ORGANIZATIONAL ADAPTATION IN THE VENEZUELAN PETROLEUM INDUSTRY AFTER NATIONALIZATION

Vol 1

By Susan Johnson de Vogeler

Master of Public Administration, Harvard University, 1981

Master of Planning, Universidad Central de Venezuela, 1963

Bachelor of Science in Industrial and Labor Relations, Cornell University, 1959

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Signature of Author

Department of Urban Studies and Planning

December 1987

Certified by

Donald A. Schon

Ford Professor of Urban Studies and Education

Department of Urban Studies and Planning

Certified by

Richard Beckhard

Adjunct Professor of Management and Organizational Behavior

Sloan School of Management (retired)

Certified by

James & Austin

Professor, Harvard School of Business Administration

Certified by

Ramon Piñango España

Academic Director, Instituto de Estudios Superiores de Administración (IESA), Caracas, Venezuela

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By Susan Johnson de Vogeler

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ABSTRACT

The literature about state-owned enterprises refers to the relations between governments and state-owned enterprises, where the central issue is how to manage the tension between state control and industry autonomy. To gain insight into this issue, the relationship between governments and their enterprises was examined through the lens of two organizational change theories: organizational adaptation and organizational learning. The focus was on a subset of state-owned enterprises: those that were private and have been nationalized. The method used was a case study of the Venezuelan petroleum industry between 1976, when it was nationalized, and 1984 and 1985, when the study was conducted. Fifty industry directors and managers and eight top government officials were interviewed in depth about their experiences during the nationalization period.

From the analysis of the interview data there emerged a central dilemma of multiple and contradictory demands from the industry’s three environments—the international oil market, the state and the national environment, and the intracorporate or internal environment. By comparing the industry’s adaptive responses and patterns of responses to the central dilemma, and contrasting them to industry behavior before nationalization, it was possible to trace adaptive patterns and identify instances of organizational learning. It was discovered that the industry adapted more effectively to the traditional and new oil tasks than to the interfaces with the state or to its own internal changes.

Adaptation to the central dilemma was a dynamic process, a constant resolution of conflicts across the environments as the shape of the dilemma changed; there were transactional stages of the central dilemma, so that the nationalized industry was responding to a constantly moving target.

An important part of the organization’s adaptation to the central dilemma can be seen as a process of becoming a state-owned enterprise, in the sense of facing the typical dilemma of government control and industry autonomy, and the related issues of multiple objectives and diffuse decision centers in the state. By looking at the process through the lens of organizational adaptation theory, state-owned enterprise theory is seen to be a theory of adaptation to two
specific environments, the market and the state, and to the tension between them. Nationalization is a transition from the status of private to public ownership.

The Venezuelan petroleum industry was an unusual state-owned enterprise and this affected its transition process after nationalization. It was an oil company, vital to the Venezuelan economy and the source of most of its foreign exchange. It was nationalized at a time of turbulence in the market and economic turbulence at home. It had been private and foreign-owned for sixty years and nationalization culminated a long process of increased government control. The state also instructed the newly nationalized industry to retain many ways of behaving like a privat firm.

Besides the market and the state, the third environment, the intracorporate environment, is crucial to explaining organizational behavior of nationalized industries. