td>-51 %</td>
<td>48217</td>
<td>0.4 %</td>
</tr>
</tbody>
</table>

* Fomento de Construcciones y Contratas

Source: Expansion, 3/5/93
Thus, the main construction companies had in 1992 a strong fall in profits (19.8% in average). In absolute terms, FCC reached the best result -one third of its figures corresponds to activities different from construction, though-.

Nevertheless, these figures only give a partial view of what is happening in the sector. The next issues should also be considered:

a) The construction activity increased by 52% from 1985 to 1990 and so did the firms' acquisition of equipment and creation of new jobs. At the end of 1992 these firms find themselves oversized with respect to the current demand -also due to the rigidity of the labor market, that will be discussed in more detail in chapter 2-.

b) It is also important to highlight that the main client of the construction companies in Spain is the Administration (Central, Regional and Local), absorbing an average share of one third of the total output. This strong dependency on the public sector gives an idea of the effect that can have on these firms the reductions in public bidding presented in the previous pages.

c) The increased competition for the public bidding among the construction firms can be summarized in the next figures:
average of:

<table>
<thead>
<tr>
<th>year*</th>
<th>1990</th>
<th>1991</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>markup</td>
<td>-14%</td>
<td>-22.6%</td>
<td>-31.4%</td>
</tr>
<tr>
<td>number of competitors</td>
<td>5.8</td>
<td>9.6</td>
<td>17.3</td>
</tr>
<tr>
<td>void bids (%)</td>
<td>11.3%</td>
<td>3.3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

* average January-September


Those incredible low markups are not only affecting the results of the firms, but mainly affecting the quality of the product and giving raise to a neverending bargaining with the Administration in order to improve the results by change orders that, at the end, are translated in higher prices and several modifications performed urgently and often with lower attention to the design or quality.

d) About 100,000 jobs have disappeared in the sector during 1992 out of the 500,000 created in the good period 1985/90⁶, which gives an idea of the social weight that walks together with the reduction of the activity.

e) If the recession in the sector might not seem very threatening with an average reduction in 1992 of 6% for all the country, it is important to note the different regional incidence; in fact, in Andalucía, Canarias, Madrid, Navarra, Castilla y Leon the reduction of activity has been specially strong (about 10%, following the figures by Seopan) as it has been the regional differential increase in unemployment.

⁶Seopan, 3/18/93
f) Some subsectors are suffering from additional problems to the reduction of the construction activity; for example, the cement subsector has seen how the consumption of cement has decreased by 8% from 1991 to 1992 but also how the imports have been moving the national market down. In this sense, the managing director of Asland has told that "a strong restructuring and concentration in the cement sector is the only way out to the crisis of the cement companies. It is inevitable that production be rationalized, either by merger policies or by closing our factories".  

Finally, which are the estimations for 1993? These are some of the forecasts for the construction growth, all presenting again negative variation:

<table>
<thead>
<tr>
<th>Source:</th>
<th>forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Treasury</td>
<td>-1.8 %</td>
</tr>
<tr>
<td>Bank of Spain</td>
<td>-2 %</td>
</tr>
<tr>
<td>B.B.V.*</td>
<td>-3 %</td>
</tr>
<tr>
<td>Caixa</td>
<td>-3.5 %</td>
</tr>
</tbody>
</table>

*B Bank Bilbao Vizcaya

Seopan (Spanish Contractors' Association) estimates a growth in construction of -4%, with a higher reduction in non residential buildings, but with an increase in residential construction (mainly Administration-protected housing) and a lower decrease (with respect to 1992) in public bidding. The analysis by Euroconstruct

---

7 Mr. Miguel del Campo. Expansion, 6/27/92
highlights that the construction sector will not experience a recovery until the last quarter of 1994 or the first quarter of 1995.

However, the effects of the economic recession on the construction sector, analyzed so far, could be treated as "contingency factors" - stressing the relatively transitory impact - as opposed to "structural factors" that will be discussed in chapter 2.
1.3. Fiscal policy. The Director Plan for Infrastructures.

I concluded the point 1.1 discussing the priorities of the Spanish government for the next years, that is, the process of convergence with the EC (based on the Maastricht Agreements) first, then the recovery of the domestic economy -that will come as a consequence of the correction of the major imbalances: public deficit, current account and inflation-2-. These priorities explain the restrictive monetary and fiscal policies adopted (the public budget for 1993 is, in fact, the more restrictive in real terms in the last 20 years). Nevertheless, there are strong arguments supporting a higher level of public expenditures in infrastructures for the country:

a) The economic development of the country as well as the competitiveness in the productive processes have a major constraint with the insufficient level of infrastructures, divided in:

- gap with respect to other EC countries in infrastructures of transport (roads and railroads);
- required investment in hydrolic works, through the Hydrolics National Plan;
- insufficient infrastructure and urban equipment in the biggest towns;
- environmental policy (also as a requirement of the EC); and
- policies of regional balancing in the context of the EC.

b) From an economic point of view the way to go back to an economic growth higher than 3% in order to stop the destruction of employment is to increase the public investment in "locomotive" sectors, such as construction. At least, these are
the main conclusions reached in the World Economic Forum (February, 1993) where academicians and politicians from Europe and US have given a strong support to the old keynesian theories in order to reactivate the world economy.\footnote{El Pais Internacional, 2/8/93}

There is also an analysis developed in France with the econometric model METRIC (Modele Econometrique Trimestriel de la Cojoncture) that offers similar results: a higher investment in civil works is the policy with best effects in terms of employment, output, prices and even current account. These results might be applicable to a country as Spain, that also suffers from high unemployment levels and deficit current accounts.

c) The calculations developed with the Input-Output model of the EC conclude that the multiplier effect in terms of output of the construction activity is 1.7 in France and Italy, 2.0 in Germany and United Kingdom and 2.1 in Spain. Similarly, but in terms of employment, the Ministry of Public Works and Transportation of Spain (MOPT) has estimated that the creation of a direct job in construction is translated indirectly in 1.15 jobs more in other sectors, confirming that the civil works have an expansive effect on the rest of the economy that represents approximately the double of its volume.

d) The National Construction Confederation (CNC) of Spain has also taken into account the effects that the increase in public investment in infrastructure will have on a higher tax collection and a lower public expenditure in unemployment subsidies, concluding that the Administration can receipt by this double way as
much as half the initial investment. In other words, what the Administration "saves" with no-investment is partially offset with higher subsidies and lower tax collection.\(^9\)

e) Obviously the major problem facing the government when increasing public expenditures is the control of the deficit and in turn the total public debt (this control is also a condition stated in the Maastricht Agreements, as mentioned previously). Besides, it is clearly unfair to transmit a huge public debt to future generations if the expenditure has been focused on "public consumption" but it indeed makes sense to transmit a public debt to those future generations if, at the same time, there is a transmission of infrastructures, capital goods and better conditions for future production and competitiveness.

The fact is that in March, 93 the Spanish government has finally presented a package of long-term public investment in civil works and construction in order to reactivate the Spanish economy (perhaps as a consequence of similar arguments to those discussed above or perhaps as a consequence of the imminent elections; the reader can choose). This package is presented as the Director Plan for Infrastructures with a broad scope in projects and in time (1993-2007), consisting of:

- Roads. Construction of almost 5,000 km of high-capacity roads (increasing the current network from 5,300 km of motorways and expressways to 10,000 km). The main projects will be two expressways in Galicia (with 25% of the alignment in tunnels or bridges); one expressway to link North-South (Asturias with Andalucia) and one to link East-West (Levante with Extremadura).

\(^9\) Mr. Jose Luis Carreras Yanez. Seopan. Personal interview.
Railroads. The Director Plan for Infrastructures (DPI) includes a high-speed railroad (AVE) from Madrid to Barcelona and France with a branch to Pais Vasco from Zaragoza. Also includes the improvement of conventional railroads to reach 220 km/h (Levante axis).

Hydrology and environment. Includes the National Hydrologic Plan -with transfers among hydrologic basins-, the Water Treatment Plan and programs of maintenance of coasts.

Ports and airports. Remodelation of most of the ports and airports of Spain.

Towns. Agreements with local Councils and regional Communities for integral restructuring of 96 towns (intermodal approach, integrating the different modes of transportation).

The investment will consist of 18 trillion pesetas (about $ 150 billion) with the next shares:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>roads</td>
<td>30.7%</td>
</tr>
<tr>
<td>railroads</td>
<td>16.2%</td>
</tr>
<tr>
<td>hydrology and environment</td>
<td>21.3%</td>
</tr>
<tr>
<td>coasts</td>
<td>2.5%</td>
</tr>
<tr>
<td>ports and airports</td>
<td>10%</td>
</tr>
<tr>
<td>towns</td>
<td>19.1%</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>0.2%</td>
</tr>
<tr>
<td>total</td>
<td>100%</td>
</tr>
</tbody>
</table>

This plan will be financed from the public budget in a 71%\textsuperscript{10}. The rest of the financing will come from several sources: private, funds from the EC (structural and cohesion funds) and rates to the users.

Of course, the introduction of this huge package of investment in infrastructures will play an important role in the recovery of the domestic economy -as analyzed before- and also in the recovery of the internal demand for the construction activity (the first "signs" have taken place in the stock market, with an important increase in the value of Dragados, Cubiertas, Huarte and Lain just based in the renewed expectations for the sector after the publication of the DPI\textsuperscript{11}); but it will as well achieve other important goals:

(1) The plan is a basic document in order to arrange the annual budget debate.

(2) It will allow to fulfill the requirements of the EC, that is, to invest annually a 5% of the GDP in infrastructures, and thus obtain at the same time the structural and cohesion funds from the Community. In fact, Spain will receive 5 trillion pesetas (about $ 42 billion) from the EC during the period 1993/99 in a double concept: structural funds (for the regions with a GDP less than 75% of the average of the EC) and cohesive funds (for the 4 countries with lower GDP per capita of the Community). To obtain these funds it is required a program-framework for the projects; the Director Plan for Infrastructures fits with this requirement.

\textsuperscript{10} Expansion, 3/9/93
\textsuperscript{11} Expansion, 3/9/93
(3) The Plan achieves also a triple function of coordination:

a) territorial coordination of projects classified by international, national, regional and local scope;

b) sectorial coordination of different aspects of infrastructures, such as transports, telecommunications, energy, water or equipment; and

c) temporal coordination of the different stages of all the projects, establishing priorities and dates which will allow to lower the costs (to perform many projects simultaneously -as it has been done in 1990 and 1991- is always translated into higher costs).

(4) This Plan can lead to a certain correction of unbalances among different regions of Spain (new expressways in Galicia as well as new links between North-South and East-West) looking for a higher territorial permeability and cohesion in terms of transportation. The chosen form of network complements the classic radial design of roads and railroads reflecting the new conception of autonomic regions -decentralization- as opposed to the old centralized conception of the country.

In this sense, the Plan tries to establish a trade-off between economic profitability of the projects and improvement of the development of marginal areas ("social profitability"). For example, the minimum traffic requirement for an expressway to be "socially" profitable is 8,000 vehicles per day, while the minimum to be economically profitable is estimated in 12,000 vehicles per day\textsuperscript{12}.

\textsuperscript{12} Following the estimation by Jordi Grell, manager of the Institute Cerda of Barcelona.
(5) The chapter of transports of the DPI focuses on the concept of intermodality, mainly in the accesses to the big towns, stressing the complementarity of the different modes. This approach has been introduced in many cities of the developed countries, but it is the first time that appears officially in Spain (where half of the population live concentrated in 16 urban cores).

(6) Once that the first plan of roads as well as the investment in public works done for the 1992 events have finished, this new plan fills the "empty space" in public works, allowing the construction companies to perform a long-term programming.

(7) Finally, the Plan introduces a relatively flexible way of financing the projects, consisting of:

- 71% from the public budget; not only the Central Administration but also regional and local administrations will play a role of increasing importance (in fact, the DPI has been discussed with the Autonomic Governments and with the Local Councils);
- structural and cohesive funds from the EC, explained before, together with new loan-programs for particular projects by the European Bank of Investment;
- introduction of rates to the users of infrastructures (such as "soft tolls" or special tariffs in roads and higher prices in railroads tickets) which means a change in the "philosophy" of financing public works;
- creation of autonomic public entities to finance the investment in ports and airports (this will finally be translated in rates to the users, as well);
the private financing is still restricted to particular areas (such as water
treatment facilities, where several construction firms are already positioned).
Nevertheless, the concept of "financial engineering" -with private funds- occupies
still a very small part of the plan, as opposed to other european countries.

Together with the DPI other fiscal policies will help to the construction sector, in
particular in terms of transfers and taxes:

(a) transfers: during 1993 the Administration is facilitating new subsidies for
housing (about 560,000 million pesetas\(^{13}\)).

(b) taxes: the firms will be allowed to accelerate a 20% the rate of depreciation of
their assets in order to reduce the fiscal pressure.

Summarizing, the fiscal policies adopted, in particular the Director Plan for
Infrastructures, change relatively the scenario presented in the points 1.1 and 1.2
meaning a good opportunity for a certain recovery of the Spanish economy and
particularly for the construction sector.

\(^{13}\) Expansion, 1/21/93
CHAPTER 2. COMPETITIVENESS.

This chapter focuses on the structural factors that influence the productivity of the Spanish construction firms, such as labor, financial or fiscal costs; it will stress as well the impact of local union politics on the construction industry; finally, the relative effect of additional factors, such as investment in research and development or new contracting scenarios, will be addressed.

2.1. Exterior competitiveness of the Spanish construction firms.

The term "exterior" is used to denote comparison with respect to the construction firms of our neighborhood, in particular those of the EC countries; a figure usually found is that the EC average productivity is a 60% higher than in Spain\textsuperscript{14}. Regardless of the accuracy of that measure -difficult to obtain, in any case- the experts seem to agree in the insufficient productivity of the Spanish firms in order to compete with the rest of the EC countries. Which are the reasons for such a tough scenario? The answer, strongly related to the cost of output, can be divided into the next items:

a) Labor costs.

The wages, which represent about 65% of the added value of the firms, have raised in Spain during the last three years (1990-92) an annual average of 2.6 percentage

\textsuperscript{14} "Why are not we competitive?", ABC, 4/18/93
points above the average increase in the OECD countries. Such increase might have a rational explanation if it is followed by higher increases in productivity (technically possible in a country like Spain, with a level of development lower than the OECD average). In fact, the productivity has increased at Spain with a comparatively higher rate, but not enough to offset those differences in salary increases. The immediate effect is that the real unit labor costs have increased in Spain about an annual average of 1.8 points above the OECD countries during the last three years.

A second comparison can be established in terms of salaries versus prices; the next figures are relevant:

<table>
<thead>
<tr>
<th>year</th>
<th>83</th>
<th>84</th>
<th>85</th>
<th>86</th>
<th>87</th>
<th>88</th>
<th>89</th>
<th>90</th>
<th>91</th>
<th>92</th>
</tr>
</thead>
<tbody>
<tr>
<td>% increase in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wages*</td>
<td>11.5</td>
<td>7.8</td>
<td>7.9</td>
<td>8.2</td>
<td>6.5</td>
<td>6.4</td>
<td>7.8</td>
<td>8.3</td>
<td>8</td>
<td>7.2</td>
</tr>
<tr>
<td>inflation</td>
<td>12.2</td>
<td>9</td>
<td>8.2</td>
<td>8.3</td>
<td>4.6</td>
<td>5.8</td>
<td>6.9</td>
<td>6.5</td>
<td>5.5</td>
<td>5.3</td>
</tr>
<tr>
<td>differential</td>
<td>-0.7</td>
<td>-1.2</td>
<td>-0.3</td>
<td>-0.1</td>
<td>1.9</td>
<td>0.6</td>
<td>0.9</td>
<td>1.8</td>
<td>2.5</td>
<td>1.9</td>
</tr>
</tbody>
</table>

* from collective bargaining


The previous data show the annual increase in wages that resulted from the collective bargaining with unions, thus they represent the minimum rate of increase. The average, though, has been even higher (i.e. 8.5% in 1992, three points above the OECD and 2.5 above the EC countries).
In conclusion, wages have increased in Spain during the last three years well above than the real change in productivity, well above than inflation and well above than in the OECD and EC countries, probably as a consequence of: (a) social pressures from the unions -which is discussed in detail in point 2.2- and (b) necessity of developing a lot of projects simultaneously (Olimpic Games, Expo '92, high speed railway, etc.). This concentration of the increased demand in 3 years resulted as a consequence of the intrinsic nature of the projects (with a rigid schedule for 1992) together with a certain lack of temporal coordination by the different public Administrations.

The key issue is that this "salary boom" (in construction as well as in most of other industries) is having a strong negative impact, not only in terms of competitiveness for the Spanish firms, but also in terms of huge unemployment rates (presented in point 1.1), following the same pattern than the UK after the wage increase occurred during the late 80s.

b) Financial costs.

In the previous chapter it was highlighted how the expectations on devaluations of the domestic currency had made the interest rates to raise (in order to avoid the outflows in the capital markets). In fact, the interest rates borne by the Spanish firms are the highest in the EC, increasing the weight of the financial costs in the financial statements of the firms and destroying many initiatives of investment by decreasing the number of projects with internal rate of return higher than the cost of the debt needed for their financing.
Some estimations place the financial costs for the Spanish firms between 12% and 42% higher than the EC average\textsuperscript{15}. In particular, during 1992 there has been a dramatic increase in the financial costs of the construction firms: 50.7% in Agroman, 33.6% in Cubiertas, 31.8% in FCC and 16% in Dragados. The huge debt of the Administration with the construction firms (currently 800,000 million pesetas\textsuperscript{16}) is originating a serious financial constraint in terms of net working capital, pushing the firms to look for resources in the capital markets, at a high cost (much higher, for instance, that the official interest rate paid by the Administration in the -usual- case of payment delays).

Besides, the differences in the interest rates with respect to other EC countries have been highly attractive for the foreign capital (in short-term financial operations) which has been translated into an artificial overappreciation of the domestic currency (i.e. the real exchange rate of the Spanish currency has appreciated from 1985 to 1992 in a 23.1% with respect to the average of industrialized countries and a 19.3% with respect to the EC). This overappreciation, in turn, has had to negative effects:

(i) It has been feeding the expectations on devaluations which is a feedback to repeat the same process.

(ii) It has made Spanish firms lose competitiveness abroad.

The recent policy of realignments of the Spanish currency into the European Monetary System in order to resituate the peseta in a more credible value with respect to the other EC currencies will be positive in terms of competitiveness and

\textsuperscript{15} Same as previous footnote.
\textsuperscript{16} Expansion, 3/18/93
export-potential of the Spanish firms; yet this process will be slow, not an immediate response to the devaluations as some politicians seem to expect.

A last issue is also important regarding to financial costs: the allowed schedule to depreciate the equipment is much longer in Spain than in other EC countries, which is translated into comparatively longer periods to renovate the productive equipment.

c) Fiscal costs.

The tax pressure has increased 10.8 percentage points in the last decade, in such a way that the collection by corporate taxes in Spain relative to the total tax collection is only beaten by Luxemburgo, UK and Italy. Besides, increasing limitations have been introduced the last years in the investment tax credits.

The second source of differences with respect to the other EC countries in terms of fiscal costs are the ones paid by the firms in concepts of Social Security, layoffs and unemployment, which are between 20% and 40% higher than the EC average. In particular, Spain (together with France) are the two countries of the OECD in which the firms pay higher contributions to the Social Security relative to the total tax collection. In addition, during 1992 the contribution for unemployment has been increased and the costs of transitory labor incapacity -up to 15 days- have been transferred to the firms.
d) Other sources of additional costs.

The first one refers to the cost of energy, which has increased as a consequence of the higher level of external energetic dependency (including the nuclear energy imported from France) and the -to some extent, paradoxical- closing of several Spanish nuclear power stations. It has been estimated that the costs of energy for the Spanish industry fluctuate between a 10% and a 24% higher than the EC average.\textsuperscript{17}

The second additional cost for the Spanish firms is not easily quantifiable but it is still important: the difference in public services and infrastructures (mail, telecommunications, transports and accesses to the major cities) respect to other EC countries means a handicap in the transformation and distribution activities of the firms.

This analysis has presented the several sources that can explain at the present the differences in the relative cost of output between the Spanish and other EC countries firms. Two underlying reasons can be found behind these cost premiums:

(i) The fiscal policy and the way of financing the budget deficit during the last years (with foreign capital: overappreciation of the currency and high interest rates) are in the base of the high financial costs for the firms.

(ii) The rigidity of the labor market, highly unionized in construction, explains the differential in salary increases. A detailed discussion can be found in point 2.2.

\textsuperscript{17} ABC, 4/18/93
Another type of approach to explain the Spanish competitiveness differential relies more on historical reasons (i.e. economic and political autarchy during the pre-democratic stage; barriers to international trade, etc.), whose weight is unquestionable. Nevertheless, that type of analysis is out of the scope of this project; besides, the chosen approach -by comparison of several costs- gains in clarity by specifying the sources of inefficiencies and is closer to the present situation of the country in the relatively new context of the European Community.
2.2. Social constraints. Deal with unions and labor market.

When talking about the influence of the labor costs in the competitiveness of the Spanish firms, it was stressed the role of the unions in the collective bargaining that establishes the wage increases. To analyze the actual power of unions in construction it is worthwhile first to clarify the concept of unionized market in Spain (which differs substantially to the concept in US, for example). Its main characteristics are:

(i) The agreements adopted in the collective bargaining between representatives of unions and contractors are to be applied to all the workers of that sector and region, regardless of their belongingness to a union. Particularly, in terms of wages, no worker can be paid less than established in the annual bargaining for his category. From this point of view, it could be said that there is no real open-shop in construction since every contractor is to fulfill the agreement valid in the particular region he is operating.

(ii) The power of the unions does not arise from the number of their affiliates (which is relatively low) or from the control of large apprentice training programs and skilled workers (as in US). In contrast, it arises from the unions’ designation as exclusive bargaining agents and from a strong political support.

(iii) Historically, the unions appear in Spain -as in the rest of Europe- associated to a political party (i.e. the two main unions in Spain are UGT, with socialist origins, and CCOO, with communist origins). Nevertheless, there is a tendency at the present to divorce unions from political parties, together with a "reformist" role assumed by
unions (as opposed to "revolutionary" in their beginnings).

The existence of unions is not necessarily followed by a decrease in competitiveness; for example, some analysts in US defend the opposite vision, finding that the differences in costs for the same output between union and open-shop contractors are less than expected since the direct labor hours of the union trades are substantially less than those of the nonunion workers -due to the higher skill structure of the union site-, which partially offsets the wage premium.\(^\text{18}\) Nevertheless, this argument is difficult to export to Spain, where the unions are not characterized by controlling skilled workers or apprentice training programs.

The actual sources of disadvantage in terms of competitiveness for the firms arise from: (a) the bargaining on the annual salary increase and (b) the own structure of the labor market.

\textit{(a) Bargaining on the annual salary increase.} The traditional confrontation between CEOE (Spanish employers' association) and unions is being during 1993 tougher than in previous years -as a consequence of the economic recession and the definite opening to the EC market, which will require a higher level of productivity from Spanish firms-. The CEOE wants to establish the bargaining directly on the labor costs for the firms, instead of the individual wages (i.e. discounting the new increases in Social Security contributions from the increases in salaries). Besides, it recommended that this year the increases should be below the expected inflation (4.5%), that is, with losses in the purchasing power. In particular, CEOE establishes

\(^{18}\) Clinton Bourdon, "Union and open-shop construction: compensation, work practices and labor markets", 1980, based on studies by Mandelstamm and Speed.
a maximum increase of 2.3%, without possibility of revisions at the end of the year.

On the other hand, the two major unions (UGT and CCOO) have not accepted those figures, establishing a minimum increase of 5% with possibilities of revisions at the end of the year.

The final outcome during previous years (1987 to 1992) was an actual salary increase 1.6 points higher -on average- than the inflation of the year (as presented in point 2.1.a.), which has been negative in terms of competitiveness and disastrous in terms of employment. In this sense, the Commission of Ministers of Economy and Treasury of the EC (ECOFIN) has strongly recommended a negotiation with the local unions in order to get a higher collaboration in the restrictive salary policies.¹⁹

A good way of approaching the collective bargaining (far from the extreme positions of the CEOE and unions) would have to take into account the next issues:

- increases in salaries closer to the ones of the more stable EC countries, with a guarantee of higher purchasing power only as a function of a higher productivity;
- possibility of revisions in the salaries at the end of the year as a function of the deviations from the inflation objectives; and
- distribution of benefits by firms consistent with this policy, increasing at the same time that the nominal salaries; the remaining destinated to retained earnings for future investment.

¹⁹ El País, 1/19/93
(b) The structure of the labor market. The labor framework of Spain is probably the most segmented, rigid and bureaucratized in the EC.\textsuperscript{20} If the program of convergence with the Community is expected to be successful, the next changes have to be addressed sooner or later (either by collective bargaining or by governmental decision):

- Give facilities to the employers to decide about the functional and geographical mobility of the employees (which is highly limited at the present, requiring high wage premiums when changing the location of jobs). This is even more important in the construction industry, where job-sites are continually changing.

- Support, by agreements between employers and workers, new types of adjustments during recession times (i.e. give the possibility of lowering the salaries in order to avoid dramatic reductions on the payroll).

- Establish a cheaper and more flexible layoff.

- Remove the necessity of administrative authorization for the case of collective layoffs.

- Give priority to the part-time contracts rather than to temporary contracts (the latter have a negative effect in terms of identification of the worker with the firm and in terms of funds dedicated to training programs by the firms).

The application of these policies might be done gradually, establishing a trade-off between economic efficiency and social stability; one thing is clear, though: with the present rigidity of the labor markets it is, at least, unlikely that the Spanish firms be

\textsuperscript{20} "The labor market", Revista Economistas, volume 53.
able to compete with their European partners; further, the own stability of employment becomes -paradoxically- in danger with the current rigid regulations, imposing limitations to the flexible adaptation of the supply and to the use of idle factors.\textsuperscript{21}

\textsuperscript{21} Michel Albert, Expansion, 2/12/93
2.3. Other factors affecting competitiveness.

The success of the Spanish construction firms in the new European market will require as well a special attention to research and development, to quality, to the new financial engineering models and to the new systems of awarding public and private contracts. This part analyzes these requirements in the context of the EC market.

a) Research and development.

To illustrate the necessity of increasing the R&D in the Spanish firms, these are the arguments given by Lester Thurow, former dean of the Sloan School at MIT, during his last visit to Spain:\(^{22}\):

"[.../...] During some time you can compete being an economy with low labor costs, such as Greece and Portugal at the present, but no longer Spain. So, what will be the competitive advantage for Spain? In the world that is arising, it will be the power of the brain. Having the technological strategy to play the game. Korea, with a population similar to Spain, is a good example. Its strategy is to develop three or four worldwide competitive firms by research and development. Which are these firms in Spain? They don’t exist. I cannot see the Spanish industrial competitive strategy to face the XXI century."

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\(^{22}\) El Pais, 1/20/93
In fact, it was stressed at the beginning of this chapter how the labor costs have increased substantially in Spain during the last years, in such a way they are no longer an advantage with respect to other EC countries; it was also analyzed how the cost of capital is even higher with respect to the EC average. Thus, following the argument by Thurow, the only way to increase output will have to rely on changes in productivity, particularly in technological improvements, which require a high effort in R&D and education. Unfortunately, the average investment in R&D in the Spanish firms is less than 1/10 than the average of the OECD countries\(^\text{23}\). In particular, the ratio between private and public projects in R&D is very low in Spain compared to other EC countries, US and Japan:

<table>
<thead>
<tr>
<th></th>
<th>researchers in the public sector</th>
<th>researchers in the private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>71.5 %</td>
<td>28.5 %</td>
</tr>
<tr>
<td>Other EC countries</td>
<td>47 %</td>
<td>53 %</td>
</tr>
<tr>
<td>US</td>
<td>25 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Japan</td>
<td>44 %</td>
<td>56 %</td>
</tr>
</tbody>
</table>

Source: OECD report; 1988 data.

This lack of commitment by the Spanish firms in terms of R&D will doubtlessly be a source of disadvantage in the future. Representative enough of this handicap -both in R&D and educational levels- is the report by the Industrial Research and Development Assessment Committee of the EC (IRDAC) that establishes a forecast of the required growth in scientists, qualified personnel, engineers and labor in each

\(^{23}\)"Why are not we competitive?", ABC, 4/18/93
of the EC countries during the 90s in order to ensure a certain degree of convergence and competitiveness. These are the data comparing the required growth in Spain to that of the EC average:

<table>
<thead>
<tr>
<th>annual required growth in* :</th>
<th>Spain</th>
<th>EC average</th>
</tr>
</thead>
<tbody>
<tr>
<td>scientists</td>
<td>2.25%</td>
<td>0.75%</td>
</tr>
<tr>
<td>qualified personnel</td>
<td>2.75%</td>
<td>1%</td>
</tr>
<tr>
<td>engineers</td>
<td>3.75%</td>
<td>1.25%</td>
</tr>
<tr>
<td>labor</td>
<td>1.75%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

* forecast for the 90s


Those data give an idea of the comparative effort needed in Spain in terms of R&D and training of qualified staff.

The construction industry has been particularly low sensitive to the technological development. In 1980, except for some units, construction was almost the same that in 1960; the possession of specific technologies was not an element of differentiation among firms.

Nevertheless, the fast technological development experienced by other industrial activities is affecting as well to construction. The main innovations refer to:

- new products demanded, such as "intelligent" buildings, microtunneling, insulation systems, restoration, integral maintenance and environment. These new
demands are characterized by a higher technological and service-oriented component;

- new materials of construction, such as light concrete or glass fibre;
- machinery and construction systems, robotization in some building tasks;
- management information systems, in particular computerized reporting and tracking, CPM or cost analysis;
- design systems, based in new software technology.

All these fields offer good opportunities to invest in R&I; nonetheless, few construction firms have a permanent budget for R&I or a R&I department; the main efforts come from FCC, Dragados (in new materials, prefabricated concrete for acoustic panels, etc.), Huarte (in machinery and steel structures) and Agroman (in restoration systems). Yet this effort is clearly low with respect to the other EC countries, particularly in environmental-related technology.

b) Higher requirements on quality and responsibilities.

The demands for quality in the constructed product are experiencing an important increase in Europe and specially in Spain, where it has been traditionally an area with lower attention than in Germany, France or UK. Thus, high quality construction will be not only an ethical and contractual commitment with the client but also an essential condition to obtain a good profitability. In other words, the cost of "no-quality" will be paramount.
Besides, the concept of "guarantee of quality" by the firm is being introduced in the construction industry (with a certain delay with respect to other sectors), enforcing the quality "a priori" by a double way\textsuperscript{24}:

(i) the firm is required to publish a guarantee of quality manual; and

(ii) it must obtain the certificate of an external agency that will guarantee to the client the existence of the organization and the means able to reach the level of quality, both in products and services, required in the specifications.

The obtention -and maintenance- of this certificate of total quality will require important changes in the organization and standard procedures of the construction firms. Further, it might be used as a commercial weapon in Europe, meaning a competitive disadvantage for the firms that fail to obtain it. (In particular, several firms of France, UK and Belgium will likely have the total quality certificate in less than 2 years, while in Spain only Huarte has developed during 1993 a program to study the total quality of the firm).

The necessity of a high quality product will be enforced as well with harder contractual agreements in terms of periods of responsibility and type of guarantees.

A second approach in terms of quality, if expected to be transferred to the operating core level, is the concept of "quality circle" meetings at the job-sites, first introduced by Japan and practically unknown in Spain. In these meetings the opinion and proposals of each particular crew are taken into account in order to improve productivity and to increase the participation -and level of responsibility- of the

\textsuperscript{24} Mariano Aisa, "The future of the Spanish construction firm", October 1992.
workers. To encourage the participation of workers in the decision making concerning their tasks leads, in fact, to an increase in productivity and quality\textsuperscript{25}; this is explained in part by the new ideas or methods developed by the people that will actually do the work but also by the higher degree of motivation induced in the workers (mainly, if the task itself is highly horizontally specialized, then the results of this vertical job enlargement will be even more outstanding).

c) New financial models.

The different ways of financing the projects included in the Director Plan for Infrastructures were addressed in chapter 1: a high percentage from the public budget and only a small part from private funds. Nevertheless, this "philosophy" on financing cannot be sustained indefinitely\textsuperscript{26}; eventually, a plan of privatization will have to be taken into account, mainly if the goal is to reduce the public deficit without increasing taxes. Besides, since the public administration is using, anyway, the private savings -by issuing public debt- to finance the infrastructures, their partial or total privatization might become more efficient than the simple guarantee of return contained in the public debt\textsuperscript{27}. This will lead to look for new systems of collaboration between the public and private sectors, assuming the latter the total or partial financing of some projects.

\textsuperscript{25} Oglesby, Parker and Howell, "Productivity improvement in construction", 1989
\textsuperscript{26} William Garnett, CCRE lecture, MIT, 4/2/93
These new systems will be used not only in national-scope projects but mainly in a regional or local level (following the same process of other European countries), because the local and regional administrations have got power in terms of infrastructures and collective equipments, but at the same time they face a higher lack of resources than the central administration, which will likely push to develop mixed financing with the private sector.

At the present the private financing is restricted to particular areas of infrastructure such as water treatment facilities, where several construction firms are already well positioned. It is also true, however, that many projects are not attractive for the private sector (they can be "socially profitable" but not economically profitable); only a supportive policy might change the scenario, by considering the next issues:

- creation of a national insurance corporation for infrastructures;
- direct lending to projects that are not historically profitable;
- provide equity investment opportunities;
- investment tax exemptions.

The public subsidy for the projects with low profitability can be used to encourage the private financing. The subsidy has a clear limit, though, which is equivalent to the market rate of interest needed to finance the project directly by issuing public debt.

Not only the public sector but also the private client is beginning to require the participation of the contractor in the financing process of the project.
In conclusion, the capacity of supplying "financial engineering" models -either in collaboration with the public sector or in collaboration with a client- might become an important competitive weapon for those construction firms with possibilities of developing such systems.

d) New contracting scenario.

An important change is taking place in the systems of public bidding: the concourse is gaining share with respect to the traditional competitive bid. But the process of change will not stop here; following other EC countries, new bidding systems are being introduced in Spain and will likely become frequent in the future: select lists, concourses of project & construction and even lump sum bids. This means an advantage for those firms able to present technically and economically attractive proposals, with an increased attention to quality and schedule in the selection processes. (In the private sector the change is even faster, with the additional system of contract management, so common in US and UK).

Not only the types of bidding but also the Law of Public Contracts will eventually have to change; as a way of illustration, this law establishes at the present an average period of payment of 90 days, the longest in the EC. Besides, if the Administration does not fulfill this period, there is no penalty regulation (actually, it has to pay interests at the official rate, always below the real market interest rate). The current delay in payments has created a huge debt to the construction firms by the Administration, which explains in part the increase in their financial costs, presented previously.
Finally, some changes are taking place as well in the institutional and geographical distribution of the awarded public contracts. In fact, there is a certain decentralization of the public bidding process, from the central government to the regional communities and local councils (the figures by Seopan are presented in the previous chapter, page 16). This is requiring an structural adaptation of the national-scope construction firms towards more decentralized management systems. At the same time, the competitive position of the regional-scope specialized firms is being increased -sometimes supported by agreements with multinational european firms-. 
CHAPTER 3. INTERNATIONALIZATION.

The analysis of this part is focused on the international activity of the Spanish construction firms; the chapter describes the evolution of this market, compares it to the process undertaken in other countries, develops a case study of intervention abroad and establishes some strategies of internationalization depending on the characteristics of the market, possibilities of financing the projects and conditions of the country which is faced; then, the different types of supports to the construction exporting sector are stressed; finally, the possibilities of opening new markets—in particular, in East Europe—are addressed.

3.1. Evolution. Comparison with other countries.

3.1.1. Evolution and distribution of the exports.

The exports in construction started to take place for Spain in the early 70s; during the post-war years (40s to 60s) the country focused its activity on the economic recovery and industrialization with a high isolation from the rest of the world. The firms began to analyze their possibilities abroad just at the same time that the recession signs were felt in the domestic market (1974); this recession would after lead to a long crisis throughout ten years (1974-84), as presented in chapter 1.

The argument followed is classic: the major firms found themselves facing overcapacity problems (both in technical matters and human resources) which led to seek for new opportunities in foreign markets as a substitution for the national
activity. In 1981 a peak of 138,500 million pesetas volume of contracts was reached, and the maximum turnover of 155,000 million pesetas in 1984. The evolution of the external activity can be seen in the next graph:

International activity of the Spanish construction firms

(in billion pesetas)

Source: Spanish Association of International Contractors (AECI)\textsuperscript{28}, 1992 and Expansion, 4/12/93

There is a gap of 2 to 3 years between the figures given for the volume of contracts to those of turnover, which can be explained by the length of the projects together with the project delays and change orders.

The fact is that the argument previously given is also true in the opposite direction:

once that the national market begins a certain recovery (years 1986-90), the

\textsuperscript{28} The Spanish Association of International Contractors was founded in 1976, and groups together the main Spanish construction companies, regarding civil as well as building specialties, that perform works in foreign countries or focus foreign countries activity. Nowadays, the Association has 15 members, with an export volume of roughly 85% of total national.
international activity falls; the construction companies disregarded foreign markets dropping the level of exports to a minimum of 42,000 million pesetas volume of contracts in 1986 and the same figure for the turnover during 1990.

In other words, the exports in construction have been -and remain- considered as a complementary and marginal activity, which is damaging the potential to consolidate this market in the future. In fact, the penetration in third countries is always a difficult and slow process for the construction sector; it is quite different from selling a good abroad, get paid and lose every link with that country. The exports in construction require a long and complex bargaining process, knowledge of the country and its people, long periods "in situ"; thus, if the Spanish firms leave eventually their place abroad, it will be difficult to recover positions after some years, since new firms will have settled in that country. Unfortunately for the Spanish firms, this vision is supported by their main European competitors who keep permanently a high volume of international activity (for instance, some French firms reach the 80% of their sales abroad) avoiding the situation of "communicating vessels" described for Spain.

A second interesting aspect to analyze is the geographical distribution of the exports: when the activity started, 1974, until 1981, Latin America prevailed in an absolute manner, covering in practical terms 90% of the foreign activity29; both historical and idiomatic reasons can explain this fact. Afterwards, the activity of this area decreased in favour of North Africa and the Middle East because important contracts in civil works and building were carried out in Algeria -that became the

first client of the Spanish exports- as well as Libya, Morocco, Tunisia and Egypt. The next graph shows the geographical distribution of the exports in construction during the last decade:

Volume of contracts abroad of the Spanish construction firms

(in million $)


Since 1985 some political difficulties appear with Algeria and Libya, which led to a decrease in the international activity. Besides, 1986 to 1990 are the years of construction "boom" in Spain, which is not helpful for the contracts abroad, as explained previously.

Nevertheless, the figures of the last years show a recovery in exporting construction (from 1990 to 1991 the trading volume increased 81% and from 1991 to 1992 it increased 43%\textsuperscript{30} ) following the recession in the national market, as expected. It is

\textsuperscript{30} AECI, 1992 and Expansion, 4/12/93
interesting to note how the geographical distribution of the new external contracts has changed; in 1991 and 1992 the distribution was:

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Africa and Middle East</td>
<td>6%</td>
<td>17%</td>
</tr>
<tr>
<td>Latin America</td>
<td>65%</td>
<td>45%</td>
</tr>
<tr>
<td>Europe</td>
<td>29%</td>
<td>34.5%</td>
</tr>
<tr>
<td>Far East</td>
<td>-</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

Source: Expansion, 4/12/93

The next changes seem relevant with respect to the previous period:

- The exports to the Middle East and North Africa fall considerably, except to Egypt, Morocco and Algeria (Dragados has recently won a $170 million contract to build a dam in Algeria).
- After many years, Spanish firms enter in the Far East market; in fact, in 1992 Huarte got an 80,000 million pesetas contract in Indonesia.
- The Spanish presence in Latin America is restored, with important projects in Ecuador, Mexico, Puerto Rico, Chile, Bolivia, Honduras and Dominican Republic.
- The increased weight of Europe is a good sign supporting the tendency of the Spanish firms in taking part in European projects, which is relatively new. The European market has gained momentum due to the merging and acquisitions process and collaboration agreements signed with nearby countries companies. There are also some steps in East Europe, with acquisition of firms of the former East
Germany and Hungary.

A fact should be highlighted regarding the previous analysis: a deep restructuring is taking place in the international construction markets, since the exports to industrialized countries are increasing relative to the less developed countries: during many years, the international activity of many of the European construction firms was limited to developing countries, where there was not a competitive or organized domestic supply; the participation in industrialized countries was difficult due to the local characteristics of construction, the great diversity of regulations and practices regarding contracts and the protectionist behavior of the public clients. Nonetheless, two facts have changed this scenario: (1) the difficulties in political and financial terms of many developing countries and (2) the process of consolidation of the Common Market within the EC. For these reasons, many contractors of the EC -first, those with more size and international experience; then, the highly specialized firms- have looked for strategies of "europeization" of their activity. This process is being slower in Spain yet the figures given previously -the third part of exports in construction went to Europe in 1992- are stressing the same way of "europeization" followed by other EC countries.

At the same time, this new structure towards Europe can lead to a stronger selection among the firms, in favour of those ones that can supply a good technological level -which makes easier the specialization and quality requirements- together with good financial conditions. On the other hand, with the unification of criteria about responsibilities and guarantees within the EC, the relative advantage of the national firms will decrease, as will do the local component of the construction activity.
3.1.2. *Comparison with other countries.*

So far, the evolution and distribution of the Spanish exports in construction have been addressed, but what about their relative importance with respect to other EC countries? The answer is that Spain plays a very poor role in the context of the European exports. The next graph compares the volume of exports of the biggest EC countries, showing the clear predominance of France, followed far away by Germany and UK.

Volume of contracts abroad. Main EC countries.

(billion $)

Source: European International Contractors (EIC)\(^\text{31}\)

France is certainly the most aggressive country of Europe relative to construction exporting: in 1990 its figure of contracts abroad was $9 billion, from which Europe

\(^{31}\text{The EIC groups together the national federations of construction exporting companies of Western Europe, including AECI presented in previous footnotes. The rest of data presented about Europe also come from EIC statistics.}\)
absorbs a 30% of its exports and North America a 15%; the restructuring explained previously -exports to industrialized countries are increasing relative to the less developed countries- is also true for France: in the early 80s the exports were concentrated in North Africa and Middle East, while at the present the weight of its former african colonies is decreasing in favour of industrialized countries, where the intervention is achieved by branch offices or subsidiaries.

Germany has not been traditionally an exporting country in construction (see previous graph); only in the last years there has been a relevant increase -contracts abroad of $6 billion in 1990- due to the new contracts in North America (that absorbs 43% of German exports) and Europe (that absorbs 29%). The German construction firms have begun a certain process of "europeization" by acquisition of local contractors in other EC countries, equity positions and joint ventures.

The United Kingdom has occupied the second place in the European exporting ranking until 1989 (now beaten by Germany). The UK main market is US (47% of the total contracts abroad) which is a sign of the high quality level of the British exports, since the American market is difficult for foreign firms and the penetration is only possible by acquiring local contractors or by taking part in projects of a high technological component. Together with the US market, the British firms are consolidating their positions in the EC market and looking for new opportunities in East Europe.

Italy is increasing also its participation in Europe, that is currently its main client (36% of the contracts abroad). The weight of the developing countries is still an
important part of the Italian exports, though; this leads to a predominance of the small-size contracts given the financial problems that face most of the less developed countries. The high exporting activity of Italy is due to its creativity and commercial agility, to the supports of its Administration, to the exporting of technology and to the financial offers that usually the firms submit together with the technical proposal.

This brief description of the construction exporting activities of the main EC countries gives the idea of the context in which Spain is expected to compete. Nevertheless, just a comparison of the volume of exports of Spain relative to its EC competitors shows the actual position of extreme disadvantage for the Spanish firms; the next graph shows the shares of contracts abroad for the five biggest EC countries, which are being compared.

% of contracts abroad. Main EC countries. 1990

![Pie chart showing the percentage of contracts abroad for each country.](chart.png)

Source: European International Contractors (EIC).

It is surprising the lack of correlation between the weight that Spain has with respect to the total turnover of construction in Europe (10 to 11% of the total) and
the small percentage achieved in exports (about 2.5% with respect to the five countries presented, and 1% with respect to the whole Europe). For instance, Spain is below Belgium and Holland in volume of exports while it is well above in total turnover (actually, Spain occupies the fifth place in construction turnover after France, UK, Germany and Italy).

The reasons to explain this unbalance could have two different sources: (1) a wrong strategy from the main Spanish construction firms that have considered the international activity as a marginal one, just for the periods of low internal demand; and (2) a lack of support to exports in construction by the Spanish Administration, compared to the advantageous treatment given to other European firms by their Governments. Both aspects-strategies abroad and supports to the exporting sector-will be discussed in detail in the third part of this chapter "a way of internationalization".
3.2. Case study of intervention abroad.

After studying the macrofigures that represent the evolution of the Spanish construction exporting sector and previously to analyze the different strategies of the firms in their process of internationalization, it is worthwhile to develop a case study ("microfigures") in order to highlight the problems -mainly financial- that some Spanish companies face while performing a project abroad, as well as the supports that the Spanish Administration can provide. The project chosen is the subway in Medellín (Colombia):^32

- The client is the local Administration (Colombian Government + Medellín City Council) represented by the transportation company Empresa de Transporte Masivo del Valle del Aburra (ETMVA).
- The contractor is a consortium called *Metromed*, set of Spanish and German companies in joint venture:
  - Entrecanales (Spain): civil works; also its subsidiary Iberinsa for the design;
  - Fomento de Construcciones y Contratas (Spain): civil works;
  - Gywidag (Germany): civil works;
  - Siemens (Germany): rolling material and installation;
  - Man (Germany): rolling material and installation;
  - Ateinsa (Spain): rolling material. (This firm is a subsidiary of the French company Alstom).

^32 Part of the information included is based on a personal interview with Mr. Víctor Relaño, manager of the railroads division of Iberinsa (subsidiary firm of the company Entrecanales y Tavora).
• The initial contract was 65,000 million pesetas.

The main problems that the companies responsible for the civil works found were related to a dramatic increase in the cost of the project, as a consequence of both technical and economic reasons: changes on the initial alignment and mainly a higher local inflation rate than the one considered in the revision of prices. The total amount that the consortium Metromed demanded as a compensation for those overcosts was 33,000 million pesetas, that is, almost a 50% increase on the initial contract.

The difficult financial situation of Colombia during the last years was translated into a refusal by the client (represented by the company ETMVA) to the requirements of the consortium responsible for the project. Since the firms involved were not able to finance the project -interests included- for a long period, the consortium decided to paralyze the construction when a 35% of the project was remaining (May, 1990), assuming that the Colombian Government would react quickly looking for new ways of financing.

Unfortunately, that was not the case and the project remained paralyzed for more than two years, with huge losses for the firms involved. It was finally the Spanish Government who, in February 1992, took part in the conflict as an intermediary between the Colombian authorities and the contractor-consortium; the solution proposed was the completion of the project after the payment of the overcosts by the ETMVA, supported by a financial package from the Spanish Government given in a double way\textsuperscript{33}: 

- 63 -

- 30,000 million pesetas in commercial credits (with 18 years to be repaid and interest rates OECD); and
- 3,000 million pesetas in funds to support development (FAD).

Further, the Spanish Government offered to Colombia the possibility of renegotiating the conditions of its external debt with Spain (close to 21,000 million pesetas before the new credits). This special treatment to Colombia is equivalent to interchange financial risks (the probabilities that Colombia will not repay its debt with Spain are high) for political risks (the Spanish Government was trying not to worsen the relations of Spain with Colombia and other Latinamerican countries in a symbolic year like 1992).

The German Government also offered an additional package of DM 50 million in concept of funds to support development.

The fact is that the agreement proposed by the Spanish Government addressed the next issues:
- continuation of the project, beginning in mid-February, 1992 and with a duration of 3 years to completion;
- payment of the compensations for overcosts required by the consortium Metromed (part of this payment could be done with the financial packages mentioned above);
- the financial conditions for the remaining period (the estimations of the total final cost of the project vary between 190,000 and 210,000 million pesetas

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33 El Pais, 2/8/92 and Cinco Dias, 2/7/92
depending on the huge financing interests generated during the period of stoppage, that is, about three times the initial contract; and

- a formula for an eventual international arbitration in the case of future disagreements between the Colombian authorities and the consortium.

At this point there was a division among the firms that form the consortium Metromed: the companies responsible for the rolling material supported strongly the agreement (since it would have been difficult for them to sell the 22 trains and additional materials -that were already fabricated- to a different client than the original) while Entrecanales -the firm that had invested more in civil works- considered that the procedure established for the international arbitration to fix the compensations and revision of prices was insufficient, as were the recognized overcosts originated for the delays in the construction of the project (Entrecanales asked for a compensation of $70 million in this concept, which was not accepted by ETMVA, representative of the client); with these arguments, Entrecanales did not sign the agreement, while the rest of the firms did.

The strategy of Entrecanales had a double objective: (a) change the conditions of the agreement in order to obtain a more reasonable compensation (including the overcosts for the delay) and (b) negotiate directly with the local authorities the concession of other projects in Colombia that could compensate as well the losses of the firm during the Medellin subway project.

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34 Cinco Dias, 2/7/92.
35 Cinco Dias, 3/11/92
The Spanish Government, facing the refusal of Entrecanales, plays also its cards: begins conversations with other major Spanish construction firms that could continue with the part of civil works of the project that corresponded to Entrecanales, in particular with Dragados and Ferrovial\footnote{Cinco Dias, 7/8/92. This information was not corroborated by the mentioned firms, though.}. Such attempt was finally unsuccessful, and the Spanish Government begins to restate its initial intention of financing the project, since still in July 1992 no Spanish firm had accepted to replace to Entrecanales.

A last issue seems relevant to solve this puzzle: the Colombian president intended to visit Spain in October 1992 to sign the new agreements of bilateral cooperation with Spain (i.e. new credit lines for Colombia); probably this was the determinant that led the Colombian Government to finally accept -through ETMVA- the compensations required by Entrecanales (either in the form of $70 million or in the form of new contracts awarded), making possible that this firm signed finally the agreement previously accepted by the rest of the consortium (in particular, Siemens did also a role of intermediary between Entrecanales and ETMVA). The construction of the Medellin subway was restarted on September 1992\footnote{Cinco Dias, 9/17/92.} (28 months after its paralysis and one month before that the bilateral cooperation agreements were signed between Colombia and Spain).
The main conclusions that can be drawn out from the previous example are:

a) The difficult financial situation of the receiving country (in this case, Colombia) is a major constraint for the international contractors, that can find themselves immersed into a neverending bargaining with the local and domestic Administrations, the representative of the client and other construction firms. (The point 3.3.2. of this chapter will address different formulas to finance the projects when the demand becomes insolvent).

b) The way finally adopted to solve the financing of the project relies on the export credits given by the exporting countries, in this case, Spain and Germany; such credits appear highly linked to the political orientation in foreign affairs of the countries involved and, of course, to the participation of domestic firms in the project. (A further discussion about the exports credits and other supports to the exporting companies can be found in the point 3.3.3. of this chapter).

c) A joint venture with a certain cohesion can be damaged by the intervention of a third entity (in this case, the Spanish Government) that creates a conflict of interests among its members (in this case, firms responsible of rolling materials vs. firms responsible of civil works). Obviously, a last task of Entrecanales will be to smooth the relations with its partners in the project, that had signed the agreement earlier and had made pressure to Entrecanales during the interim period.
d) The tactic followed by Entrecanales of delaying further the signature of the agreement (permanent "tour de force" with the Colombian Government) in order to receive the compensations for the dramatic delay overcosts was finally successful, since external political interests of that Government played powerfully in the desired direction.

e) The example also gives the impression that there is a certain "tacit agreement" among the major Spanish construction firms of not damaging the interest of another firm in a project that is paralyzed by external causes (at least, it is surprising that the Spanish Government could not find a substitute for Entrecanales).
3.3. A way of internationalization.

The ways and patterns of internationalization addressed in this part will include: (1) strategies for the Spanish construction companies to enter foreign markets; (2) ways of financing the projects abroad; (3) required supports to the construction exporting sector; and (4) the possibilities of introduction in emerging markets, such as the East European economies.

3.3.1. Strategies to enter foreign markets.

The position of disadvantage for the exporting construction activity of the Spanish firms relative to their European competitors was stressed in the first part of this chapter. The first issue to consider in order to change -or, at least, to balance- this scenario is the strategy to follow when entering foreign markets; the process of internationalization as well as the process of "europeization" of the Spanish firms can be achieved by four different ways: (a) presenting a bid in a foreign country through a branch office; (b) establishing joint ventures with local partners; (c) acquiring a part of the capital of a foreign firm; and (d) acquiring a local contractor. The analysis of each way is as follows:

a) Presenting a bid in a foreign country. Currently this is the most difficult way, mainly if the firm bids alone (i.e. not associated with local companies). The diversity of regulations and practices in the contract processes together with the protectionist attitude of the public clients make it difficult to success. However, some of these constraints will eventually change in Europe: both the regulations of the European
Community trying to unificate criteria about bidding, responsibilities and guarantees and the political pressures looking for a higher transparency in the markets can lead to the more frequent awarding of contracts to foreign firms.

Yet this way of penetration will be slow and costly and only seems appropriate for those organizations that can offer a particular technology that the foreign country lack of.

Relevant contracts won by Spanish firms bidding alone in Europe are the subway of Toulouse in France and offshore platforms in the North Sea.

b) Joint ventures with local partners. This type of penetration allows for:

- a fast internationalization, avoiding the high costs of acquisition or installment in a third country;
- the penetration in difficult markets, such as Germany or Italy;
- collaboration with the countries of East Europe; and
- the enlargement of activities, mainly in civil works.

The joint venture can become eventually a long-run agreement, focused on particular areas such as research and development, interchange of technology, touristic promotion, etc. There are several examples of this process between Spanish and other EC countries firms: Auxini with Bilfinger Berger (Germany); Ferrovial with Hochtief (Germany); Agroman with Philip-Holzmann (Germany); Sener with John Brown (UK), etc.
Both the joint venture and a long-run agreement can be considered a good way of internationalization for the Spanish construction firms, which in general lack of a strong financial situation that could allow for acquiring local firms or installing alone in a third country.

c) Acquiring a part of the capital of a foreign firm. This is a relative type of internationalization because it does not allow for bidding in the foreign country as a local firm would do and the buyer has no real access to the control of the foreign firm. Nevertheless, it can be a good way of diversifying the capital together with establishing a presence abroad that might be expanded in the future.

However, important risks are associated with this kind of "equity positions" investment: a relative easiness to acquire a part of the capital of a foreign firm might be a consequence of a weak financial position of that firm, position sometimes unknown for the foreign buyer. This is exactly the case in the acquisition of a part of Lilley (UK) by the Spanish firms Cubiertas and Entrecanales\textsuperscript{38}: both firms invested 2,700 million pesetas to buy a 21.5% of Lilley in July, 1991; Lilley acquired as well a 1.9% of Cubiertas in September, 92 and just four months later Lilley declared stoppage of payments with debts over 14,000 million pesetas. The British firm had to sell all its assets including its part of Cubiertas (which was rebought mostly by managers of this firm). This "wrong acquisition" has not affected strongly to the financial position of the Spanish firms, but it has had negative effects on the strategy of external expansion of both firms, not only because Lilley was their main investment abroad but also because they were bidding for several projects in Egypt.

\textsuperscript{38} Expansion 1/8/93, 1/13/93 and 2/22/93
and Hong Kong in a joint venture with the British firm.

d) Acquiring a local contractor. This type of penetration allows for:

- the establishment in a wider geographical area;
- the opportunity of achieving a European dimension within the EC Common Market context;
- a faster expansion of the firm, achieved through external subsidiaries, compared to the direct exports.

Most of the major Spanish construction firms have followed this way in Portugal, yet the examples in other European countries are scarce: Ferrovial in Italy and Huarte in the former East Germany; also Dragados has been negotiating to buy the French firm Genest, but the relatively difficult financial situation of Genest39 is discouraging for the Spanish firm, that does not want to repeat the bad experience of Entrecanales and Cubiertas with the British firm Lilley, explained before.

This type of penetration is obviously costly compared to a simple joint venture but it presents an important advantage: it ensures a stable presence abroad, which is precisely the weakest aspect of the Spanish construction firms, that have traditionally considered the foreign markets just as a complement for the periods of domestic recession (see point 3.1.1.).

The different ways of internationalization presented can become an actual strategy of the firm depending on its own characteristics and specialty and on the country in

39 Expansion, 1/28/93
which the project takes place. In particular, the available ways for the Spanish companies to enter in other EC countries - and in developed countries in general - are highly constrained by the local components of construction (knowledge of the market and clients, local procedures in contracting, etc) together with a strong competition during the bidding process with a qualified and organized local supply; hence the penetration in a developed country requires the support of a "local center" of operations, reducing the possibilities to: (a) joint venture with a local partner; (b) acquisition of a local contractor and (c) creation of a small subsidiary in the country that will grow with local resources.

In contrast, the exports to less developed countries can be direct: the firm presenting a bid alone and performing a project in which the local supply would be less efficient or in which a particular technology that cannot be supplied by the local contractors is required. To what extent the firm will use local resources - by increasing the level of subcontracting - will depend on the project itself and the country faced. For instance, in North Africa there is an excess supply of labor but - depending on the specifications and quality requirements - the firm could have to provide higher skilled workers together with technology and management capacities, that is, to bring all the resources for the project. (This is exactly the case in some of the projects performed by Ferrovial in Egypt\textsuperscript{40}). Dissimilar, in Latin America the usual approach is to provide technology and management services yet make use of the local relatively high-skilled workers.

\textsuperscript{40} Mr. Diego Valle, manager of the international division, Ferrovial. Personal interview.
3.3.2. Financing the projects.

So far, different strategies of internationalization have been presented assuming the financing of the project as "given"; however, that is not currently the case in many developing countries, in which the financial difficulties have imposed a rule: "if you want to build that project, look for the money for it"; the availability of a financial package becomes one of the major conditions to win a bid. Sometimes the financial support will come from international institutions such as the World Bank, or from exports credits given by the Administration of the exporting country: this type of financial supports will be discussed later. But frequently the financial support has to come from the project itself, giving birth to the type of contract called B.O.T. = Build + Operate + Transfer:

- Build the project, including the design.
- Operate the installation object of the project, including the maintenance.
- Transfer the installation to the contracting organism, at the end of the concession period.

These projects, that are financed with the inflows generated by their own operating, represent a strategy for the firms of changing the product instead of changing the market when that market has become insolvent. Such strategy has been followed successfully by the major construction companies from UK and Germany and it can be a good chance for the Spanish construction firms working in developing countries (which still represent a high percentage of their international activity, as presented in the first part of this chapter).
A B.O.T. contract can result as a consequence of:

- a constraint in the public budget of the country;
- privatization arguments;
- projects that are not economically feasible in the short-run;
- obtention of external financing to speed up the development of a country; and
- the urgency of creating infrastructures.

The advantages for the governments of the receiving countries are:

- transfer to the users the cost of the project;
- obtain an efficient external technology;
- ensure the feasibility of the operation;
- transfer to the private sector the operational risks;
- reduce the costs of the investment and operation; and
- have the availability of the public budget for other social aspects.

Nonetheless, a B.O.T. project involves a complex process in which several entities take part:\n
- investors, that provide a capital to the concessionaire company, and will receive dividends during the years of private operating;
- financial entities, that lend funds to the concessionaire company, receiving the market interest;
- a concessionaire company, which becomes the center of the operation;

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\(^{41}\) Mr. Julian N. Olias, "Planification and International Bidding", Polytechnic University of Madrid lecture, June 1993.
- users, that provide the inflows during the concession period;
- construction companies; and
- operating and maintenance companies.

The next sketch reflects the process:

Source: Mr. Julian N. Olias, "International Bidding", 1992
The acceptance of a B.O.T. contract gives also the opportunity to the construction firm -if its financial capacity and diversification allows for it- of being involved in the whole project, achieving economies of scale in overhead expenses, optimization of the different phases of the project and synergies in general, all of which can improve considerably the profit margins. Further, the close cooperation with investors, financial entities and local Government can ensure a proper fulfillment in timing, financing and costs as well as reduce some of the risks involved in the process.

On the other hand, the risks faced by the construction firm in a B.O.T. operation -if this firm assumes the responsibility for the whole project, including the phase of operating the installation- are certainly higher than in the "traditional" ways of penetration described before. Together with the risks in the construction process (delays, overcosts for inflation or exchange rate risks) there will be additional factors such as the eventual rejection and negotiation of the feasibility study by the local authorities and the risks during the period of operating the installation (i.e. the inflows for tariffs can be lower than expected if they are linked to the market conditions instead of depend on the contract). Besides, the risks associated with the economical and political stability of the country are much higher since the period of construction + operation is always long (i.e. economic risks: devaluations of the currency, changes in the interest rates, unexpected inflation, convertibility of the inflows by tariffs, etc; political risks: changes in the policies about repatriation of profits, lower tariffs as a social constraint or prices established for political reasons).
It is the concessionaire company who has to transfer these additional risks -as much as possible- to the local Government, when signing the B.O.T. contract. In particular, the conditions of the concession can be fixed with an statute, including the level of tariffs (like the project Eastern Harbour in Hong Kong) or by contract (like the North-South highway in Malaysia); the statutory conditions have advantages in terms of legal protection for the project, but the introduction of changes will be slow and costly.

The major B.O.T. projects are usually related to toll turnpikes, bridges and tunnels, railways, gas pipelines, power generation and distribution, garages and urban projects; although they are a good way for the developing countries to raise funds in order to improve their infrastructures of transports and energy, the system has extended to several fields and countries of the international construction, such as the London City Airport, the Royal Dock in East London, the English Channel Tunnel, the North-South turnpike in Malaysia, the Lakhra Coal Projects in Pakistan or the thermic power stations of Turkey.\footnote{With respect to Spanish firms, Dragados and Mecapena have established a joint venture for a $300 million contract consisting of the construction of a coal terminal for the thermic power station of Acapulco (Mexico) and a concession period of 30 years to operate the installations.} With respect to Spanish firms, Dragados and Mecapena have established a joint venture for a $300 million contract consisting of the construction of a coal terminal for the thermic power station of Acapulco (Mexico) and a concession period of 30 years to operate the installations\footnote{Expansion, 3/12/93.}.

The initiative to apply more intensively for this kind of self-financing projects in North Africa and Latin America (for instance, the process of privatizations in Argentina is a good opportunity) corresponds to the Spanish construction companies
and it can be a good strategy to overcome to some extent the difficult financial conditions of many countries, which is currently the main obstacle for the international contractors.

A second type of transaction to overcome the financial difficulties of many developing countries is the countertrade, in its several forms:

- **Barter or goods interchange.** It presents many problems in terms of value of the goods, timing, interests, etc. but sometimes it is the only way of receiving payment; for instance, some Spanish contractors -Dragados and Ferrovial, among them- received their payment in crude oil for the projects performed in Libya and Algeria during the early 80s.

- **Buy-back,** that establishes the payments with part of the products obtained with the installation object of the project (i.e. industrial plants). The operation is complex and risky, since the gap between the initial investment and the inflows is usually very long.

- **Counter-purchase and advance-purchase,** in which there are two different contracts for the barter, both payable in currency; this avoids some of the problems of the simple barter.

- **Bilateral agreements or "clearing".** These agreements are established between two countries for a given period (it is wider than a single private

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44 Mr. Manuel Valdes, "Protection systems and ways of payment", October 1992. Only the types of countertrade used in the construction activity will be mentioned here.
transaction) and the payments are performed through the Central Banks of both countries, that will face balanced accounts at the end of the period, after several transactions in both directions.

Summarizing, the strategy of the exporting firm is not limited to find the best way of entering a foreign market but also -and sometimes, even more important- to find the way of financing the projects in that country, using a B.O.T. contract, a countertrade agreement or a financial package of export credits which is discussed in the next pages.
3.3.3. Supports to the exporting sector.

Together with the necessity for the firms of choosing a focused strategy that can ensure their stable presence abroad, there is a second issue that is in the origin of the weak position for the exporting construction activities of the Spanish companies: the lack of support by the Spanish Administration compared to the treatment given to other European firms by their Governments. By way of example, in France the Administration provides economic resources, specialized representative personnel abroad as well as political, fiscal and insurance coverage support for the exporting activities. The same is true for Italy and UK, that reach high levels of competitiveness abroad exporting technology. In contrast, in Spain the construction activity was simply not considered in the plan of internationalization; the argument given is that other sectors have a higher percentage of return on their exports and a higher added value for the products they sell.

What is frequently forgotten is that a construction contract abroad includes a set of goods and services which create important inflows for the country, such as:

- Spanish equipments incorporated;
- Spanish materials;
- salaries paid in Spain;
- financing of interests during the period of construction;
- overhead expenses;
- repatriated profits;
- insurance and taxes paid in Spain;
- depreciation of equipments during the projects; and
- cost of transports, if done in Spanish ships.

The part exported of a construction project -though depends on the project itself and the country of destination- is above a 40% of the contract and in some turn-key projects it can reach an 80 to 85%\textsuperscript{45}. Besides, the performance of construction projects abroad presents positive externalities: it allows for a diffusion of Spain as a technologically advanced economy and the stay abroad of technical staff for a long period is a good way of achieving an internationalization of the Spanish personnel and a solid background in external trade.

The types of supports to the construction exporting sector can be classified into five categories\textsuperscript{46}: (a) financial support; (b) insurance for exports; (c) fiscal support; (d) training; and (e) commercial promotion. The analysis of each step is as follows:

\begin{itemize}
  \item a) Financial support.
\end{itemize}

\begin{itemize}
  \item Export credits. The regulations of the OECD are a framework for the western countries regarding the credits for exports; in particular, there are two norms that harden considerably the financial conditions of the credits:
    \begin{itemize}
      \item the elimination of the credit lines for the countries with an income per capita over $2,460 \textsuperscript{46}, which puts aside countries such as Mexico, Venezuela
    \end{itemize}
\end{itemize}

\textsuperscript{45} Ms. Alicia Revenga, "Exports in Construction", Polythecnic University of Madrid lecture, June 1993.
\textsuperscript{46} Idem as previous footnote.
and Argentina, that were receiving the Spanish credits called FAD (funds to support development);

- the elimination of the credit lines for those projects that can reach a return on their investment.

- **Commercial credits.** The conditions for these credits are harder in Spain than in other EC countries: only a 15% of Spanish materials can be included in a project abroad, while for other EC countries the percentage is 30% or more (for instance, France can provide up to 40% of domestic materials in a project abroad). It is in this context that a unified regulation of the EC will probably benefit to the Spanish exports in construction.

- **The funds to support development (FAD).** This is the most important instrument for the construction exporting sector: in 1991, 72 billion pesetas were destined to this type of credit. The countries that have been receiving these funds are\(^{47}\): Mexico (line of credit up to $2,500 million), Venezuela ($1,800 million), Argentina ($2,000 million), Chile ($1,200 million) and Morocco ($1,250 million). There are also smaller agreements with Ecuador ($350 million), Tunisia ($100 million), Bolivia ($200 million), Peru and Algeria. An special agreement was signed as well with Colombia in 1992 to support the completion of the Medellin subway, as presented in the case study in the point 3.2.

The line of credit for Mexico, Venezuela and Argentina will be eventually cut out following the OECD normative presented previously.

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\(^{47}\) AECI (Spanish Association of International Contractors), Nov. 1992.
Agreements for cooperation. These agreements consist of mixed credits (FAD + export credits) and establish all the financial conditions for a project; during the last years the main agreements for cooperation have been signed with Argentina, Morocco and Mexico and they reflect an orientation of the long-run foreign affairs politics of Spain, mainly towards Latin America and North Africa. In particular, the Spanish Government has committed to sign new agreements with several Latinamerican countries during the next 6-7 years and for a total amount of about $4 billion.

However, the practical application of these agreements is complex, since the receiving countries establish a list of the eligible projects, which are frequently small size and do not benefit to the Spanish exporting sector as much as it could be expected.

International financing organisms. Together with the credits mentioned above, Spain contributes considerably to several multilateral financing centers, such as the World Bank, the BID, the African Bank, etc. In particular, the International Finance Corporation (I.F.C.) of the World Bank provides financing, assuming specific risks of the project and working as a financial consulting. The Multilateral Investment Guarantee Agency (M.I.G.A.) provides guarantees for the capital of foreign investors in developing countries.

Also the European Community offers subsidies or complete financing for some projects (for instance, Algeria and Tunisia have special agreements with the EC for hydrolics, transportation and sanitary programs). This type of projects followed by a
financial package of the EC are very interesting for the Spanish firms.

The support of the Spanish representative personnel abroad (i.e. information about the current bids) is important in order to ensure that Spain obtains a return that corresponds with its contribution to these international organisms.

b) Insurance for exports.

The credit insurance for exports is provided by the Spanish public agency CESCE. That agency has the compromise of returning all or part of the capital to the lending banks, in case of unpaid bills by the receiving country; this agency uses more conservative criteria than its European partners, in the sense that it establishes the profitability of the project as the priority, instead of being a center to support exports (thus, showing a deficit, as in other EC countries).

The agency provides different types of insurance: "on-site" policy, exchange policy or investment coverage policy, though their effective application is difficult and slow compared to other EC countries, such as France or Italy (i.e. the required judgments from the receiving country assuming the nonfulfillment of the client are frequently impossible to obtain for the contractor).

c) Fiscal supports.

The fiscal support for the exporting construction firms has been damaged by a double way:
- 85 -

- The reduction of corporate taxes for the firms with exporting activities has been removed; the construction companies are currently asking to the Administration for better conditions in the so-called "plan of internationalization".

- The sector had also an advantage with a reduction of the income taxes for the personnel working abroad; this reduction was removed in 1991, which means a lower incentive to work in a foreign country for the Spanish technical staff and a higher cost for the firms that have to compensate to their workers abroad or substitute them by local personnel.

In contrast, there is an advantageous fiscal treatment in other EC countries for their personnel abroad, which decreases again the international competitiveness of the Spanish firms compared to their neighbors'.

d) Training.

There are two important aspects for the professional training of the staff destined abroad: the courses in international trade (included in the plan of internationalization) and the grants abroad supporting the study of the construction exports; both the major firms and the public agencies should consider this training as paramount if the process of internationalization is expected to succeed.

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48 Expansion, 4/12/93
e) *Commercial promotion.*

The foreign trade agency (ICEX) is the Spanish institution that in theory is responsible for this mission; unfortunately, the efforts of the ICEX are mostly concentrated in the promotion of activities related to the sectors of food, textiles, machines and manufactured products, rather than construction. As an exception, since 1988 there are some funds dedicated to subsidize a percentage of the cost of preparing bids abroad, though the process to get that subsidy is again slow, difficult and -paradoxically- requires a high administrative expense to submit the application.

In conclusion, the initial hypothesis is corroborated: the financial, fiscal, insurance and promotion supports that the Spanish construction companies are receiving (except those related to the funds to support development) are clearly insufficient and mean currently a competitive disadvantage with respect to the major EC contractors in the process of internationalization.
3.3.4. Opening new markets: possibilities in East Europe.

The access to a market economy of the former centralized economies in East Europe offers good opportunities to the western construction companies, mainly as a consequence of the precarious situation of the infrastructures in those countries; in particular, the highest demands correspond to: new buildings, rehabilitation works, infrastructures, urban facilities and environmental projects. By way of example, only in the former East Germany 800,000 families are living in extreme conditions, and the 20% of the roads and 60% of the urban networks need repair\textsuperscript{49}.

The global construction market of those countries is estimated in 38 trillion pesetas, from which the former USSR will absorb an 84%, the former East Germany a 5% and the rest of the countries, 11%.\textsuperscript{50}

However, the possibilities of working in East Europe require a detailed analysis, since they are currently highly constrained by several factors, such as:

- The change from a centralized economy to a market economy creates an administrative "puzzle".
- The relations with the public entities are complex and sometimes not well defined.
- There is a certain lack of productivity in terms of the labor force (mainly in the former USSR).

\textsuperscript{49} Ms. Alicia Revenga, "Exports in Construction", Polythecnic University of Madrid lecture, June 1993.
\textsuperscript{50} Idem as previous footnote.
• The construction materials have to be frequently imported given the insufficient local quality.

• The actual financial resources of these countries are strongly limited by their level of external debt. For instance, only the payments of interests generated by such debt are equivalent to the new international preferential credits arranged for the period 1991-95.

• The runaway inflation and high interest rates increase dramatically the risk of the international contractors that take part in the financing of the projects.

The next table shows the difficult position in which several East European countries are immersed:

<table>
<thead>
<tr>
<th>1991 data</th>
<th>debt (billion $)</th>
<th>growth (% of GDP)</th>
<th>inflation (%)</th>
<th>investment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>11.2</td>
<td>-20</td>
<td>404</td>
<td>-20</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>9.3</td>
<td>-16</td>
<td>60</td>
<td>-29</td>
</tr>
<tr>
<td>Hungary</td>
<td>20.4</td>
<td>-8</td>
<td>36</td>
<td>-12</td>
</tr>
<tr>
<td>Poland</td>
<td>44.3</td>
<td>-9</td>
<td>74</td>
<td>-11</td>
</tr>
<tr>
<td>Rumania</td>
<td>1.5</td>
<td>-17</td>
<td>219</td>
<td>-24</td>
</tr>
<tr>
<td>former USSR</td>
<td>70</td>
<td>-13</td>
<td>71</td>
<td>-4</td>
</tr>
</tbody>
</table>

Source: Alicia Revenga, "Exports in construction".

Some steps given by the international community seem relevant to overcome those financial constraints, in particular:
• The creation of the European Bank for the Reconstruction and Development of the East European countries (BERD). Its objectives are to provide and coordinate technical assistance and training for the former centralized economies, to establish in these countries a framework for a market economy as well as a stronger private sector and to finance the public sector of infrastructures in East Europe.

The EC contributes to the BERD with a 51% of the total capital (10,000 million Ecus) and US with a 10%. (Spain, in particular, has provided the 3.4% of that capital).

• The creation of an EC program to finance specific projects in the East European countries (program PHARE). This program was initially created for Poland and Hungary, focused mainly on projects related to agriculture, construction, environment and training; later, the program PHARE has included projects destined to Bulgaria, former East Germany, former Yugoslavia and Czechoslovakia.

The budget destined by the EC to this program has been gradually increased during the last years (in particular, in 1989 it reached 498 million Ecus; in 1990, 500 million and in 1991, 820 million Ecus).

In general, the possibilities in the East European markets are quite different depending on the level of economic development and dimension of the country faced; in particular, Czechoslovakia and Hungary might be able to develop a whole process of transition to a market economy within a few years, while Poland and
Rumania present higher difficulties and likely longer periods of transition\textsuperscript{51}. The process in the former USSR is more complex since it requires to overcome problems related to nationalisms, ethnic groups and "psychology" of collectivism.

It is in this context that the western companies are making the first movements to enter in East Europe: Poland and Hungary were the first markets opened for the western firms, beaten currently by the former East Germany given its special circumstances after the reunification process; as an illustration, the German agency \textit{Threuhandanstalt} is responsible for the privatization of more than 8,000 public companies of the former East Germany, from which 650 belong to the construction sector. The first 50 construction firms that have followed this process of privatization have been mostly acquired by West German societies. In this sense, the market of the former East Germany can be considered practically "captive" of the German companies.

Finally, the examples of introduction of Spanish construction companies in this market are still scarce: the group Hasa-Huarte has developed successfully acquisitions of local firms in Hungary and the former East Germany, yet the attempts of acquisitions by other Spanish companies have been so far a failure.

A different strategy is the one followed by Dragados (the second construction company of Spain in terms of revenues) together with \textit{Cepsa} (Spanish company of crude oil): they have "created" a firm to operate in Russia; both firms will have a 51\% of the new firm \textit{Petrorusia}, while the remaining 49\% will belong to the Russian

\textsuperscript{51} Ms. Alicia Revenga, "Exports in Construction", Polythecnic University of Madrid lecture, June 1993.
companies *Moscow Oil Exchange* and *Moscow Trading House*. This new society will perform the contracting, management and execution of private and public projects. It will become as well an instrument for the Spanish firms to enter in two major markets of Russia: construction (by Dragados) and crude oil (by Cepsa) supported by the knowledge of their local partners. The main problem that they will eventually face is the difficult financial situation of the country, as explained in the previous pages; nonetheless, the association with the Spanish and Russian oil companies will allow to receive some of the payments for the projects in raw materials, in particular crude oil, easily marketable by the oil companies (i.e. receive payments using operations of countertrade, which were addressed in point 3.3.2.)

That strategy can overcome to some extent both the complexity of relations with the local entities -by way of the experience of the two Russian companies- and the financial constraints of the projects -by performing countertrade operations-.

Summarizing, the exporting construction activity to the East European markets is fed by a high demand in buildings and infrastructures but constrained by the several factors presented (mainly by the financial situation of the countries involved). However, the supports of the international entities and the development of appropriate strategies (like the one followed by Dragados in Russia) can mean a good challenge for the internationalization of creative construction companies.

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52 Expansion, 3/18/93
CHAPTER 4. MERGER PROCESSES.

This chapter is addressing the processes of concentration in the Spanish construction activity: first, the necessity and reasons for such processes to take place are stressed; then, two case-studies on mergers are developed: the success of Fomento de Construcciones y Contratas (FCC) and the failure of Huarte-Lain; finally, the structural reorganization and problems that can arise within a merger of construction firms will be analyzed.

When comparing in the previous chapter the process of internationalization of the Spanish firms to that of other EC countries, an important fact was highlighted: several EC contractors have begun a process of "europeization" of their activity as well as some Spanish companies (with a certain delay, given the high internal demand until 1990). It seems reasonable that in a few years there will be 20 to 30 firms that will be defined as "general European contractors"\(^{53}\), each one with a complex network of subsidiaries or participations in local companies (in both West and East Europe). These macrofirms, highly diversified and with a great capacity to enter new markets, will reach a leadership position in the European construction markets; from that position, they might be able to take part in the world process of "globalization" of the firm, competing or collaborating with Japanese or American societies.

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Nonetheless, to reach such objectives of internationalization and globalization requires an aggressive policy in equity positions and acquisitions of local firms; and this policy, in turn, requires a minimum critical capacity from the main company (in terms of financial resources, staff of middle-line managers and technology) that few Spanish construction companies currently have.

With these arguments, it is not surprising to see in the short-run important movements of concentration among the major Spanish firms, as well as the entrance of foreign capital in some of them (nowadays, there are about 30 EC contractors permanently installed in Spain through acquisitions, participation or associations with 60 Spanish companies\textsuperscript{54}).

The processes of concentration, through acquisitions or mergers, will continue at all levels -European, national and regional- and is affecting to many companies; from such processes might come out efficient groups, able to generate positive synergies, but in some cases a merger can be translated into a flat failure (given the character of the Spanish construction market: complex, personalistic and highly heterogeneous). Examples of both -positive and negative- results are analyzed in the next pages.

A merging strategy involves always a high risk and has a slow effect; for this reason, some Spanish firms are also considering alternative (or previous) strategies to a merger, creating alliances such as:

\textsuperscript{54}Jose Luis Carreras Yañez, "Perspectives of the construction for the 90s", Papeles de Economía Española, #50, 1992.
• Permanent associations among firms of different countries, allowing for:
  - interchanges of technology and information;
  - common actions to build international projects;
  - cooperation in terms of R&D and financial engineering;
  - each firm maintaining a certain leadership in its country or specific market.

This type of alliance makes easier a relatively fast internationalization, avoiding the high costs of establishing subsidiaries or acquiring local contractors, as well as the penetration in difficult markets, such as East Europe (analyzed in the previous chapter).

• Consortia of national companies, similar to the ones operating in Italy, able to face complex projects both in the domestic and international markets.

• Associations of specialized firms, linked by their activity or geographical scope, can achieve a certain complementarity and perform projects that could not undertake separately.

In particular, the consortia and associations among small and medium size companies give the opportunity of coordinating and pooling resources in:
  - dealing with their suppliers, obtaining better conditions in quality and prices of the materials;
  - dealing with their clients, which are usually the major construction firms, that subcontract part of the project; the small firms can obtain a certainly higher bargaining power if associated;
Finally, the collaboration can be expanded to different areas, such as the financial, which is precisely the weakest aspect of the small and medium size companies.

In summary, three main ideas arise from this introduction:

a) The movements of concentration of companies in the Spanish construction market are necessary to reach the minimum critical capacity in order to compete with other EC contractors in the process of "europeization" of the construction activity. Such strategy can be considered both active -to be able to enter new markets- and defensive -to maintain the local market-, since several European macrofirms are acquiring as well permanent positions in Spain.

b) The concentration is not limited to mergers of the major companies, but also can be a good strategy for the small and medium size specialized firms, that can create alliances and achieve certain synergies by pooling resources.

c) A previous, or alternative, stage to a merger is to create permanent associations among firms of different countries -developing international projects- or consortia of national companies.

The rest of the chapter is focused, though, on the mergers of major Spanish construction firms; the exposition will be done by analyzing two recent cases of mergers in Spain: (1) the successful process of Fomento de Construcciones y Contratas (FCC) and (2) the attempt of Huarte-Lain, that finally became unfeasible.

The company FCC is the consequence of the merging process between Construcciones y Contratas (Cycsa) and Fomento de Obras y Construcciones (Focsa).

Construcciones y Contratas was a family company founded in 1944 by Ernesto Koplowitz\(^5\) and it was a specialized firm focused on maintenance of sewers and drains. Later, the company extended its activity to construction and sanitary and water engineering. It diversified its business as well to real state, cement, transportation, industrial and financial societies. Previous to the merger process, its total turnover in 1991 was 126,000 million pesetas\(^5\), which places the company among the top 5 construction firms of Spain.

On the other hand, Fomento de Obras y Construcciones was founded in Barcelona in 1900 and was acquired by the family Koplowitz in 1987. This firm also has had traditionally a strong position in the business of municipal contracts (sanitary engineering -including water treatment and distribution-, garages and other urban facilities). It has also reached an outstanding position in the domestic and international construction markets and has diversified its activity towards real state, industrial subsidiaries and financial societies. Previous to the merger process, its total turnover in 1991 was 238,000 million pesetas\(^7\), that is, among the top 3

\(^5\) Father of Alicia and Esther Koplowitz, the current main equityholders of FCC.


construction firms of Spain.

The process of association between Cycsa and Focsa is promoted by their common owner (the family Koplowitz) in 1991 -four years after their acquisition of Focsa-. Three possibilities are discussed in the top management levels of the two companies:

a) Create a new corporation that would agglutinate the two companies and all their subsidiaries, yet each firm would remain independent in its operations (the "two brands" strategy). The corporation would act only as the owner of the stocks and common link between the companies. A similar structure had been actually designed after the acquisition of Focsa by the Koplowitz 58 : one of the societies of the group (in particular, the subsidiary Grucyrsa -portfolio society-) would appear as a holding society of the rest of the group. Such strategy was considered as an alternative process to the merger of the two companies.

b) Develop a gradual merger of the companies: first, separating the different activities of both firms into operative areas (i.e. construction, real state, environment, etc.); then, integrating the subsidiaries and tasks of the two companies in each area (achieving different paces and levels of cooperation as a function of the particularities of each area); finally, reintegrating the operative areas in one new company.

c) Establish a fast merger, in which one of the companies would absorb the other; the personnel and management resources would be restructured and reassigned as a function of the new divisions and departments that would result from the merger.

58 Internal problems of the family Koplowitz discouraged the operation, though.
Within the top-levels of the two companies there are managers supporting different opinions about the association; in particular, the extreme positions were represented by Mr. Guillermo Visedo -from Focsa-, that supported the third option, a complete merger; and on the other side, Mr. Miguel Boyer -from Cycsa, president of its subsidiary Grucycsa- supported the first option, namely to maintain the independence of each firm. The discussions lasted until May 1991 and the solution finally adopted was the third one; in fact, the merger agreement was signed by the Boards of Directors in December, 1991 and the actual merger of the companies was reached on March 6, 1992 with the absorption of Focsa by Cycsa; the emerging firm will be Fomento de Construcciones y Contratas (FCC) and its president, Mr. Guillermo Visedo, from the former Focsa.

The goal of this process was to generate certain synergies within the merger of the two complementary groups, in particular the next ones:

- potential operative improvements associated with a higher size;
- advantages linked to the higher financial capacity to face new projects, mainly in a moment in which looking for new ways of financing the projects is a priority;
- improvements in the diversification policies that the two firms had already begun.

The strategies to achieve those synergies and consolidate the merger process included the next issues:
a) unification of the management and long-run strategy of the company;
b) to establish a decentralized organization, divided by business units (operative
areas) instead of legal entities; in this sense, a possible way would be to place a
subsidiary at the head of each business unit. This subsidiary would group together
the participations of the different societies operating in that particular area;
c) to reach a financial capacity and unification of resources that could allow for the
development of the core activities and the extension of the diversification process.

The analysis that follows is focused on: (1) the objectives that FCC has actually
fulfilled during its first year of existence (in terms of its external performance); and
(2) the problems and inefficiencies that has found (in terms of its internal
performance).

(1) *External performance.*

During 1992 the total turnover of FCC was above 380,000 million pesetas, reaching
the first place in the Spanish construction market; this meant an increase of 5% with
respect to the added revenues of Focsa and Cycsa during the previous year\(^{59}\). Its
income pretax in 1992 was 22,300 million pesetas, which in relative terms -respect
to the total turnover- is an excellent result if compared to its main competitors
(Dragados, Cubiertas, Huarte, etc.). Besides, these results are obtained during a year
of recession in the sector (as explained in the first chapter, point 1.2.)

\(^{59}\) Expansion, 3/5/93. Some analysts consider, however, that such increase is still lower than the one that Focsa and Cycsa would have reached separately (mainly with respect to their market share in the public sector). Expansion, 1/21/93.
FCC consolidates as well its position both in its core business units and as a highly diversified group. The basic business units are construction (73% of the revenues) encompassing civil and building works, and sanitary and environmental projects (21% of the revenues); in the latter, its market share is close to 75%, serving a population superior to 16 million people by means of its services of collecting and treatment of urban solid wastes. The competitive advantage of FCC in this field is based on the accumulated experience of the former Focsa and Cycsa; in fact, both had worked in that market since their foundation. Besides, the sanitary and environmental activities contribute to a certain balancing of the inflows of the company, since they are usually long-run contracts and consequently less sensible than the construction activity to the cyclical behavior of the sector and to the budget reductions in public works.

The merger process originated as well a company with more than 100 participant firms or subsidiaries, which intervene in a variety of sectors as the financial, the insurance sector, the cement industry, the real state activity, the highway service, sport harbours, supermarkets, parkings, etc.\footnote{AECI, 1992.} In particular, the backwards diversification to the cement industry -through the subsidiary Portland Valderrivas- means a good competitive advantage for FCC in terms of guaranteed supply of cement and concrete with low prices.

The process of diversification was stressed further after the merger as a consequence of the higher financial capacity of the group (by comparison, few construction companies face liquidity to invest during this period of recession).
particular, during 1992 FCC enters also the private health sector acquiring a 25% of Medytet Hospitaless through its subsidiary Grucyca61; this strategy has a double goal: (a) take advantage of the expected increase in that sector, given the saturation of the Public Health; and (b) the company ensures the construction of the hospitals for its new partner Medytet Hospitaless, increasing its backlog.

FCC increases also its participation in the financial activity by merging its subsidiary Eurofinanzas with the portfolio firm Safei, giving birth to its new subsidiary "Eurosafei".62

Summarizing, the strategy of diversification of FCC is focused on the acquisition of subsidiaries -or part of their capital- in sectors with good expectations of growth and profitability, looking for partners that can multiply its current financial capacity.

In terms of internationalization, FCC does not have the activity correlative to its current size (for instance, it is beaten by its main competitor, Dragados). The president of the firm considers that it would not be difficult, however, to reach an international turnover of 30,000 to 40,000 million pesetas, but even that would not position the company in an outstanding place with respect to other international contractors63. Nonetheless, the strategy of the firm includes associations with foreign companies that are already positioned in the international market, as well as a gradual penetration in the European market, mainly in the sectors in which FCC has specialized (i.e. construction, sanitary engineering and urban facilities).64

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61 Expansion, 12/11/92.
63 Expansion, 6/30/93.
In conclusion, the merger is giving so far an excellent outcome in terms of results of the new company, strategic position in the national market, financial capacity of the group and processes of diversification, together with a good potential for future internationalization.

(2) Internal performance.

Things are not so easy internally to the company, though. The first problem found was in financial issues: an excess of self-portfolio (17.5% of the equity) after the merger (as a consequence of the absorption of Geparsa and Cartera Central, two societies having stocks of the group). Such problem had a quick solution; in fact, a reduction of the equity of the emerging company resulted in: (a) the self-portfolio reaches an acceptable value (2.7% of the equity); and (b) the main stockholders of the group, Alicia and Esther Koplowitz, increase their control from a 62.6% to a 74% of FCC.65

The second problem was not so easy to solve: it was related to the own structure and management of the company, and the difficulties appeared as a consequence of:

- Alicia and Esther Koplowitz, major owners of FCC, had designated an equipment of high-level managers for each of their companies [Focsa and Cycsa]; after the merger between the two companies, some problems were generated when defining the responsibilities of those managers in the new group (in any case, the structure of the firm could not be duplicated).

64 The initial strategy after the merger was to create a subsidiary specialized in promoting the international activity. Some internal problems in the firm, discussed later, discouraged this option, though.
65 Expansion, 6/27/92.
There was as well internal strained relations between the top managers that had supported different positions when deciding the optimal strategy of association; in particular, some managers still considered that the process of merger was being too fast.

In these circumstances, the integration and cooperation between the two teams, which had worked efficiently separately, became a difficult task.

Not only in the top-level management, but also in the middle-line management was difficult to create a "corporative spirit" in a relatively short time.

Finally, the company was facing certain operative difficulties due to a gradual decrease in the efficiency of its relatively centralized structure; it was having each time more problems with the flow of information and the dealt with different markets by the same branch of the organization, mainly since the strategy of further diversification had been stressed successfully.

The lack of an actual integration between the two teams, together with those operative difficulties in the company, were the reasons for a new restructuring of FCC a few months later of its birth; in fact, on January 1993, Alicia and Esther Koplowitz decided to adopt a new structure, creating six companies that would depend on the holding FCC\textsuperscript{66} -divisional structure-; these companies include all the tasks and subsidiaries related to a specific business unit or operative area, i.e. Construction, Real State, Environment, Water and Urban Facilities, Portland Valderrivas (cements) and Grucycsa (responsible for further diversification and

\textsuperscript{66} Expansion, 1/14/93.
portfolio operations). The next sketch shows the whole process undertaken:

![Diagram of company structures]

FCC Construction will group all the construction-related activities as well as the real state promotion; FCC Real State will group all the real state assets, putting them apart from the construction assets (except Torre Picasso, that remains in Portland Valderrivas); FCC Environment and FCC Water and Urban Facilities will have a common president and their subsidiaries will include urban drainage and clearing and water treatment, which represent currently almost a 30% of the total turnover of FCC; Portland Valderrivas will continue with its former activity, cements; finally, Grucycsa will be responsible for the rest of investments of the group, for developing a further diversification strategy and for the portfolio operations.

The divisional structure maintains the links among the six new companies by a double way: (a) of course, by their common reporting to the holding FCC, that keeps the same president; and (b) there is a company, Afígesa, not involved directly in the

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67 The initial strategy included as well to create a 7th company: “FCC International Construction”, with the responsibility of acquiring participations of foreign companies, creating joint ventures and bidding abroad. [Expansion, 1/14/93.] This project was finally disregarded and the international construction activity was integrated also in FCC Construction. [Expansion, 6/30/93.]
production activity, whose function is to manage the cash-flow and working capital of all the divisions of the group in order to obtain the highest profitability in the market. This model of treasury management will allow the group for entering in new construction projects that require financing of the own contractor.

With such structure FCC puts together the common businesses and can obtain a higher flexibility of its divisions. Further, the president is considering the possibility that each division could prices separately in the stock market and even look for partners or merger with other firms of its specific area.

Nevertheless, the divisionalization of the assets and businesses of FCC in different companies is not an easy task and its consolidation can last more than one year, with a different pace for each division: in fact, the grouping of the real state assets in one company is relatively easy and can be achieved in one month, while to separate the construction activity from the sanitary and urban facilities (the two basic units of FCC) is more complex and will take more than a year for its completion. (For instance, all the municipal contracts have to be regularized, since they are currently signed with FCC or even with the former Focsa and Cycsa).

Finally, the adoption of the new structure means somehow a deep change in the strategy chosen for the merger; in fact, the process of absorption of one company by the other (i.e. the third option of the ones presented at the beginning of the case-study) was probably too fast and left little room for an adaptation of the two management teams to the new situation. Besides, the firm was losing operativeness

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68 Expansion, 6/30/93.
69 Managers of FCC. Expansion, 1/14/93.
as a consequence of the merger (i.e. the centralization did not work longer given the new size of the company). These arguments support the hypothesis that the second option presented at the beginning was likely a more appropriate strategy for the merger process, i.e. develop a gradual merger of the companies separating first the different activities in operative areas and integrating the tasks and subsidiaries of the two companies in each area, previously to the whole integration in one company.

The change in the strategy just indicated that the new company had not been able to reach an actual integration during its first months of life; nonetheless, it has a good potential to do so with the subsequent restructuring, and both the external performance -presented before- and the internal changes recognized on time are aiming in that direction.

The main conclusions (i.e. the reasons for the eventual success of the merger Focsa-Cycesa) that can be drawn out from this example are:

a) The common ownership of the two companies involved [Focsa and Cycesa] by the Koplowitz family was helpful for the merger process, mainly because: (1) they promoted an open dialog among the managers of the two firms, discussing several possibilities of association; in other words, the process is a consequence of a chosen strategy internally to the companies, rather than an imposition of the major owner (this fact is not so obvious: the next case-study -point 4.2- will face a completely different situation); and (2) the companies had had the opportunity of performing several projects together before the merging process.
b) The problems faced by the emerging company were mainly associated to: (1) the pace of the process; (2) the integration of the two management teams; and (3) the relatively rigid structure adopted. By comparison, the financial integration was much easier than the structural and human resources integration.

c) The restructuring of the company towards a divisionalized form achieved two major objectives: (1) a more flexible structure, with less intermediate levels between the level of decision and the level of action and thus, with a higher responsiveness in the decision-making processes and short-run strategies. This structure is in a higher correlation with the strategy of diversification followed by FCC; and (2) a change in the structure allowed as well for a restructuring in the responsibilities of the managers that came from the former Focsca and Cycsa, meaning a good opportunity to release the internal strained relations among them with the final purpose of obtaining a higher coordination at those levels.

d) The adoption of the new structure means to some extent a slower pace in the merger process. But this is good for FCC, since the integration of operative areas (though they come from different companies) will be easier than the integration of the whole firm from the first moment.

e) The last issues that FCC will have to address in order to consolidate the integration are related to the common coordinating mechanisms and to the levels of formalization (i.e. new standard procedures to work) at the operating-core level, as well as to face the creation of a certain "corporate spirit" within the company. Such processes require, though, a longer period of common work and stability.
4.2. Case study: Huarte-Lain.

The history of the company Huarte is relatively complex\textsuperscript{70}: it was a family company founded in 1927, performing civil construction works and buildings. It reached an international infrastructure, focused mainly on Latin American countries, by means of subsidiary companies structured around 1970. During the mid-80s the company faces deep financial difficulties due to a languid activity and unpayments of several projects in Latin America and it was bought in 1986 by another firm: Hispano-alemana de Construcciones (Hasa) that tries to refloat Huarte with a package of 10,000 million pesetas.

Important problems arise with the new buyer, though: Hasa is a company founded in 1963 performing buildings with a regional scope; it widened its activity at the beginning of the 80s with hydrolic works. Yet in 1983 it was expropriated by the Spanish Government (together with the rest of the holding called Rumasa) because of its supposed financial irregularities. Hasa was resold by the Administration to private societies with a subsidy of 30,000 million pesetas. It is in these circumstances that Hasa buys Huarte in 1986, trying to refloat it with part of the package received as a subsidy.

A few months later, it is known that the private societies that had bought Hasa -and later Huarte- were "fictitious" and the Government has to look for other buyers: finally the Italian group Fiat, together with Cofisa -also Italian origin-, Aristos

\textsuperscript{70}The information included about the history of Huarte is based on a personal interview with Mr. Jose Antonio Herrera, manager of the Safety and Hygiene Department of Huarte.
- Mexican group- and Aresbank - Arab Spanish Bank- acquire Hasa and Huarte, consolidating the merger of the two companies in 1990 but restructuring their tasks: Huarte will concentrate all the construction activity of the group and Hasa will group the rest of the companies, mainly real state oriented. The president of Huarte-Hasa, Mr. Mario Caprile, will come as well from the group Cofisa.

The final structure of Hasa-Huarte is as follows:

```
<table>
<thead>
<tr>
<th>Company</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiat</td>
<td>33.3%</td>
</tr>
<tr>
<td>Cofisa</td>
<td>27.5%</td>
</tr>
<tr>
<td>Aristos</td>
<td>26.0%</td>
</tr>
<tr>
<td>Aresbank</td>
<td>13.2%</td>
</tr>
</tbody>
</table>
```

The merging process of Hasa-Huarte was called the "Operative Union" and achieved the unification of procedures of the two firms in order to gain efficiency and save in overhead expenses.

During the last years Huarte has reinforced its financial structure with several increases of capital\(^{71}\) and has reached an outstanding position in the national market, as well as in Latin America, North Africa, Middle East and Portuguese markets. Its revenues during 1991 and 1992, above 110,000 million pesetas each year, place this firm among the top 10 construction companies of Spain.

On the other hand, the company Lain has a more "peaceful" history; it was founded in Spain in 1963 and its activity in construction covers civil works, industrial buildings, hospitals and rehabilitation work. The company is highly diversified (for instance, the weight of civil works is just a 34% of its total turnover, below the average of the sector); it is currently diversifying its activity towards service-oriented sectors and mainly real state promotion. Its international activity is focused in Portugal, Middle East and England. Its revenues during 1992 were about 48,000 million pesetas, that is, a 44% of Huarte's, yet its profits during that year decreased more than a 50% with respect to 1991 and its financial situation is constrained by a high level of debts\textsuperscript{72}.

The first intention of a merger between Huarte and Lain comes -in January 1993- from the Italian group Fiat, major equityholder of Hasa-Huarte, as explained previously. The president of Lain had as well the intention of making his firm grow through acquisitions or associations with other companies of the sector.

Fiat intended to restructure again the group, maintaining in Hasa the firms related to urban facilities and real state and concentrating in the emerging company (Huarte-Lain) the activities related to construction\textsuperscript{73}. This would give birth to a big construction company, with a turnover above 160,000 million pesetas, that is, among the top 5 construction companies of Spain, and with a higher potential of expanding through the multinational Fiat.

\textsuperscript{72} Noticiario Economico 11/23/92, and Expansion 3/5/93.
\textsuperscript{73} Expansion, 1/21/93.
The initial step towards the merger consisted of an interchange of stocks between Fiat and Lain (February 11, 1993), with the next characteristics:

- Lain increases its capital in 1,800 million pesetas and its equity in a 33.3%;
- Fiat acquires precisely that 33.3% of Lain, through a public offer of acquisition (OPA);
- Lain acquires, in turn, a 33.3% of Hasa, precisely the stocks that belonged to Fiat.

The next sketch summarizes the operation:\footnote{Curiously, the consultancy to design this operation was the American company \textit{Apax}, of Alan Patricof. Expansion, 2/12/93.}

\begin{center}
\begin{tikzpicture}
\node (fiat) {Fiat} ;
\node (huarte) [below left of=fiat] {Huaerte} ;
\node (hasa) [below right of=fiat] {Hasa-Huarte} ;
\node (other) [below left of=hasa] {Other} ;
\node (huarte1) [below right of=hasa] {Huaerte} ;
\node (lain) [right of=hasa] {equity increase Lain} ;
\node (construction) [below of=lain] {construction} ;

\draw (fiat) -- node {owns a 33.3\%} (huarte);
\draw (fiat) -- node {acquires a 33.3\%} (lain);
\draw (huarte) -- node {real state and urban facilities} (other);
\draw (huarte) -- node {construction} (huarte1);
\draw (hasa) -- node {acquires a 33.3\%} (lain);
\draw (hasa) -- node {acquires a 33.3\%} (huarte);
\end{tikzpicture}
\end{center}

At first, Fiat wanted to add its stocks of Hasa directly to the assets of Lain in the concept of increased capital, yet the complexity of that operation -it required an external valuation of the added assets- discouraged that formula.
Let's analyze which are the objectives and reactions of all the parts involved:

a) The point of view of Fiat.

This triangular interchange of stocks is very "strategic" from the point of view of Fiat, since now the multinational will control Lain directly (with its third part of the firm, Fiat becomes its main stockholder) and also maintains the control of Hasa indirectly (through the package acquired by Lain), and with no outlays.

b) The point of view of Hasa-Huarte.

The first problems arise internally in Hasa-Huarte; in fact, a few days later of the described operation, the Board of Directors of Hasa-Huarte appears completely divided\(^7\) on one side, the representatives of Fiat and Aresbank -that group a 46.5% of the stocks- supporting the merger with Lain; on the other side, the representatives of Aristos and Cofisa (including the president of Hasa-Huarte) -that group a 53.5% of the stocks- opposed to the operation. Their reasons for such refusal were:

- avoid an eventual increase of control by the Italian multinational Fiat in the company Hasa-Huarte;
- mainly because that control would come now through Lain, considered a competitor by the own managers of Hasa;
- finally, the managers of Hasa-Huarte as well as the rest of equityholders had not been taken into account -not even informed- of the interchange of stocks performed by Fiat.

\(^7\) Expansion, 2/10/93 and 2/12/93
Further, the vicepresident of Hasa-Huarte considered illogical that Fiat entered in the capital of Lain, an actual competitor of Hasa, and considered the option that from that moment they would have to deny the entrance to the Board to the common stockholder\textsuperscript{76} [i.e. common to both firms].

c) The point of view of Lain.

On the other hand, the president of Lain tries to establish a certain cooperation and proximity with Hasa-Huarte (since the triangular operation, Lain is actually the owner of a third part of Hasa). His strategy with the entrance of Fiat in Lain is\textsuperscript{77}:

\begin{itemize}
  \item strengthen the financial position of his firm, with an institutional partner;
  \item increase the production of Lain, above 100,000 million pesetas annually.
\end{itemize}

And his strategy with the eventual association with Hasa-Huarte includes:

\begin{itemize}
  \item participate in projects together, looking for synergies; in particular, Lain considers common projects with Hasa-Huarte in the field of concessions from the public sector (i.e. privatization of water facilities and toll turnpikes);
  \item later, extend the participation to a coordinated action or merger.
\end{itemize}

Nonetheless, the president of Lain only faces the merger process as a last stage and considers that the two companies should maintain their own identity during a period and even work in competition. (That was the case with \textit{Construcciones y Contratas} and \textit{Focsas} until their merger in \textit{FCC}, as analyzed in the point 4.1.)

\textsuperscript{76} Same as previous footnote.  
\textsuperscript{77} Expansion, 2/18/93
However, the objectives of Lain and the attempts of its president of "bridging the
narrows" towards the reconciliation have nothing to do with the position adopted by
the managers of Hasa-Huarte, who consider the entrance of Lain as an hostile
operation for Hasa, as explained before. In fact, on April 5, 1993 (two months after
the interchange of stocks), the president of Hasa decides to suppress the Board of
Directors of the company, in order to avoid the entrance of Lain\textsuperscript{78} (Lain would have
had 3 or 4 directors in the Board, given its participation in the company). Instead of
the Boar.l, two temporary administrators were designated (in particular, the president
and vicepresident of Hasa-Huarte) and quarterly general meetings of stockholders
were arranged in order to keep a channel of information.

Such action had a double objective: not only avoids the presence of Lain in the
Board, but also Hasa achieves a better position in its strategy of isolating Lain with
respect to the rest of equityholders. (In fact, the decision was corroborated as well by
Aresbank, the only group -together with Fiat- that had supported the initial
operation; hence, Lain finds itself isolated with respect to the rest of stockholders of
Hasa-Huarte).

Lain, whose objectives included to have directors in Hasa and its subsidiaries in
order to take part directly in the management of the company, attempts two
strategies -more aggressive- against the hostile environment found in Hasa-Huarte:

a) Lain and Fiat proposed to the rest of equityholders an increase in the capital of
Hasa-Huarte with a minimum value of 5,000 million pesetas\textsuperscript{79}. They would as well

\textsuperscript{78} Expansion, 4/6/93.
\textsuperscript{79} El Pais, 4/3/93.
acquire a higher participation in the company if the rest of stockholders were not able to subscribe the increase. They presented this financial program together with a management program that could reorganize Hasa-Huarte and they did so in front of the creditor banks of Hasa-Huarte, a dark maneuvering that even the banks disliked. The goal was obviously to increase the control of Lain-Fiat on Hasa-Huarte, but the strategy was unsuccessful, given the radical opposition to the proposed program from the managers of Hasa and from the rest of equityholders.

b) Lain, again with the support of Fiat, contested the decision of suppressing the Board of Directors of Hasa-Huarte and threatened to recourse to the law. The same position adopted the managers of Hasa, who considered illegal the presence of competitors in its Board as well as the intention of Lain of reorganizing their firm.

It is in this context of "open war" in which some differences appear as well in the own Board of Directors of Lain; some directors did not agree with the aggressive strategy that the president of Lain was having against Hasa-Huarte. Perhaps this fact was determinant and Lain finally begins to face the only way out: to resell its 33.3% of Hasa to Hasa, either through a third partner, directly or establishing the payment with assets (in particular, Hasa-Huarte has hotels, land and buildings). A negotiated exit of that kind would likely satisfy to all the parts involved -at least as much as possible, given the impossibility of cooperation between the two firms-

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80 To ensure liquidity for the operation they were proposing, Lain had sold the previous day its subsidiary Texsa (of construction materials) to the French group Lafarge in 2,000 million pesetas. Expansion, 4/5/93.
81 Expansion, 4/6/93.
82 Expansion, 4/7/93.
83 Expansion, 4/23/93.
because:

- Lain would obtain an important liquidity (which is not bad, given its high level of debt). Besides, Fiat would remain as the main stockholder of Lain.
- Fiat was satisfied with its investment in Lain and was even considering the possibility of increase its package further than the 33.3%.\textsuperscript{84}
- Hasa-Huarte could find a new partner to establish a cooperation, surely in a more "friendly" way.

In fact, on April 23, 1993 the group Hasa-Huarte offers to Lain real state assets in interchange for its 33.3% of the company. The first offer is refused by Lain but it accepts, instead, a second offer with an easier positioning in the market (including hotels and real state promotions in Marbella and Lanzarote)\textsuperscript{85}. The agreement is reached in June 1993, after six months of continuous confrontations between the two firms.

The final result is as follows:

- Lain gives back to Hasa its stocks of the firm, receives the real state assets and gives entrance in its capital to a third firm, *Fomento de Construcciones y Contratas* (FCC). The group FCC wants to acquire a 21% of Lain, following a common strategy with Fiat (the two groups will control together a 54% of Lain).\textsuperscript{86}

The goal of FCC (the biggest construction company in Spain) is not a merger or an

\textsuperscript{84} Expansion, 3/26/93.
\textsuperscript{85} Expansion, 4/22/93 and 4/23/93.
\textsuperscript{86} The entrance of FCC in Lain was conditioned as well to the ending of the conflict between Lain and Hasa-Huarte. This fact could likely have made pressure on the president of Lain to accept the second offer of Hasa and reach an agreement.
absorption of Lain -the operation is expected to be maintained in "friendly terms" this time- but rather to transform Lain in a second company of construction keeping its independence.

- On the other side, Hasa-Huarte recovers the conflictive stocks and its plans include to sell that package to one or several non-European construction companies before the end of the year 1993. In particular, the president of Hasa was analyzing the offers of several companies through the Japanese bank Nomura. The buyer will rather be non-European since the strategy of Hasa-Huarte includes currently the strengthening of its business out of the EC, with a partner that can provide new technologies for a further diversifying strategy.

The main conclusions (i.e. the reasons for the failure of the merger Huarte-Lain) that can be drawn out from the case-study are:

a) The operation was designed by the multinational Fiat without taking into account to the managers -nor to the rest of stockholders- of one of the firms involved; there was not an interchange of opinions or mutual knowledge of the firms previous to the interchange of stocks. In this sense, the reaction of Hasa-Huarte was clear: "if you have a foreign partner [Fiat] and he brings into your house to a local competitor [Lain], then you have to defend your company".

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87 Expansion, 6/12/93.
88 El País, 8/29/93.
b) The managers of Hasa-Huarte perceived the operation as a way for Fiat to increase indirectly its control on the company. In fact, the problem existed before the attempt of merging, since Fiat wanted Hasa to increase capital in order to widen its package of stocks of the company.

c) The rational way to develop successfully such process of merger between the two firms would have had to consider the performance of several projects together previously to a process of higher cooperation. The direct imposition -without a previous background of common work between the firms- leads to the perception of the other company as a competitor, rather than a partner.

d) The strategy followed by Lain of criticizing the financial position of Hasa-Huarte and even the management capabilities of its supposed partners was the best guarantee for the failure in an eventual process of cooperation.

e) One of reasons that led to an attempt of merger was the financial conditions of both societies (in particular, their high level of debts\(^\text{90}\)). Although an improvement of the financial position of the companies involved can be a good effect of a merger, it should not be the cause of the merger if other factors do not concur (like in this case).

f) Though it is not related directly to the merger process, it is interesting enough to note how an organization centralizes its structure during a period of crisis. That was

\(^{90}\)Noticiario Economico, 2/1/93.
exactly the case of Hasa-Huarte: by suppressing the Board of Directors it is true that the firm avoided the entrance of Lain; but it is also true that an eventual concentration of power in the president and vicepresident of the firm gave a higher level of operativeness for its control, while a complex structure -with long ways for the information to flow and the decisions to be adopted- would have had negative results for the company during that period of confrontations and changes.
4.3. Restructuring the organizations.

The successful completion of a merger process requires previously a careful analysis taking into account the complementarity and reciprocal benefits of the companies involved versus the cultural, business and structural differences between them. The analysis that follows is focused on: (a) possible areas of mutual interest; and (b) structural differences that can arise between the companies.

(a) Areas of mutual interest. As a prerequisite of their association, the firms should present a certain complementarity in terms of common goals and capabilities, in particular in the next areas:

- Expansion plans. Both firms can have expansion plans in the medium and long-run; for instance, in the case-study analyzed of FCC, the former companies Focsa and Cycsa had as a common goal an aggressive strategy of expansion both in geographical terms and in diversification of their activity.

- Innovation. In the case of an association between small and medium size specialized firms, an expansion of their collaborative effort to R&D can lead to a multiplicative effect (as opposed to additive) in their innovative technology.

- Type of projects. The firms can present a certain complementarity in terms of their experience with different projects. By way of example, after the merger between the two Spanish companies Ocisa and Construcciones Padrós (undertaken as an absorption of Padrós by Ocisa91), the new company will take advantage of the
knowledge of the former Ocisa in dealing with public projects (relation with Government entities, state agencies, etc.) as well as of the knowledge of the former Padros in private projects (in particular, concessions of water treatment facilities and service-oriented activities).

- Financial situation. A process of association allows to share the financial costs of new projects. For example, in the case study Huarte-Lain, Lain presented a problem of undercapitalization as a consequence of its growth during the last years, which was suggesting the merger as a solution in terms of reducing the financial burden of new projects. (The merger was unsuccessful, though, for the reasons analyzed in that case-study).

Such areas of mutual interest (together with the ones mentioned in the introduction to the chapter) can be good starting points supporting a process of association between two firms. Nevertheless, they are not sufficient at all in order to ensure a successful completion of that process; in fact, the consolidation of the merger requires a special attention to the cultural, business and structural differences between the organizations. Let’s analyze the latter:

(b) *Structural differences between the companies*\(^{92}\). The main differences can appear in terms of their structural configuration; the key coordinating mechanisms and key parts of each organization; the type of grouping; the flow of information and decision making; and the work procedures (mainly, levels of specialization).

\(^{91}\) Expansion, 4/12/93.

\(^{92}\) The concepts used in this part are based on Henry Mintzberg, "The Structuring of Organizations", N.J., 1979.
The next table shows the usual relationships between each structural configuration and the main design parameters of the company:

<table>
<thead>
<tr>
<th>Structural configuration</th>
<th>Simple Structure</th>
<th>Machine Bureaucracy</th>
<th>Professional Bureaucracy</th>
<th>Divisionalized Form</th>
<th>Adhocracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>key coordinating mechanism</td>
<td>direct supervision</td>
<td>standardiz. of work</td>
<td>standardiz. of skills</td>
<td>standardiz. of outputs</td>
<td>mutual adjustment</td>
</tr>
<tr>
<td>key part of the organization</td>
<td>strategic apex</td>
<td>technostruct.</td>
<td>operating core</td>
<td>middle-line managers</td>
<td>support staff</td>
</tr>
<tr>
<td>type of grouping</td>
<td>usually functional</td>
<td>usually functional</td>
<td>functional and market</td>
<td>market</td>
<td>functional and market</td>
</tr>
<tr>
<td>flow of decision-making</td>
<td>top down</td>
<td>top down</td>
<td>bottom up</td>
<td>differentiated HQ &amp; division</td>
<td>mixed, all levels</td>
</tr>
<tr>
<td>specialization of jobs</td>
<td>little specialization</td>
<td>much horiz. &amp; vert. spec.</td>
<td>much horiz. spec.</td>
<td>some horiz. &amp; vert. spec.</td>
<td>much horiz. spec.</td>
</tr>
</tbody>
</table>

Source: Henry Mintzberg, "The Structuring of Organizations".

It is not strictly necessary for a merger that the two companies have the same structural configuration or design parameters; for instance, one company can be highly centralized throughout a functional structure and the other divisionalized, working in a diversified market. Nevertheless, a similar structural configuration of the companies or just the existence of common operative areas (business units) allow for an integration "from bottom to top", that is, to integrate first the activities of the two companies in each unit; then, the merging configuration of the top-structure will
be easier to accomplish.

In all cases, it is necessary, however, to define correctly the structure and parameters of the resulting company; in other words, the process will not work if each one of the firms remains using its former coordinating mechanisms or work procedures. In particular, the common approach will include:

- Restructuring the emerging company as a function of the new common strategy, the environment faced (i.e. market) and the possibilities of integrating the two management teams. The first case-study presented relative to the firm FCC is a good example: the structure adopted for the new firm was too rigid and originated operative difficulties derived from the new size and markets faced and from the lack of an actual integration between the two management teams. The subsequent restructuring into new divisions or operative areas and new management positions for each division was paramount in order to improve the operativeness of the firm and to release the internal strained relations that followed the merger.

- Define the key part of the new organization; for instance, if the new configuration is divisionalized -as in the case of FCC after the restructuring- the key part will correspond to the middle-line managers of the firm (following the Mintzberg’s classification) and the strategic apex (top-level management) of each former company will have to promote a process of delegation of responsibilities (rather than insist on "being consulted on all decisions", which could result in a duplicity of decisions, inefficiencies or, what is worse, in a competition among the former top-level managers of the merging companies).
• Establish a common approach with respect to the flows of information and decision-making; one of the firms can be more used to the formal reports while the other might rely largely on the informal working relationships; the unification means that the personnel of the former firms will have to learn new ways of working relations and, to some extent, adjust to the new situation. (A failure might occur if the staff involved in a project remain reporting to their former managers, not taking into account to the personnel of the other firm, or simply "jumping" over the project organizational structure).

• The restructuring is not limited to the strategic apex and middle-line managers; it should include as well to the technostructure, support staff and operating-core level, redefining the required specialization for each task (both horizontal and vertical) and the new formalization and standard procedures (if applicable) in each department of the firm.

Summarizing, for a merger process to succeed it is not enough that the two companies involved have areas of mutual interest, common objectives or potential synergies to gain. Further, good results of the new company for a certain period after the merger are not optimal indicators of its actual internal performance (i.e. integration of the two teams and efficient structure). In contrast, the way to ensure a longer-run success of the merger is directly linked to structural issues and passes through an appropriate restructuring of the company at all levels (configuration, strategic apex, middle-line managers, operating-core, coordinating mechanisms, flow of decisions and information, etc.)
Finally, the case-studies analyzed in the chapter show that there are two differentiated stages within a merger: (1) the "wedding": FCC overcame this stage while Huarte-Lain did not, as explained before; and (2) the consolidation: this process is slow and requires a gradual restructuring of the new company, with similar patterns to those discussed above -FCC has a good potential to do so after the internal reorganization undertaken, presented in the previous pages-.
CHAPTER 5. DIVERSIFICATION.

This chapter is addressing the strategies of diversification of the Spanish construction companies: first, the analysis will be focused on the reasons for this process to take place, as well as on its different forms and current extent to the companies; then, a particular example of a company highly diversified (Ferrovial) will be introduced; finally, the relationship between the strategy of diversification and the structure of the companies is highlighted, together with the necessity of restructuring the organizations as a function of their objectives and the contingency factors faced.

5.1. Current diversification.

One of the present goals of the construction companies is to develop a more active strategy with respect to the market: in fact, the Spanish construction firms have been traditionally limited to follow the different demands that the construction market provided, while nowadays their objectives include to provoke new demands\textsuperscript{93}. These new demands are related to a higher approach to the specific needs of the clients, introducing the concept of "finished product" in which the "pure construction" is only a part of the project, with a decreasing share in the total turnover of the firm.

\textsuperscript{93} Jose Luis Carreras Yañez, "Perspectives of the construction for the 90s", Papeles de Economía Española, #50, 1992.
Consequently, this strategy is leading to an increase in the service-oriented components of the projects, either supplied by the construction company itself or by associations or consortia among firms of different sectors (the latter is usual in the Italian market). In particular, the new components of the projects include -previous to the construction-: design, feasibility studies, ways of financing, objectives, legal procedures and administrative management and financial management. Also after the construction phase new components appear, such as: equipment and interior facilities, guarantees of quality, after-sale services, maintenance and repair or even the own operation of the product (i.e. through concessions for a given period).

The double objective of providing and provoking these new demands has favoured the process of product-diversification of the construction companies. In particular, during the second half of the 80s, several European contractors have developed strategies of diversification; in Spain, the process began with a certain delay with respect to other EC countries yet with the same strength. Nowadays, for the top 10 Spanish construction companies in terms of total turnover, the volume of sales in non-traditional activities represents already between a 10 and 30% of their total revenues⁹⁴.

Together with the service-oriented components explained, the major companies have entered as well in "backwards" activities, completing the integration in the construction value chain. Only a few of them have entered, though, in non-construction related sectors (horizontal diversification). The main fields of activities in which the construction firms are extending their business are:

(a) *Vertical integration*: activities positioned backwards or forwards with respect to the pure construction, that is, integrating suppliers and/or clients in the value chain. These activities include:

- extraction of raw materials (mining, quarry);
- manufacture of construction materials (cement, concrete, steel);
- prefabrication or industrialization of construction components;
- design, engineering and feasibility studies;
- expropriation management and modification of previous services and facilities;
- equipment and interior facilities;
- building installations;
- building integral maintenance;
- real state promotion;
- operation of the infrastructures (i.e. concessions);
- other after-sale services.

(b) *Horizontal diversification*: activities related to other sectors; some of them maintain a certain relation and complementarity with construction, while other represent a completely different business. The former include:

- sanitary and environmental services:
  - water treatment;
  - urban solid wastes;
- industrial and toxic wastes;
- antipollution projects;
- gardening;

- private management of water facilities;
- other urban facilities;
- electrical and telecommunications systems;
- intelligent systems for infrastructures and buildings;
- centers for sports, leisure and elderly;
- garages;
- collective transportation systems;
- power distribution.

Some sectors in which a few construction companies have entered but not related at all with the construction activity are:

- banking and financial entities;
- insurance;
- law and administrative consultancy;
- hospitals;
- agriculture and food;
- tourism;
- manufacturing;
- distribution.
The current diversification of the major Spanish construction companies is presented in the next tables (only the main activities are shown):

(1) Vertical integration.

<table>
<thead>
<tr>
<th></th>
<th>FCC*</th>
<th>Dragad.</th>
<th>Cubiert.</th>
<th>Ferrov.</th>
<th>Agrom.</th>
<th>Entrec.</th>
<th>OCP**</th>
<th>Huarte</th>
<th>Lain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraction</td>
<td>+++</td>
<td>+++</td>
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<td>+++</td>
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<tr>
<td>Constr. materials</td>
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<tr>
<td>Prefabrication</td>
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<tr>
<td>Engin. &amp; Design</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Build. maintenan.</td>
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<td>Real State</td>
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<tr>
<td>Toll highways</td>
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</tbody>
</table>

(2) Horizontal diversification to complementary sectors.

<table>
<thead>
<tr>
<th></th>
<th>FCC*</th>
<th>Dragad.</th>
<th>Cubiert.</th>
<th>Ferrov.</th>
<th>Agrom.</th>
<th>Entrec.</th>
<th>OCP**</th>
<th>Huarte</th>
<th>Lain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanit. &amp; Environ.</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
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<tr>
<td>Priv. water facilit.</td>
<td>+++</td>
<td>+++</td>
<td></td>
<td>+++</td>
<td>+++</td>
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<tr>
<td>Elect. &amp; Telecom.</td>
<td>+++</td>
<td>+++</td>
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<td></td>
<td></td>
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<tr>
<td>Garages</td>
<td>+++</td>
<td>+++</td>
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<td>+++</td>
<td>+++</td>
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<tr>
<td>Transp. systems</td>
<td>+++</td>
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</tbody>
</table>

(3) Horizontal diversification to not related sectors.

<table>
<thead>
<tr>
<th></th>
<th>FCC*</th>
<th>Dragad.</th>
<th>Cubiert.</th>
<th>Ferrov.</th>
<th>Agrom.</th>
<th>Entrec.</th>
<th>OCP**</th>
<th>Huarte</th>
<th>Lain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>+++</td>
<td></td>
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<td></td>
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<tr>
<td>Insurance</td>
<td>+++</td>
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<tr>
<td>Agro-food</td>
<td>+++</td>
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<tr>
<td>Tourism</td>
<td>+++</td>
<td>+++</td>
<td></td>
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<tr>
<td>Manufacturing</td>
<td>+++</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

* Fomento de Construcciones y Contratas; ** former Ocisa-Padros.

Summarizing the tables, the major trends -which will be likely developed further during the next years- are:

(1) Vertical integration. Most of the companies presented have included among their activities the phase of engineering and designing the projects (backwards) and all of them have integrated service-oriented components, mainly real state promotion (forwards). This is consistent with the new market demands presented at the beginning that are pushing towards a concept of "finished product". In this sense, the largest companies have entered as well in building integral maintenance and in operation of infrastructures (toll highways in particular).

The backwards diversification to construction materials and the prefabrication industry is still limited to the top firms, FCC and Dragados specially.

(2) Horizontal diversification to complementary sectors. The more outstanding market is the sanitary and environment-related industry, in particular the water treatment facilities. The major construction companies are already positioned in this market, which is one of the first attempts of privatizations of infrastructures in Spain.

(3) Horizontal diversification to not related sectors. This process is scarcely followed by the Spanish firms; only the top ones diversify a small part of its business to tourism, manufacturing or banking activities yet this can be considered more a financial diversifying strategy rather than an actual business expansion.
Together with the new demands for "finished products" and service-oriented activities, there are other reasons that encourage to the construction companies to follow a process of diversification, in particular:

- Gain access to areas with a higher added value and sectors with good expectations of growth and profitability (this is the case of FCC increasing its participation in the financial activity and insurance sectors).

- Neutralize, to some extent, the strong effects that the economic cycles have on the "pure construction" sector. It is true that with a better programming and a certain continuity in the public bidding the cyclical behavior would be partially leveled; but even in that case, if the firm is focused strictly in construction it will face important difficulties in financial terms and in leveling resources during a recession period.

A positive example is the case of FCC: its highly diversified business and mainly its advantageous position in sanitary and environmental projects (reaching almost a 30% of its revenues in these fields) has contributed to a certain balancing of the inflows of the company, since these activities are usually linked to long-run contracts and consequently are less sensible than the pure construction activity to the cyclical behavior of the sector and to the budget reductions in public works.

The same argument has worked for the companies Dragados and Cubiertas whose results from operations have been increased during 1992 in the area of sanitation and environment and have been reduced, instead, in the construction activity.\textsuperscript{95}

\textsuperscript{95} Expansion, 4/28/93.
By comparison, a negative example is the company Agroman: its position in the national market (among the top 5 construction firms until 1991 in terms of total turnover) is not correlative with its low level of diversification. During the present economic recession in Spain the Administration has delayed the payments for civil works and buildings to most of the construction firms and has reduced the public bidding: the two facts have created important problems for the companies -like Agroman- whose turnover is almost entirely due to construction activity; these problems have appeared both in financial terms and in the lack of utilization of its resources (mainly labor). 96

It would not be exact to establish a direct cause-effect relation between the comparative low level of diversification of Agroman and its recent financial problems; other factors have surely concurred. But it is true, however, that the integration of different activities would have reduced the effects of the recession, in particular in order to balance the inflows of the company and to utilize its idle resources.

- Another reason supporting a process of diversification is that it can generate certain synergies with the traditional activities (namely economies of scope), in particular the vertical integration and the horizontal diversification to activities that maintain a complementarity with construction.

---

96 In fact, the company Agroman presented in 1992 a decrease of almost 80% in its profits with respect to the previous year [Expansion, 3/2/93]. Also during 1992 the major equityholder had tried to sell the company; in particular, the German group Philipp Holzmann was initially interested in Agroman [Expansion, 11/16/92]. Finally, the decision adopted disregarded the sale and included, instead, a financial package to refloat the company and the possibility of an association with other Spanish construction firms [El Pais, 3/25/93].
Finally, the reasons to explain the process of horizontal diversification to activities not related at all with construction -though this process is very limited- are linked to a financial diversifying activity: they are usually investments or acquisitions aiming to diversify the risks of the company. Such strategy can be appropriate for the companies with a strong financial position (like FCC and Dragados) that can enter as well in activities with high profits margins.

Nonetheless, this type of diversification can hardly be considered an actual business expansion, since the company just acts as a stockholder of different firms operating in sectors that usually do not present synergies with its core business. From this point of view some firms disregard this type of diversification; for instance, the president of the company OCP\textsuperscript{97} considers paramount that all the activities in which the company is involved have "the same culture"\textsuperscript{98}.

It is also true that the risk-diversification argument supporting these non-construction related investments, if accepted, is only valid from the point of view of the family-owned companies (Entrecanales, Ferrovial) or major equityholders (like the family Koplowitz in FCC), since the minority stockholders gain nothing with that diversification (they can play their own risk aversion strategy simply by accumulating a well diversified portfolio, with several sectors of investment, not only construction).

\textsuperscript{97} Resulting company of the recent merger between Ocisa and Construcciones Padros.
\textsuperscript{98} Florentino Perez, El Pais 8/29/93.
Summarizing, the reasons presented throughout this point are supporting a further diversification of the Spanish construction companies, mainly through a vertical integration in their value-chain (in particular, towards service-oriented activities) and through an horizontal expansion to "close" sectors, such as the sanitary and environmental projects (in particular, water treatment facilities). Dissimilar, the expansions to "remote" sectors should likely remain concentrated for a few top firms merely as a financial instrument.
5.2. Example of diversification: Ferrovial.\textsuperscript{99}

The group \textit{Ferrovial}, integrated currently by more than 50 subsidiaries, is a family-owned company founded in 1952, with the constitution of Ferrovial, S.A.

During the first decade of existence it was devoted to construction and maintenance of railways. Later, the company diversified its activities, entering into other construction areas (civil works and buildings), as well as real state promotion, broadening the framework of activity to the whole sector, in its public and private branches, and enlarging the scope of action to Latin America, Africa and Middle East.

The company has experienced a tremendous growth during the last years, tripling its total turnover between 1987 and 1991; currently it is the fourth construction company of Spain in terms of total revenues. The next data illustrate such growth:

\begin{table}
\begin{tabular}{l|ccccccc}
\hline
\hline
Equity & 28,100 & 32,500 & 33,427 & 34,710 & 49,800 & 50,606 \\
Total turnover & 63,400 & 86,200 & 122,020 & 150,320 & 183,450 & 173,129 \\
Income pretax & 2,572 & 3,009 & 4,373 & 4,048 & 6,560 & n.a. \\
\hline
\end{tabular}
\end{table}


\textsuperscript{99} Part of the information included is based on personal interviews with Mr. Diego Valle, manager of the international division of Ferrovial and Mr. Antonio Iglesias, manager of the organization, training and human resources department.
During 1992 its total sales decreased as a consequence of the reduction in the public bidding (given that the revenues from construction of Ferrovial had a share of 63% from the public sector in 1991).

The growth during these years (1987-91) can be explained by both the high domestic demand for infrastructures and the wide process of diversification of the firm. The analysis of this part will be focused on the latter.

(a) With respect to a vertical integration in the value-chain, Ferrovial has included among its businesses the activities of:

- Prefabrication and supporting construction elements, including pipes and prestressed beams.
- Project design and engineering, including feasibility studies and design of constructions and installations together with a consultantship technical office to support the projects execution phase.

Also as a backwards integration, the company has short-run plans to enter in construction materials, in particular bituminous products (Ferrovial has already installations for the storage and distribution of such products).

In the forward integration, the dominant activities are:

- Integral maintenance of buildings.
- Real state promotion.
- Maintenance and concessions of infrastructures and services, mainly toll turnpikes.

(b) With respect to the horizontal diversification to complementary sectors, the major expansion has been to:

- Sanitary engineering and environment, including a subsidiary specialized in engineering, construction and maintenance of water facilities (this subsidiary experienced an increase of almost 40% in its turnover during 1991\textsuperscript{100}).
- Telecommunications, through its subsidiary ICS (this subsidiary also grew a 50% in revenues during 1991\textsuperscript{101}).

The company has plans as well to acquire the firm \textit{Suministros, Proyectos e Instalaciones (SPI)}\textsuperscript{102}, specialized on telephone networks installation, electrical facilities and cable laying for railroads together with some activities in the field of air conditioning systems. If this operation is successful, Ferrovial will enter to compete with the groups \textit{Cobra (OCP), Radiotronica (Agroman), Elecnor, Dragados} and \textit{Sintel} in the profitable markets of telephone networks installation and power substations for railroads and subways, filling some gaps in the already highly diversified structure of the company.

(c) Ferrovial has developed as well an horizontal diversification to activities not related at all with its core business, in particular:

\textsuperscript{100} Annual Repo,t, 1991.
\textsuperscript{101} Same as previous footnote.
\textsuperscript{102} In May 1993, Ferrovial corroborated an option of acquisition of the 100% of SPI and will spend about six months in analyzing the situation and capabilities of that firm before confirming its official decision. [Expansion, 5/25/93].
• Tourism, including hotels, casino and sport clubs.
• Agrofood, including production, distribution and exporting activities, particularly to the EC.

These product-diversifications have been linked also to a geographical expansion of the activities; in particular to Italy and Portugal (real state), Germany (tourism and leisure) and Latin America (business promotions and concessions of infrastructures). In the core business of construction the expansion has reached the whole national market and a certain level of internationalization (mainly to Latin America, North Africa, Middle-East and, from the EC, Italy and Portugal).

Dissimilar to the strategies of diversification—which have been very successful—, Ferrovial has developed other growth-oriented strategies during the last years, with scarce results; for instance, in 1990 the firm intended to acquire a 51% of its competitor Cubiertas, which finally was a failure. A second attempt, in 1992, was to acquire a part of an EC construction company; so far, and putting apart its acquisitions related to its diversification—mainly real state firms—, Ferrovial just has signed a long-run collaboration agreement with the company Hochtief (Germany). In other words, the process of dramatic growth has not relied on mergers or major acquisitions of other construction firms but on the pure product and market diversification of the company (helped, to be fair, by a high domestic demand for construction and service-oriented activities during the years 1986 to 1991).

103 Mainly due to the own opposition of Cubiertas and to the intervention of a third construction firm, EntreCanales, that bought a 25% of Cubiertas, becoming its major equityholder and avoiding the operation of acquisition by Ferrovial.
104 Expansion, 1/30/92.
A second interesting aspect to analyze is the organizational structure that Ferrovial has developed in order to absorb the different geographical markets, product-divisions, branches and departments that have arisen as a consequence of its diversification strategy.

The next sketch shows the current structure of the company\textsuperscript{105}:

\begin{center}
\begin{tikzpicture}
  \node (root) {President};
  \node (general_secretary) [below left of=root] {General Secretary};
  \node (general_manager) [below right of=root] {General Manager};
  \node (finance_planning) [right of=general_manager] {Finan., Planif. & Cont. Man.};
  \node (assistant_general_manager) [below of=general_manager, node distance=2cm] {Assist. Gen. Man.};

  \node (construction) [below of=assistant_general_manager] {Construction Gen. Manag.};
  \node (real_state) [right of=construction] {Real State Gen. Manag.};
  \node (diverse_activ) [right of=real_state] {Diverse Activ. Gen. Manager};
  \node (development) [right of=diverse_activ] {Develop. & International Act. G.M.};

  \node (environmental_department) [below of=construction, node distance=2cm] {Environm. Dpt.};
  \node (highways_construction) [below of=environmental_department] {Highways Con.};
  \node (prefabrication) [below of=highways_construction] {Prefabrication};
  \node (telecommunications) [below of=prefabrication] {Telecommun.};
  \node (tourism_leisure) [below of=telecommunications] {Tourism&leis.};
  \node (agro_food_department) [below of=tourism_leisure] {Agro-food Dpt.};

  \node (ec) [right of=development, node distance=2cm] {EC};
  \node (latam) [right of=ec, node distance=2cm] {Lat. Am.};
  \node (other) [right of=latam, node distance=2cm] {Oth.};

  \node (leisure) [below of=ec] {Leisure};
  \node (transportation_system) [below of=leisure] {Transp. syst.};
  \node (business_promotion) [below of=transportation_system] {Bussin. prom.};
  \node (construction_department) [below of=business_promotion] {Construction};
  \node (real_state_department) [below of=construction_department] {Real State};
  \node (new_construction) [below of=real_state_department] {New const. el.};
  \node (question_mark) [below of=new_construction] {?};

\end{tikzpicture}
\end{center}

\textsuperscript{105} Sources: Mr. Diego Valle, personal interview; and Annual Reports.
Legal
Project stud.
Supplies
Human Res.

comes from
Constr. Div.

Machinery
Technical Dpt.
Other staff

Manager
Region I
similar

Manager
Region II
similar

Manager
Region III
similar

Manager
Reg. IV
Manager
Internat.

other zones

Manager
Zone i
Manager
Area n

Manager
Zone j

Manager
Civil
Works

Manager
Building

Manager
Industr.
Constr.

Group of
projects

Group of
projects

Group of
projects

On site
manager

On site
manager

On site
manager

On site
manager

Project stud.
Production

Administrat.
The highly divisionalized structure of Ferrovial is relatively complex and presents the next particularities:

- It has a centralized functioning at the top-level management, in particular in the next positions\textsuperscript{106}:

a) General Secretary: responsible for the legal supervision and legal structure of the whole group.

b) Finance, Planification and Control Department: includes the management information systems, accounting and financial and tax strategies of the whole company. This centralization is designed to optimize the resources of the group, avoiding an eventual dispersion in certain areas (for instance, this department establishes the coordination among the several divisions and branches in order to minimize the tax outcome).

Dissimilar, the General Manager and Assistants General Managers are in the executive line responsible for all the production divisions yet with a decentralized decision-making system in favour of the divisional managers. The General Manager and Assistants unificate, though, the corporate image of the group and the relations with the information channels outside the company (for instance, national and international newspapers).

- One step lower the company adopts a product-divisionalized structure (i.e. construction; real state; diverse activities; and development and international

\textsuperscript{106} Of course, the executive line is decentralized to the divisions, though.
activities) which is the logical outcome of the further diversification strategy followed by the group (a more in depth discussion about the linkages and relations between the strategies and structure of the organizations is held in the point 5.3. of this chapter).

- Similarly, the division of "diverse activities" includes the several product-subdivisions representing the fields in which the company has expanded (both vertically and horizontally) except the ones that, given its relative importance, have their own division (such as real state) or the ones that are included in the support staff of the construction division (such as engineering and design of the projects).

- The division of "development and international activities", recently founded, has the goal of promoting and managing the businesses related to the new activities in which Ferrovial eventually decide to enter (the interrogation symbol in its last subdivision in the sketch represents those potential businesses). This division will lead as well the commercial management of all the subsidiaries of the group abroad and the businesses generated by them.

It adopts a variable matrix organizational structure divisionalized by both products (i.e. leisure, transportation systems, businesses promotion, construction, real state and new construction elements) and geographical zones (Portugal, Italy, Germany, Latin America, etc.). The actual internal functioning of this division is not, though, as well-defined as it could seem from the previous sketch (to some extent, it is more a place to put together the new businesses areas and subsidiaries abroad than an actual bidivisionalized structure).
Besides, some duplicities appear in the organization as a whole; for instance, who performs a project abroad, the construction subsidiaries of the "development and international activities" division or the international subdivision of the construction division? The answer is both: in fact, if the project is performed in association with other companies or by specialized subsidiaries of Ferrovial, the development and international activities division will be -in general- responsible for it, while if it is a "direct export" of Ferrovial, then the construction division will perform the project.

It would not be surprising that as this division grows it will eventually be transformed into two separate divisions: one focused on international activities and the other on development of new businesses and/or technological innovation (currently Ferrovial has not a specific department of R&D serving the necessities of the whole company; only in a subsidiary of the telecommunications division specific R&D activities are developed).

- The real state division groups together several subsidiaries performing real state promotion and management.

Also here some duplicities have appeared considering the whole organization; for instance, important real state assets of the group are dispersed throughout the branches (especially in the tourism and leisure subdivision of the "diverse activities" division). In this sense, the top management of the company is establishing a gradual internal reorganization of the group, trying to reassign the different assets in a more logical way to the different divisions; in particular, the real state assets that were dispersed through the branches have been recently transferred to the subsidiary of
the group *Ibervial*, included in the real state division. Such reorganization will likely improve the efficiency of each division.

- Finally, the construction division -the largest of the group- adopts again a divisionalized structure, yet this time by geographical areas (i.e. the national market is divided into four regions + one subdivision for the international activity).

Once more, each region of the national market is subdivided into different zones and each zone can even group several areas, depending on its extension. Going down in the executive line, each area (or zone) can be divided again by product (civil works or buildings), each one divided by group of projects, till reach finally the "on site" manager responsible for each project. The industrial construction "jumps" over the zonification of the region, since its volume is relatively small (6% of total construction in 1991).

Occasionally, the region can have as well a subdivision by major clients (for instance, the public entity *RENFE* in the region I).

In contrast, the international subdivision of construction has still a functional sub-structure, centralizing all the projects in one department. It will eventually require a divisionalization by geographical areas as the international activity of Ferrovial increases both in volume of exports and in number of countries reached.

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107 Expansion, 5/28/93.
It is interesting to note as well that this process of strong divisionalization of the structure is followed by a decentralization of the power and decision-making centers within the divisions and subsidiaries (this is not a direct cause-effect relation; in fact, divisionalization does not preclude the further decentralization of power within the divisions\textsuperscript{108}). By way of example of its decentralized decision-making mechanisms, Ferrovial is known for the high level of delegation transferred to the site managers of the projects; they become completely responsible for the performance, cost, schedule and sometimes financing of the project (each project is almost considered a different "business unit"); such level of delegation is certainly higher than in other Spanish construction companies.

After studying the strategies of diversification and the subsequent structure generated by Ferrovial, a last issue requires analysis, namely which advantages the company has faced by following such a pattern of diversification. In this sense, the next issues seem relevant:

a) Ferrovial has experienced a huge growth during the last years, reaching an advantageous strategic position in the national market (currently it is the fourth construction company of Spain in terms of total revenues as presented at the beginning of this analysis). Nonetheless, just a growth-oriented strategy is not sufficient to explain the process undertaken (i.e. growth itself cannot be considered "a priori" an optimal strategy for a company). In fact, other factors concur, as explained next.

b) With its strategy of diversification, Ferrovial has improved its capabilities of leveling its financial resources; in particular, when facing the delay of payments for the public works during the present economic recession in Spain. Mainly, since the revenues from construction of the company have a proportion of almost 2/3 from the public sector, the rest of service-oriented activities product of the diversification strategy—which usually are focused on the private sector—have meant a certain balancing in the inflows of the company.

Currently, the financial position of the company is ease, with a low debt to equity relation (at least, by comparison to other companies in the construction sector).

c) The different businesses in which the company is immersed allow as well for a human resources leveling.

In fact, the economic recession during the last two years has been translated into a cut in the public bidding for construction. This, in turn, has meant a restructuring at the production levels, i.e. reassignments of locations, tasks and activities for some staff of the company. Some problems have appeared, though, in terms of the geographical mobility of the personnel\(^9\), in particular\(^10\):

- personal roots of the workers, reluctant to change of town or area;

\(^9\) Note that the decrease in the domestic demand for construction has not been equal in all the regions; it has been particularly strong in Andalucía, Canarias, Castilla and Madrid. Thus the initial intention of the company was to reallocate personnel in geographical terms.

\(^10\) Mr. Antonio Iglesias, manager of the organization, training and human resources department of Ferrovial, personal interview.
• expectatives of finding temporary contracts in other small-size local companies, in case of being laid-off;

• high costs for Ferrovial in terms of wage premiums for changing the location of jobs and supports to new housing (the labor framework in Spain is very rigid -also with respect to the layoffs-, as presented in the chapter 2).

It is in this context of difficult geographical mobility in which the option followed by Ferrovial has been to restructure the assignments of activities rather than changing the location of the jobs. In particular, the reorganization has moved personnel from the construction sector to related sectors -some of them emerging sectors in Spain-, such as\textsuperscript{111}:

• maintenance of infrastructures;

• integral maintenance of buildings;

• operation of garages;

• operation of water facilities;

• gardening.

Also at the level of middle-line managers and technical staff there has been a certain transfer from construction to other sectors.

Summarizing, the argument given is supported: the highly diversified structure of the company has meant a competitive advantage in terms of reallocation of its personnel and, in general, resource leveling during the periods of low internal demand for pure construction.

\textsuperscript{111} Same as previous footnote.
d) Another advantage is in terms of increasing the capabilities of the company to compete in the EC market, by reaching a minimum critical capacity. From the point of view of a manager of the company, the strategies of diversifying activities and increasing as well the international presence of the firm are the only way to compete with the European multinational macrofirms.\textsuperscript{112}

e) Also the diversification process of the firm has had a determinant influence in the organizational structure developed by Ferrovial and presented before. The strategy of entering new markets has promoted internal changes in the structure that otherwise would not have taken place or would have been delayed.

It is true, however, that eventual structural inefficiencies have arisen along the process (duplicities in the organization, difficulties to assign appropriate resources to each division, etc.) yet the continuous structural adaptation of the company to the new environments (markets) faced is a positive factor to overcome such inefficiencies. Examples of this adaptation are both the creation of the new division "development and international activities" and the reallocation of the assets to the corresponding divisions.

The diversification strategy has affected as well to the distribution of power and decision-making centers along the firm; as explained before, a process of decentralization has been promoted within the divisions\textsuperscript{113}, which is in a higher correlation with the diversity of markets and also with the decentralization in the

\textsuperscript{112} Mr. Antonio Mendoza, vicepresident of Ferrovial. Expansion, 1/30/92.

\textsuperscript{113} In the context of the current recession a certain temporary centralization has been developed at the regional levels to decrease overhead expenses, though.
demand for the core business, construction (i.e. the public bidding is being gradually transferred from the central Administration to the regional and local Administrations, as presented in the first chapter).

Finally, the perspectives of the firm for the future include a further developing and consolidation of its diversification process, in particular a vertical integration of more activities (construction materials, for example) and an horizontal expansion to "close" sectors (sanitary engineering, environment and telecommunications in particular). In words of the president of the company: "Ferrovial is making efforts to consolidate its model of diversification which, being opened to all the opportunities offered by the markets, will be mostly focused on its essential vocation in construction and on the direction derived from such condition: construction-related business or businesses related to our clients' activities."\textsuperscript{114}

\textsuperscript{114} Mr. Rafael del Pino, President of Ferrovial, introduction to Annual Report 1991.
5.3. Relation with the structure of the companies.

The existence of a close relationship between the strategy of diversification followed by a company and the structure that it adopts has been recognized in the example presented of Ferrovial. Following the same line of exposition that in the previous chapter, this part will develop a theoretical framework and a more in depth discussion about the different linkages between the strategy analyzed and the structuring (or restructuring) of the organizations.

I will use three basic models throughout this analysis: first the Greiner's\textsuperscript{115} and Churchill's\textsuperscript{116} models for the general study of the relationship between structure and strategy, and later the Newcombe's\textsuperscript{117} model for the specific impact of a diversification strategy.

The model by Greiner establishes different phases of development in the growth of organizations, each of which containing a relatively calm period of growth that ends with a management crisis. The author's position is that the future of an organization may be less determined by outside forces than it is by the organization's history and, in particular, by the structure that it adopted during the previous period ("each phase is both an effect of the previous phase and a cause for the next phase").


\textsuperscript{117}Robert Newcombe, "The evolution and structure of the construction firm", University of Bath, UK, 1980.
The model by Churchill also establishes several phases in the growth of a company (in particular: existence, survival, success, take-off and resource maturity) as a function of the different capabilities and management orientation of the company.

There are two main underlying foundations in which the models differ. First, the Greiner's model stresses that the structure of an organization in each period of time is responsible for its future growth and eventually will determine the strategy for the next period (future growth and strategy determined by the organization's history and structure). In contrast, the Churchill and Lewis' model establishes that it will be the decided strategy what will give shape to the organization itself, including structure and possibilities of growth.

The second issue, connected also with the mentioned above, is that in the Greiner's model the growth of the organization seems to be "inevitable", giving only one degree of freedom to the managers (which is to adopt the correct solutions during each crisis in order to assure a smooth growth along the next period). On the contrary, in the Churchill's model the growth will only take place as a result of a desired strategy (for example, the company could stay at one of the stages indefinitely if that is its chosen strategy).

From my point of view, the analysis should consider the interaction among structure, strategy and "contingency factors" (i.e. age and size; technical system; environment; and power relationships\textsuperscript{118}). In particular, there are three basic

\textsuperscript{118} This is the classification of contingency factors established by Henry Mintzberg, "The Structuring of Organizations", N.J., 1979.
assumptions when analyzing such interaction:

- First, the strategy to adopt by the firm (both short-run strategy or tactics and long-run strategy) will depend on two variables: the previously adopted objectives and the contingency factors faced by the firm.

- Second, when the strategy for a given period has been selected, it is the time to analyze if the structure of the firm is the optimal one to achieve that strategy or if it should be replaced.

- Third, the immediate consequence of the two previous assumptions: there is no one best structure sustainable for long periods of time.

Together with the optimal structure, the coordinating and decision-making mechanisms (for instance, level of decentralization of power) have to be defined. The last step would be to create (or reorganize) the different tasks for each structural unit and select (or reallocate) the appropriate staff for each position (note that some firms try to follow exactly the opposite way, that is, to adapt the strategy to the eventual tasks and human resources, which could work in the short-run but not in the long-run as the firm deviates from its objectives or is faced with dynamic environments).

This analysis can be expressed in a simplified cause-effect diagram as follows:
These relations are closer to the model by Churchill than to the Greiner's (i.e. a decided strategy shaping the structural organization of the company) though a certain feedback component is as well introduced: the configuration of the structural units will influence the size and technical system of the organization and the decision-making mechanisms selected will affect the power relationships within the company. These, in turn, are contingency factors that are determinant of the strategy for the next periods.

Source: own analysis.
The contingency factor that remains independent, namely the environment faced by the firm, is precisely the one that -from my point of view- seems more relevant in order to define the strategy and subsequent structure of the company (at least in the construction firms). Further, some authors even establish direct relationships between the environment faced and the design parameters of the organization, in particular\textsuperscript{119}:

- the more dynamic the environment, the more organic the structure (i.e. instability decreases bureaucratization);
- the more complex the environment, the more decentralized the structure.

Both characteristics (instability and increasing complexity) are usual in the current construction markets, thus the strategies adopted by the construction companies will likely be followed by low-bureaucratized and highly decentralized structures (except for those specialized firms operating in a stable single market with low competition, which is not frequent nowadays).

With this framework, the remaining analysis will be focused on the structural configurations and design parameters that arise when the objectives of the company are growth-oriented following a diversification strategy. Such strategy is a consequence as well of contingency factors that include an environment with a high market diversity.

In this sense, the core issue is following the Mintzberg's terminology that the more diversified the organization's market, the greater the propensity to split it into market-based units, i.e. to adopt a divisionalized structure. In other words, diversification breeds divisionalization.

In fact, a small or poorly diversified firm will probably work very well with a functional structure (all the tasks related to one particular function are assigned to a branch of the organization depending finally on one head). This functional organization keeps and encourages a hierarchy based on specialization and, by definition, there will be uniformity of criteria along the department, making the coordination easier.

Nevertheless, as the firm grows or enters in different markets, the specialization and centralization of the functional structure create less flexibility because each time there are more intermediate levels between the level of decision and the level of action (the pyramid has grown) originating (a) long ways for the decision and the information to flow and (b) more difficulties to change criteria (short-run strategies become low-responsive along this structure). Thus, in terms of efficiency, it seems much more appropriate for a highly diversified firm a divisional structure (mainly if the characteristics of the market also differ among regions).

Of course, the divisionalization is not a panacea; the higher flexibility can be followed by certain frictions among departments with different objectives or facing different environments, making it more difficult to coordinate the firm as a whole.
This divisionalization is expected to occur at the same time that the level of delegation is increased, decentralizing the decision-making centers until reach the bottom structural units (for instance, the site manager of a project in a construction firm acquires a high responsibility, equivalent to the manager of a factory). However, such decentralization until the last units does not always take place, as will be analyzed later.

This process can be summarized using the same diagram presented before, this time particularized for the strategy of diversification:

- **objectives**
  - include growth

- **contingency factors**
  - include market diversity

- **high market diversity**
- **power relationships**
- **age and size**
- **technical system**

- **decentralization of power within the divisions**
- **subdivisions: specialized tasks and staff**

- **design parameters**

Determinants: 
Influence: 

Source: own analysis.
Once that the necessity of divisionalization for a diversified company has been established, it is interesting to analyze as well the design parameters that correspond to that divisional structure, in particular:

- The key part of the divisionalized firm will be the middle-line managers, namely each divisional general manager, to whom everyone in his division reports.
- The coordinating mechanisms will include a certain standardization of outputs for each division (for example, in the branches focused on prefabrication or industrialization of construction components; the pure construction division, however, will not allow for standardizing its outputs).
- The divisionalization will increase as well the tendency to formalize procedures within divisions, and in the company as a whole, in particular developed planning and control systems.
- Increasing horizontal specialization among divisions.
- With respect to the decentralization of power, two different concepts should be differentiated:

  a) It is intrinsic to the divisional form that the decision-making centers are moved to the divisional general managers.

  b) What is not so obvious is a later process of decentralization within the divisions (the firm can remain centralized in each division). The interrogation symbol in the previous sketch wants to represent this fact: divisionalization does not mean necessarily decentralization of the power.
The actual decentralization of the power depends on more factors (not just the structural configuration) such as the external control of the organization (i.e. specific shareholders, a parent organization or a family-owned company). In particular, dependent organizations have a more centralized authority structure, while independent organizations have more autonomy and decentralize decisions down the hierarchy.

Another aspect affecting decentralization is the environment faced by the company: the hostile environments (for instance, a deep recession in the sectors involved or an extreme competition) usually lead to a temporary centralization of the structure.\(^{120}\)

In the example presented of the company Ferrovial, the diversification strategy led indeed to both a divisionalized structure and -in general- to a process of decentralization of power within the divisions. (A temporary centralization at the regional levels was provoked by the current environment -i.e. economic situation- at Spain, which is consistent with the Mintzberg’s hypothesis mentioned above).

So far, a close linkage between strategy and structural configuration of the companies has been addressed, but some issues have not been solved: for instance, not all the diversifications are equal (i.e. market vs. geographical expansions) or have the same depth (a firm operating in a dominant market and with some related businesses is not the same as a holding). Do they require a similar divisionalization of their structures? The answer is obviously no.

The relationship between the type and extent of diversification of a company and its structural configuration can be approached in a further detail using the model developed by Newcombe\textsuperscript{121} ; three factors are taken into account in this model:

a) Product diversification, classifying the companies (or stages of evolution of the same company) into four groups, each one representing a type of product-expansion:

- single market: firms growing by expansion within one market;
- dominant market: firms growing by expansion within one main market but in addition have entered secondary markets;
- related market: firms growing by expansion by means of entry into related markets (either vertical integration or horizontal diversification to related businesses or a combination of both);
- unrelated market: firms growing by expansion into markets unrelated to their original market scope.

b) Geographical expansion, classifying the companies into four levels: local, regional, national and international.

c) Structure, differentiating among:

- integrated, with many unrelated activities grouped under a single individual;
- functional, separating the business into specialized functions that culminate and are coordinated by a general manager;

\textsuperscript{121}Robert Newcombe, "The evolution and structure of the construction firm", University of Bath, UK, 1980.
• divisional, based on product, service, geography, clients or a combination;
• holding company, consisting of a system of semi-autonomous subsidiaries or companies, held together only as a corporate legal entity.

The relationships among product diversification, geographical expansion and structural configuration are shown in the next table:

![Diagram]


The model develops as well the different paths of expansion that the companies can have; in particular, the evolution within zones is expected to be relatively smooth (for instance, in zones 2 and 3 the opening of another regional office or an addition of another market division, although important, are extensions of an existing strategy and structural configuration). In contrast, the transition between zones is expected to be marked by severe internal turbulence and organizational change (in the terms
analyzed in the previous pages, that is, defining new coordinating mechanisms, design parameters, level of formalization, decentralization, etc). Specific paths of growth can be:

a) A firm which adopts initially a strategy of specialization in a single or dominant market and chooses to grow by expanding geographically; once a strong geographical base is established it may decide to seek a wider market base through product-diversification. (Movement through zones 1-2-4).

b) A firm that diversifies within its original operating area to achieve greater market coverage and later may decide to expand as well its geographical scope. (Movement 1-3-4).

c) A firm could try to expand simultaneously both its geographical and product scope (movement 1-4) with an aggressive growth-oriented policy. This would represent, however, such a dramatic change in both strategy and structural configuration that its possibilities of succeed are scarce; probably that firm would become "stuck in the middle" (i.e. it engages in each generic strategy but fails to achieve any of them). And, in turn, a firm that is stuck in the middle will compete at a disadvantage because the "focusers" will be likely better positioned to compete in any segment.\footnote{Michael Porter, "Competitive advantage", N.Y., 1985.} This fact could explain as well the existence of a certain negative correlation between an intense product-diversification and an aggressive geographical expansion.\footnote{In fact, few European contractors are placed in the position (high, high) for both product and geographical diversification. Francisco Fernandez Militino, "Strategies available to Spanish construction and engineering firms in order to compete in the new emerging European Market", MSCE Thesis, MIT 1991.}
Consequently, the "competitive movements" are expected to be done vertically or horizontally in the previous figure or even diagonal within a zone (yet not diagonal between zones).

With this background, it is time to review in a closer approach the case presented about the diversification process of the company Ferrovial; in particular, it is a good example of competitive movements following the first path, namely through zones 1-2-4:

![Diagram showing the process of diversification](image)

Sources: Robert Newcombe, "The evolution and structure of the construction firms", UK, 1980; and own analysis of the company Ferrovial.

In fact, the company was devoted to construction and maintenance of railways, with a local scope, during its first years of existence. Later, it expanded its markets in geographical terms (achieving a regional scope) and in product diversification
(entering in several construction areas, which became its dominant market, and integrating other services, such as real state promotion, yet in a small proportion with respect to construction), following the path A-B in the previous sketch. Afterwards, Ferrovial developed a growth-oriented strategy focused on expanding its activities geographically (in particular, the dominant market of construction) until reach a national scope (path B-C). A subsequent process of internationalization allowed for enlarging its scope of action to Latin America, North Africa and the Middle East (path C-D).

Finally, its aggressive strategy of product-diversification during the last years (presented in the point 5.2) was translated into a further vertical integration in the value-chain (prefabrication, project design and engineering, real state, concessions of infrastructures, etc) and an horizontal diversification to related sectors (sanitary and environmental engineering and telecommunications in particular): path D-E. Ultimately, Ferrovial has entered as well in some activities not related with its core business, such as tourism or agrofood (path E-?); nonetheless, its future strategy seems more oriented to a further expansion in related businesses and in a vertical integration (at least this was suggesting the president of the company, as presented at the end of that example). Thus, the company will likely remain at E with some small "incursions" to the right.

The structural configurations adopted by Ferrovial at each stage followed closely the ones predicted by the Newcombe's model. In particular, the company began with a functional structure when it was focused on one market and activity and even later
(while in zone 1); the transition between zones 1 and 2 was solved adopting a geographical-based divisional structure (dividing the national market into four regions); the further process of expansion to the international markets (path C to D) required an additional division that grouped the international projects. Finally, the process of product diversification (path D to E) led to a market-divisionalization of the structure giving birth to the current combination of geographical + market divisionalized configuration presented in the previous part of the chapter. The last structural reorganization was introduced with the creation of the "development and international activities" division, responsible of promoting and managing the potential businesses in which Ferrovial might eventually decide to enter.

In particular, each product-division includes several geographical subdivisions (in the case of construction), several product-subdivisions (in the case of "diverse activities") or a combination of both in a matrix sub-structure (in the case of the "development and international activities" division). To some extent, the current structural configuration not only represents the current strategy but also keeps a "memory" of the followed path of growth, function of the several company's diversification strategies along its history.

This model is not only applicable to the company as a whole, but also to each particular branch of the organization. For instance, when analyzing the diversification of Ferrovial, it was stressed how the international subdivision of the construction division has still a functional structure, centralizing all the projects in one department; in other words, it is still in the zone 1 of the model. However, as this
branch gets close to the limits of that zone 1, its functional structure will present a gradual decrease in its efficiency, i.e. it will have each time more problems when dealing with different markets (countries) by the same branch of the organization. This is suggesting that as the international activity of Ferrovial increases both in volume of exports and in number of countries reached, this branch will eventually have to change into a divisional configuration (creating new branches that separate the activities abroad by type of projects, countries, or even both in the long-run). This will give to the international construction branch a more flexible structure, adapted to its new market scope.

Summarizing, the initial hypothesis and subsequent models have fitted very close to the actual behavior of the company presented; in particular in the next issues:

- The growth-oriented objectives of the company, together with the contingency factors characterized by a high geographical and market diversity, gave birth to a strong strategy of diversification.

- Such strategy, in turn, led to several restructurings within the organization (i.e. the strategy of the firm is found to determine the nature and direction of its structural evolution).

- Each restructuring was characterized by a further divisionalization of the organization: both by regions (when the diversification strategy focused on geographical expansion) and by products (when the diversification strategy focused on different markets).
• The structural changes towards divisionalization were followed, in this case, by a decentralization of the decision-making centers towards and within the divisions.

• Subsequent restructuring included as well divisionalization and decentralization of the own branches of the company, giving birth to a mixed region + products configuration - in the zone 4 of the presented model -.
CHAPTER 6. OTHER STRATEGIES.

Together with the strategies relative to the internationalization, concentration and diversification of the companies, the major Spanish contractors have to give attention as well to other short and long-run factors, necessary not only to improve the competitiveness of the company but also to consolidate those major strategies discussed in the previous chapters; in particular, this chapter is stressing the importance of (1) the commercial strategies; (2) the level of technological innovation of the companies; (3) their policies in human resources; and (4) their internal organization.


There are several aspects that are suggesting an increasing "global approach" in the construction sector, i.e. the construction firms are becoming responsible for contracts that guarantee a consistency among the projects' phases, from their conception to their completion. Such process is taken place in all the EC countries, due to:

- the higher complexity of the contracts, both in technical and managerial terms;
- the "industrialization" of some stages in the construction phase of a project;
- the increasing number of different specialists involved in a project; and
- the interrelation among several technologies.
From the whole complex process associated to an investment in construction, the Spanish construction firm has been traditionally providing only the execution phase (i.e. construction). It is in the context mentioned above that there is currently a change of attitude in the major contractors, extending their activities to the promotion capabilities. In particular, to the branches of (1) real state promotion -in which all the major firms are already positioned, as presented in the previous chapter- and (2) infrastructures and public facilities -in which the process is being slower yet presenting good perspectives for the future-.

Subsequently, the future of the Spanish general contractor will be characterized for supplying a "complete product", including:

• support to the client in the financial management;
• provide the necessary equipment; and
• even maintain and operate the project for a period of time.

And these tasks will be immersed in wide-scope contracting systems, from the contract management to the turn key project.

Thus, a "new" type of construction firm is expected to emerge, in terms of increasing management activities and service-oriented components supplied. In particular, the next issues seem relevant when defining the commercial strategy of such a firm.\textsuperscript{124}

a) The contractor will adopt an active strategy with respect to the market: as opposed to wait passively for the client to propose an offer, the company will pursue a "supply strategy", anticipating the demand and, to some extent, shaping that demand.

b) The total quality concerns and the offering of higher guarantees to the client (in particular, in building construction) will arise not only as a consequence of higher requirements from the owner but also from the commercial policies of the firms (i.e. a certificate of total quality will become a strong commercial weapon, meaning a competitive disadvantage for the firms that fail to obtain it, as presented in the chapter 2).

In this sense, the concept of total quality includes a stage of internal organization in the own company, in order to make possible that each intermediate level of the chain (for instance, each construction unit) presents to the next level a semi-finished product in the best conditions and ensuring the efficiency of the whole process.

The total quality integrates, obviously, the quality of materials and construction systems, but also includes:125

- a higher adaptation to the particular needs and preferences of the final recipient of the product;
- flexible solutions, stressing the permanent "redesign" and the versatility and substitution capacity of the projects; and

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125 Jose Luis Carreras Yañez, "Perspectives of the construction for the 90s", Papeles de Economía Española, #50, 1992.
• the increasing importance of after-sale guarantees, even including the maintenance and repair services.

c) Several contractors will assume as well the role of "concessionaire" companies for infrastructures and other public facilities financed and managed by the private sector.

The existence of a close relationship between the major Spanish construction firms and the major financial entities of Spain will likely support this type of operations.
6.2. Technological innovation.

The Spanish research in construction has been considered so far like an "unnecessary luxury" (the figures presented in the second chapter were representative enough). This lack of commitment by the Spanish firms in terms of R&D will certainly be a source of disadvantage in the future. Two reasons underlie to this situation:

a) A lack of support from the Spanish Administration; in particular, in the next issues:

- few incentives for the firms (for instance, tax reductions associated to R&D investments);
- few public programs of R&D in construction; and
- restrictive budgets to develop university programs connected with the industry.

b) It would not be fair, however, to charge on the Administration the whole responsibility; in fact, the own construction companies have been reluctant to increase their investment on R&D as a consequence of:

- perceiving the sector as particularly low sensitive to the technological development; and
- a classic and mistaken argument: "if we develop R&D programs, the results will be stolen by our competitors; let them investigate".
Such attitudes require a drastical change, since the fact of having specific technologies will be (and is being nowadays in Europe) an important differentiation element and thus, represents a strong competitive advantage (this is applicable to both the general contractors and the specialized medium-size companies).

The source of disadvantage for the Spanish contractors as a consequence of their low technological innovation will be further stressed by the strong effort that, in contrast, are making other EC countries. In fact, many European countries are establishing research units, formed by an association of construction companies with several university departments. Besides, there are multinational projects with EC financing (such as ESPRIT, EUREKA or BRITE) that support the R&D programs of the companies involved.

The technological renovation of the construction activity is expected to be dramatic during the 90s\textsuperscript{126}, given the continuous improvements in machinery and materials and the massive introduction of computerized systems.

In particular, there are top-technology subsectors for which the companies should be prepared; though such subsectors do not have currently a determinant share in the revenues of the construction companies, they are markets with a good potential in the future. As an illustration, the so-called "new construction products" include:\textsuperscript{127}

\textsuperscript{126} Jose Luis Carreras Yañez, "Perspectives of the construction for the 90s", Papeles de Economía Española, #50, 1992.

\textsuperscript{127} Several authors, "The Construction Sector and Civil Works", Department of Commerce and Industry of Madrid; research included in the "Special Program of Information and Training of the Mediterranean companies in the 1993 Common Market framework". Madrid, October 1990.
• Macroengineering (Eurotunnel; connexion Greece/Italy; connexion Gibraltar; Escandinavian macroprojects, etc.)
• Alternative massive sources of energy (i.e. release of the European energetic dependency).
• Geological deposits (wastes, mainly atomic; regional wastes of hazardous or inflammable materials; natural gas, etc).
• Intelligent buildings.
• Subterranean urbanism and civil works (networks and suburban tunnels).
• Under water and out-of-coast construction.
• "Growing" construction (i.e. solutions by components or modules, adapted to the -changing- client needs).
• High-speed railroads.
• Recovering of coasts and seabords.
• Continental canals.
• Infrastructures and facilities associated to leisure.
• Decontamination of the major rivers and seas (Mediterranean).
• Integral rehabilitation of urban districts.

The mentioned fields represent good opportunities for the major Spanish contractors to enter, following a strategy of gradual integration of some of these top-technology subsectors. The objective would be double: not only they are potential growing markets but also the introduction in projects that require high technological levels might increase the concern about the necessity of innovation throughout the whole company, having a multiplicative effect in terms of R&D and extending the effort to the traditional activities.
6.3. Human resources.

The first -and most important- issue to deal with is the training of the personnel. The single principle of "training is competitiveness and competitiveness is survival" has not been extended with enough depth to the Spanish companies. In fact, the Spanish Association for the Training and Development of the Companies (AFYDE) has published recently a study\textsuperscript{128} concluding that the training occupies the sixth position in relation to other priorities of the companies, in particular: (1) investments; (2) costs; (3) planification and restructuring of payrolls; (4) technological innovation; (5) internal organization; and (6) training. Following that study, the main lags are found to be in:

- The training is not one of the first priorities of the companies.
- The current training is aiming to provide "promotable" personnel.
- There is a lack of global strategic projects; the training is mostly focused on isolated activities.
- Training is used to some extent to balance other labor-related dissatisfactions; frequently used also as a "prize" at the top management levels.
- The current training is positioned -paradoxically- in a high level of the organization's structure.

\textsuperscript{128} "The requirements of training in the Spanish company within the European Common Market", AFYDE in collaboration with the Human Resources Institute of the Universidad Complutense de Madrid, published by El País, 8/29/93. The study is based on a set of interviews to 2,000 Spanish companies of several sectors -not only construction-. The data resulting from those interviews will be used throughout this part of the chapter.
• Its budgets are clearly scarce.

• The companies rely more on their own resources and private organisms rather than on public agencies.

• Few training programs at the middle-line managers level.

• The ways to measure the efficiency of the received courses are not very useful (in particular, 46% of the interviewees considered the methods of measurement completely useless).

The analysis that follows is focused on the priorities of training for the firms: (1) by subjects; (2) by organizational levels; and (3) by functional areas in the company.129

(1) Training by subjects. The priorities of the Spanish companies for the next years are (from highest to lowest priority): foreign languages, computer sciences, marketing-commercial-sales, human resources management, organization, new technologies and management procedures.

These priorities will mean a certain change with respect to the current distribution of the expenses in training, mainly in the issues related to marketing-commercial. In fact, the current expending in training is (from highest to lowest): computer sciences, automation technologies, foreign languages, finance-economy and law, hygiene and safety at work, marketing, production and engineering, organization and planification, purchases and stocks management, international trade, R&D, public relations and finally unionism.

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129 Based on the study mentioned in the previous footnote and particularized for the construction companies through personal interviews in Dragados, Ferrovial, Huarte, Agroman and Entrecanales.
(2) Training by organizational levels. The top management levels will have priority during the next years in terms of training, followed by the middle-line managers and finally the operating core.

This means also a change in the priorities of the companies; currently, the "technostructure" (i.e. professional group of technical staff) is the one receiving more training, followed by the middle-line managers and, far away, by the top level managers, administrative staff and operating core.

(3) Training by functional areas. The priorities will be focused on the production departments, given the necessity of introducing new technologies; in a second place, the commercial department, in order to provide a service and client-oriented culture; in a third place, the economic-law-financing departments, in order to face the economic and legal consequences derived from the EC Common Market.

The objectives of the companies with the several areas of training mentioned above are (from highest to lowest importance):

- have the availability of "retraining" personnel;
- way to ensure the incorporation to new sectors; and
- increase the professional qualifications of their technical staff.

The firms are also asking to the Administration for the legal recognition of their courses in training and for the necessity of fiscal advantages to ensure such courses.
Together with the objectives highlighted by the own companies, an increase in the training of their personnel might support as well the next goals:

- increase in the motivation and labor-related satisfaction of the personnel;
- subsequent increases in productivity;
- easiness in the integration of the workers;
- possibilities of internal promotion along the company;
- spill over the knowledge about the culture and goals of the firm throughout the whole organization (supporting the indoctrination efforts);
- provide knowledge of the organization itself and its functioning;
- development of the autonomy and decision-making capabilities of the personnel;
- increase in salaries; and
- higher level of participation in all the structural units.

However, there is a clear inconsistency between the high theoretical value given by the managers of the companies to the efficiency of training and the actual budget for it. In fact, with respect to the former, the training department is usually positioned in a high level of the organizational structure; in particular, it depends directly from the general manager of the firm (in a 31% of the companies included in the study by AFYDE\textsuperscript{130} ) or from the department of human resources (in a 50% of the companies).

\footnote{\textsuperscript{130}"The requirements of training in the Spanish company within the European Common Market", AFYDE in collaboration with the Human Resources Institute of the Universidad Complutense de Madrid, published by El Pais, 8/29/93.}
With respect to the latter (i.e. budget) almost the half of the interviewees in that study were not able to specify the percentage spent in training (with respect to their total expenses in salaries); from the remaining companies, 25% of them provide for training between 0.5% and 1.5% of their total wage costs and only 3% of the firms destined for training more than a 7% of their total wage costs. Globally, 22% of the companies considered in the AFYDE study had not promoted yet any training activity.

Such figures are threatening the competitiveness of the Spanish companies, since they are well below with respect to their European competitors, and extremely far away from the average in the American and Japanese companies.

Together with the necessity of increasing the training programs, there are other factors related to the human resources strategies; in particular: 131

a) Selection of personnel with high skills and capabilities (i.e. intensify the selection processes with an individualized follow-up). In fact, the increasing complexity and diversity of the contracting systems, the technological development and the processes of decentralization in the construction companies (addressed in detail in the next pages) will lead to operative structures based mostly on high-skilled staff (technical staff, foremen, etc).

In this context, the major construction companies have been developing during the last years programs of "recruitment" in the Spanish universities (in particular, civil

131 Personal interviews in Ferrovial, Huarte, Entrecanales and Agroman.
engineering schools) with outstanding results. Several firms also use their subsidiaries as a human resources breeding ground (for instance, *Entrecanales* with its technical subsidiary *Iberinsa*).

b) The introduction of flexible organizational structures for the complex projects will be linked to an increase in the work performed by multidisciplinary teams; for instance, the current relatively high weight of the civil engineer (in the role of site manager) in the construction companies might be reduced in favour of a team approach that includes experts in financial engineering, marketing, architecture, intelligent buildings, environment, electronics, etc.

c) It will be important as well to establish integral programs in human resources (global strategic approach) rather than sporadic activities; this requires periodic evaluations of the fitness in the relationships among structural units, tasks and staff for each position, avoiding the existence of idle or poorly utilized resources.

d) One of the main disadvantages for the international activity of the Spanish contractors (addressed in the chapter 3) is the reluctance of their personnel to work abroad (at least in comparison to other European contractors' staff); further, this low geographical mobility is also true among different regions of Spain. The incentives to change this scenario are not limited to wage premiums, but also to develop further motivations and interests within the staff involved; in other words, part of the responsibility to support the geographical mobility will have to come from the department of human resources.
6.4. Internal organization.

The remaining analysis will be focused on: (1) the trends that the major Spanish contractors are following with respect to organizational issues; and (2) the influence that such trends are having on the design parameters and organizational culture of the companies.

(1) Trends in the internal organization of the companies.

The organizational structure of the companies cannot be considered a strategy "per se", but rather the result (or the way to achieve) the specific strategies discussed throughout these pages. In particular, the next issues seem relevant with respect to the internal organization of the companies:

a) Decentralization. The process is favoured by:

- the diversification in the businesses of the companies;
- the widening of their geographical scope;
- the information-related technologies introduced (i.e. massive process of computerization).

Such decentralization is usually achieved through operative divisions or subsidiaries coordinated by a single structural unit that centralizes the functions of financing, strategic planification and control. Such structure supports a quick short-run responsiveness (i.e. operativeness) of the organization, keeping at the same time the necessary coordination and control (mainly in order to implement the long-run
strategies decided at the top-level management).

Note, however, that the factors mentioned above (product-diversification, geographical expansion or information technologies) do, indeed, favour the process but are neither sufficient nor necessary conditions for a process of decentralization to be followed, i.e. a divisionalized firm can remain centralized in each division (as explained in the previous chapter) and a company with a functional structure, in contrast, can decentralize its decision-making centers along its hierarchy. In fact, the actual decentralization of both management and decision-making centers will depend also on external factors, such as the external control of the organization or the environment faced by the company (i.e. dependent organizations or hostile environments lead usually to structures with a higher level of centralization\textsuperscript{132}).

b) \textit{Level of subcontracting}.

The process of internal decentralization mentioned above will likely be complemented with the decentralization of the execution phase of the projects, that is, an increase in the level of subcontracting\textsuperscript{133}. In fact, the complexity of the construction projects will require increasingly a set of different specialized organizations, each one with their own tasks, goals and cultures, sometimes even with conflicting interests.

\textsuperscript{132} Henry Mintzberg, "The Structuring of Organizations", N.J., 1979. See also point 5.3. in the previous chapter.

\textsuperscript{133} The current level of subcontracting in Spain reaches a 34\% of the total production in construction (for the companies with more than 200 workers). Jose Luis Carreras Yañez, "Perspectives of the construction for the 90s", Papeleras de Economia Española, #50, 1992.
The role of managing and coordinating those specialized organizations is being gradually transferred from the client (or his representatives) to the general contractor.

c) **Structural configurations.**

Both the internal decentralization within the companies and the increasing level of subcontracting can be translated in the necessity of adopting highly flexible organizational systems and coordinating styles adapted to a great diversity of "managerial cultures". In particular, the structural configuration of the construction companies can experience changes at the next levels:

- increasing number of middle-line managers, optimal position for the personnel with accumulated direct experience (for instance, former "on site" managers with years of experience);
- decreasing weight of the "operating-core" levels of the major contractors, given the higher percentage of subcontracted work; and
- project organizational structures relying on multidisciplinary teams; such organic configuration might be a requirement in those projects with a high level of complexity or associated to top-technology aspects.

(2) **Design parameters and organizational culture of the companies.**

With the framework of the organizational trends addressed above, this part will deal with their influence on the design parameters and organizational culture of the
construction companies, in particular with: (a) job specialization; (b) behavior formalization vs. training and indoctrination; (c) influence of the information-related technologies; and (d) issues related to the organizational culture as the project structural configurations move towards the "adhocracy".

a) *Job specialization.*

The construction companies are affected by two different forces with regard to specialization: increasing horizontal specialization coexists with an also increasing vertical job enlargement. In fact, on one hand, the increased efficiency and productivity obtained by subcontracting is leading to a job specialization (in the sense of limiting "scope" or horizontal specialization). On the other hand, it was mentioned as well how the construction firms tend to gradually decentralize their day-to-day decision centers moving them to the site engineer or manager, so increasing the autonomy (control over the work) and responsibility of the site managers (vertical job enlargement).

This vertical job enlargement will take place not only at the mentioned middle-line managerial level but also at the operating core level: in fact, it will be likely less unusual to find "Quality Circle" meetings in which the opinion and proposals of each particular crew are taken into account in order to improve productivity and to increase the participation -and the level of responsibility- of the construction workers. Several productivity improvements in construction might be due to this increased participation at all levels in the control over the day-to-day work (perhaps higher motivation levels are achieved as well within the operating core level).
b) Behavior formalization vs. training and indoctrination.

Obviously it is quite difficult to formalize the job, work flow or rules in an industry in which each work and each site is different. Instead of that, construction firms rely more on training and indoctrination. In particular, training is more commonly used at the operating core level, performed through apprentice programs usually developed by the own contractors and exceptionally developed by unions (in both cases insufficiently, as discussed previously); in the level of "technostructure" also the stress is given to training (in universities, when talking about engineers, etc).

In contrast, indoctrination seems the preferred way when talking about the middle-line managerial ranks; in fact, loyalty to the firm and socialization of members becomes extremely important when the jobs are far from the central office, as is common in construction (in particular, for the major firms with increasing number of subsidiaries and projects abroad).

c) Influence of the information-related technologies.

The Spanish construction companies have not been traditionally among the leaders in the use of computer-based information systems (CBIS) technology; however, the increasing complexity of the construction projects together with the more demanding and knowledgeable clients have led during the last years to the general introduction of CBIS.
Following an article by Irwig and Reinhardt\textsuperscript{134}, a CBIS can be successfully implemented without necessarily disrupting a firm's existing organizational structure; further, it can be used to support almost any organizational change which may be necessary to allow a firm to be more responsive to its contingency factors.

The particular aspects concerning to the Spanish construction companies can be summarized as follows:\textsuperscript{135}

- Consistently with the Irwig and Reinhardt paper, the introduction of computers in the Spanish companies did not result in drastical changes in the strategy or structure of the organizations. Nevertheless, it resulted indeed in important changes in terms of the relations among departments (interunit relationship) which was temporarily translated in a certain duplication of responsibility with respect to some phases of the projects (specific project manager vs. manager of the Data Processing Center).

- Though there has not been drastical changes in the organizations' structure, it is fair to mention how the introduction of the computer systems supposed a higher qualified operating core during the first years and later an increase in the support staff structure with respect to the productive units (traditional departments). This fact is also consistent with the Mintzberg's theory that relates the higher sophistication of the technical system to the higher elaboration of an administrative structure\textsuperscript{136}.

\textsuperscript{134}Henry Irwig and William Reinhardt, "CBIS in the construction firms: organizational aspects", MA, 1983.

\textsuperscript{135}Personal interviews in Entrecanales, Ferrovial and Huarte.

• In some companies, the creation of a Data Processing Department to centralize the CBIS was -at first- consistent with the strategy and organization of the firms, but created important problems when interacting with the other departments, suggesting a decentralization of the computer systems as well (perhaps the intrinsic divisional structure of the firms was also more compatible with a decentralized computer-based system, as finally appeared). It is in this context that the conclusions of the Irwig and Reinhardt paper hold: the introduction of the computer systems did not change the intrinsic structure of the companies; on the contrary, it was the Data Processing Center who had finally to adjust to the previous structure, so being broken into decentralized units adapted to each division.

d) *Issues related to organizational culture as the project structural configurations move towards the "adhocracy".*

Among the structural configurations mentioned when analyzing the future trends in the internal organization of the companies, it was stressed the necessity of adopting project organizational structures relying on multidisciplinary teams (in particular, in those projects with a high level of complexity or associated to top-technology aspects).

This structural configuration is defined as an "adhocracy" in the Mintzberg's classification of the organizations. The main characteristics of an "adhocracy"

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137 Henry Mintzberg, "The Structuring of Organizations", N.J., 1979. Note, however, that in the present analysis the adhocratic configuration will be used for specific projects' organizational structures or for sub-structural units of a company (such as the R&D department), not for the construction company as a whole (which, in general, will maintain a divisionalized form).
form of organization can be summarized as follows:

- decentralization - no single concentration of power - ;
- matrix and organic structure;
- work divided into multidisciplinary teams stressing the mutual adjustment coordinating mechanism.

From my point of view, the main change in the culture or philosophy of an organization facing "adhocracy" is this team approach; the success of the organization will depend on how its people accept this way of working and, particularly, how each team is assembled for each project, taking into account the personality, the skills, the pace and also the personal preferences of its members. Besides, different skills and personalities might be needed at different stages of the project, which will also encourage informal review and criticisms along its performance.

The advantages of this organization might include:

- Innovation in types of contracts, types of design, type of projects and even type of relationships with clients. These innovative approaches require flexibility in the structure.
- It is a "problem-solving oriented" organization during the design process; this unique-problem solving is opposed to any kind of standardization.
- High levels of self-actualization of the people involved (the work is usually creative and the team gives the opportunity to each member of focusing on his preferred field).
Nevertheless, I think there are also two main conflicting points when a project organizational structure reaches the adhocracy: first, the flow of information and the decision-making processes are spread out and not highly organized which could create confusion or ambiguity ("who is my boss?"; "which is my job?", etc). Second, the matrix structure and the team approach could eventually become a disadvantage when facing an hostile environment or frictions in terms of interpersonal relationships (i.e. such internal frictions hit much more to the organization that relies on mutual cooperation of its people than to a centralized or standards-based structural unit).

Summarizing, the team approach can be advantageous for both the successful completion of a complex project and the people involved when it is followed by an internal "cooperative culture" -as opposed to competition into the firm-; a certain acceptance of ambiguity and a complex yet not very hostile environment -that could create tensions in the collaborative effort-.
SUMMARY AND CONCLUSIONS.

The first part of this thesis was devoted to analyze both the contingency factors and the structural factors affecting to the Spanish construction sector, the former with a relatively transitory impact and the latter with a more permanent influence on the competitiveness of the companies. In particular, the current environment ("contingencies") is characterized by:

- A recessive domestic economy, immersed in an international recession wave (particularly, in Europe) yet with special -and stronger- effects in Spain, mainly in terms of low investment and huge unemployment rates.

- The weakening of output and employment is a direct consequence of a fall in investment (rather than consumption), which means a lower potential for future growth.

- In particular, the investment in construction has been reduced more than the average decrease in investment and amplifies further the negative tendency in the total output.

- The lower internal demand has been translated during 1992 into negative growth for all the construction sectors (except renovation and maintenance), particularly in civil works -given the intense reduction in public bidding with respect to the previous years-. 

• The Spanish construction firms find themselves oversized (both in equipment and human resources) with respect to the current domestic demand, and after a period of tremendous growth.

Among the structural factors affecting the companies, those with a stronger effect on their competitiveness are:

• A rigid labor market, highly unionized, that has pushed towards wage increases well above the actual productivity increase and comparatively higher than other EC countries’.

• Also the financial costs (consequence of the high interest rates) and the fiscal costs are comparatively higher for the Spanish firms than for their European competitors.

• Internally to the construction companies, the main sources of disadvantage arise from their low expending in R&D, technological innovation and training programs; the higher requirements on quality and responsibilities in the EC Common Market; and the gradual introduction in Spain of new financial models and contracting systems that require an increased attention to issues not directly related to the traditional activities (pure construction) but more service-oriented (like the financial management of the projects).

It is true that a certain recovery of the internal demand can be achieved by the fiscal policies adopted by the Government, mainly through the Director Plan for Infrastructures, defended previously as an instrument to reactivate the whole
economy by investing in locomotive sectors (i.e. construction) which have a strong multiplicative effect in terms of output and employment.

Also the correction of some structural inefficiencies, such as the ones related to the labor market, might result from "collective strategies": collective bargaining with unions at a national scale, which is recently called a "social agreement" to overcome the recession period.

Nonetheless, the position of the Spanish construction companies cannot just rely on the expectations of a recovery for the domestic construction activity (though important) or on the "collective strategies" (in particular, social agreement). In contrast, since the final objective is not only to overcome the current domestic recession but also to improve their competitiveness and long-run strategic positioning, both in the domestic and international markets, the construction firms have to pursue active strategies; the core part of this thesis has been addressing such strategies, that can be summarized as follows:

**Internationalization.**

The role that the major Spanish construction companies have been playing in terms of international activity is very poor in comparison to other European contractors; in fact, there is no correlation between the weight that Spain has with respect to the total turnover of construction in Europe and the small percentage achieved in exports. The main issues to consider in order to change that position of disadvantage are:
Develop strategies to ensure a stable presence abroad, which is the weakest aspect of the Spanish construction firms, that have traditionally considered the foreign markets just as a complement for the periods of low domestic demand.

It is true that the activity abroad can balance the inflows of the companies facing a recessive national market (like is currently the case) but the opposite argument (i.e. to disregard foreign markets during domestic "booms") has a pitfall, namely: the exports in construction require a long and complex bargaining process, knowledge of the country and its people, long periods "in situ"; thus, if the Spanish firms leave eventually their place abroad (like many of them did during the years 1986/90, following the expansion in the national market), it will be difficult to recover strategic positions after some years, since new firms will have settled in that country.

The strategies to enter foreign markets will depend strongly on the country faced; in particular, the available ways for the Spanish companies to enter in other EC countries -and in developed countries in general- are highly constrained by the local components of construction (knowledge of the market and clients, local contracting procedures, etc) together with a strong competition during the bidding process with a qualified and organized local supply; hence the penetration in a developed country requires the support of a "local center" of operations (possibilities of joint venture with local partners, acquisition of local contractors or creation of a small subsidiary in the country that will grow with local resources).

Dissimilar, the exports to less developed countries can be "direct": the firm presenting a bid alone and performing a project in which the local supply would be
less efficient or in which a particular technology that cannot be supplied by the local contractors is required.

- The strategy of the exporting firm is not limited to find the best way of entering a foreign market but also -and sometimes, even more important- to find the way of financing the projects in that country (in particular, the financial difficulties of many developing countries require the availability of a financial package to win a bid). The ways of financing the projects might include B.O.T. contracts (i.e. strategy for the firms of changing the product instead of changing the market when that market has become insolvent), countertrade agreements or financial support of export credits from the exporting country (like in the case study about the Medellin subway).

- The types of support to the construction exporting sector are not limited to the exports and commercial credits; the firms can rely as well on bilateral agreements for cooperation and international financing organisms in terms of financing the projects, and on export insurance, training and commercial promotion in terms of consolidating their foreign markets.

- The process of "europeization" of the activity is being slower in Spain than in other EC countries, yet the participation of Spanish contractors in projects along the EC has been increasing during the last years.

- Finally, the exporting construction activity to the East European markets is fed by a high local demand but constrained by several factors (mainly by the financial situation of the countries involved). However, the support of international
entities and the development of the appropriate strategies can mean a good challenge of entering in such emerging markets.

Merger processes.

In order to compete with other EC contractors in the process of "europeization" of the construction activity mentioned above, the major Spanish companies need a minimum critical capacity (in terms of financial resources, staff of middle-line managers and technology) that, in some cases, can be reached through processes of concentration. This strategy can be considered both active -to be able to enter new markets- and defensive -to maintain the local market-, since several European macrofirms are acquiring as well permanent positions in Spain.

Several factors should concur for a merger process to succeed; in particular, the next issues seem relevant:

- A starting point supporting a process of association between two firms is to present areas of mutual interest and potential synergies to gain. The former include a certain complementarity in terms of common goals and capabilities (for instance: common plans of expansion; collaborative effort in technological innovation; complementarity in types of projects; or financial situation of the companies involved, i.e. the merger can reduce the financial burden of new projects with respect to the separate performance).

However, the size itself does not preclude a higher competitiveness and efficiency of the firms; this will result if the new group is able to generate positive synergies in
terms of operative improvements, advantages linked to the higher financial capacity and unification of resources.

- Further, for a merger process to succeed it is not enough that the two companies involved have areas of mutual interest, common objectives or even potential synergies to gain; the way to ensure a long-run success is directly linked to structural issues and passes through an appropriate restructuring of the emerging company at all levels (configuration, strategic apex, middle-line managers, operating core, coordinating mechanisms, flow of decisions and information, etc).

The restructuring of the emerging company is a function of the new common strategy; the environment faced (i.e. markets) and the possibilities of integrating the two management teams.

- The actual implementation of the merger process may be easier if the firms present a similar structural configuration or just the existence of common operative areas (business units), allowing for an integration "from bottom to top", that is, to integrate first the activities of the two companies in each unit; then, the merging configuration of the top-structure will be easier to accomplish (this gradual merger had to be developed by the company FCC with a deep restructuring of the firm, after recognizing that the actual integration had not been possible with a "fast" process).

- In particular, the problems faced by the emerging company can be associated to: the pace of the process; the integration of the two management teams; and the structure adopted, as corroborated in the FCC case-study.
• The issues mentioned above are related to the phase of "consolidation" of the emerging company; however, the process can result a failure even during the first stages, mainly as a consequence of: the lack of a previous background of common work between the firms can lead to perceive the other company as a competitor rather than a partner; and mainly if the operation is designed by a common owner of the companies without taking into account to the managers of the organizations involved (both negative factors concurred in the case-study about the attempt of association between the companies Huarte-Lain).

Diversification.

The process of diversification of the construction companies has been favoured by the double objective of providing and provoking new demands related to a higher approach to the specific needs of the clients, introducing the concept of "finished product", in which the "pure construction" is only a part of the project, with a decreasing share in the total turnover of the firm while the service-oriented components of the projects present an increasing share. The next issues require as well attention:

• Together with the new demands for "finished products", other reasons encouraging the companies to follow a process of diversification are: (1) neutralize to some extent the strong effects that the economic cycles have on the "pure construction" sector, in terms of allowing for leveling financial and human resources during a recession period (this was the case in the example of the company Ferrovial, and also FCC, Dragados and Cubiertas); (2) the process can generate
certain synergies with the traditional activities (namely economies of scope), in particular the vertical integration and the horizontal diversification to activities that maintain a complementarity with construction; (3) the process of horizontal diversification to activities not related at all with construction can be understood as a risk-diversification financial instrument for the family-owned companies or major equityholders.

- The current diversification is characterized by a strong vertical integration: most of the companies have included among their activities the phase of engineering and designing the projects (backwards) and have integrated service-oriented components, mainly real state promotion (forwards). With respect to the horizontal diversification to complementary sectors, the more outstanding market is the sanitary and environment-related industry.

- The major future trends in the process of diversification of the Spanish companies include a further expansion, mainly through a vertical integration in their value-chain (in particular, towards service-oriented activities) and through an horizontal expansion to "close" sectors, such as the sanitary and environmental projects (in particular, water treatment facilities). Dissimilar, the expansion to "remote" sectors will likely remain concentrated for a few top firms merely as a financial instrument.

- The existence of a close relationship between the strategy of diversification followed by a company and the structural configuration that it adopts was recognized in the example of Ferrovial. In particular, each restructuring was characterized by a
further divisionalization of the organization: both by regions (when the diversification strategy focused on geographical expansion) and by products (when the diversification strategy focused on different markets). The structural changes towards divisionalization are followed by a decentralization of the decision-making centers towards the divisions and, in some cases, within the divisions.

Other strategies.

In order to improve the competitiveness of their companies, the major contractors have to give as well attention to:

- Commercial strategies, in terms of: (1) "supply strategy", anticipating and somehow shaping the demand; (2) total quality, including flexible solutions, stressing the permanent "redesign" and the versatility of the projects as well as providing higher after-sale guarantees to the client; and (3) several contractors are assuming the role of "concessionaire" companies for infrastructures and public facilities financed and managed by the private sector.

- Technological innovation. The fact of having specific technologies will be a differentiation element of increasing importance and thus, represents a strong competitive advantage.

To follow a strategy of gradual integration of top-technology subsectors would have a double objective: not only they are potential growing markets but also the introduction in projects that require high technological levels might increase the concern about the necessity of innovation throughout the whole company, having a
multiplicative effect in terms of R&D (one of the weakest aspects of the Spanish construction firms) and extending the effort to the traditional activities.

- Human resources, including integral programs in terms of: (1) selection processes with an individualized follow-up; (2) dramatical increases in the training of the personnel, establishing priorities by subjects, organizational levels and/or functional areas; and (3) supporting further motivations and interests with respect to the geographical mobility of the staff, with both a national and international scope.

- Internal organization. The trends in the internal organization of the companies are towards: (1) decentralization of management and decision-making centers; (2) increased level of subcontracting; and (3) project organizational structures relying on multidisciplinary teams (in particular, in those projects with a high level of complexity or associated to top-technology aspects).

In order to translate those trends into the appropriate structural configurations of the companies, the next issues require attention: (1) job specialization (increasing horizontal specialization coexists with a vertical job enlargement); (2) training and indoctrination; (3) adaptation of the information-related technologies to the structure of the organization (for instance, decentralizing as well the data processing centers); and (4) change in the culture of a project organizational structure facing "adhocracy" (i.e. issues related to the multidisciplinary team approach).
Global strategic approach.

It is important to note that those major strategies discussed throughout these pages are highly correlated (positively or negatively). For instance, a merger process can be a good way for the companies involved of achieving a minimum capacity (in terms of financial resources, staff or technology) that enables them to follow further strategies of diversification (like in the case of FCC) or internationalization (in particular, process of "europeization").

Similarly, the strategies related to commercial positions, human resources and internal organization might be developed as a function of other strategies, such as geographical or market expansions (positive correlation).

By comparison, the strategies of product-diversification and geographical expansion (including internationalization) present a certain negative correlation: a company could try to expand simultaneously both its geographical and products scope with an aggressive growth-oriented policy; yet that would represent such a dramatic change in both strategy and structural configuration that its possibilities of succeed are scarce. That company would likely become "stuck in the middle" (engaging in each generic strategy but failing to achieve any of them). The same negative correlation is true for a company that tries to achieve a product differentiation (through technological innovation) at the same time that a product diversification.
In other words, trying to follow all the strategic movements at the same time could be translated into a "competitive suicide" rather than a competitive advantage (it is not casual that the examples and case-studies presented throughout these pages to illustrate each of the strategies corresponded -in general- to different companies).

What this is suggesting is the necessity of a global strategic approach, that establishes the priorities and correlations among business units, acquisitions, mergers, international dimension and financial position of the company as a function of its objectives and contingency factors faced. Such strategic approach is to be followed by a structuring (or restructuring) of the company as a function of the specific strategy adopted; in fact, the successful implementation of each strategy requires an efficient structural configuration (such relation was stressed extensively in the case of a merger process and in the case of a geographical or product diversification).

Finally, the conclusions drawn out above are not obviously definitive rules or "final solutions" for the Spanish construction companies; the complexity of the subject is high enough to allow for a further critical discussion, based on different assumptions or investigations.
BIBLIOGRAPHY.

1. ABC. "Why are not we competitive?", 4/18/93.


15. EL PAIS. Several articles:
   • Economic issues: 2/8/92; 10/5/92; 1/19/93; 1/20/93.
• Construction firms related: 3/25/93 (Agroman); 4/3/93 (Huarte-Lain); 8/29/93 (several).

16. EL PAIS Internacional. Economy-related articles: 10/12/92; 2/8/93.

17. Expansion. Several articles:
- Economic issues: 2/12/93; 3/10/93; 3/12/93.
- Acquisition Lilley: 1/8/93; 1/13/93; 2/22/93.
- Agroman: 11/16/92; 3/2/93.
- Ferrovial: 1/30/92; 5/25/93; 5/28/93.


34. Noticiario Economico. Articles 11/23/92 (Lain); 2/1/93 (Huarte-Lain case).


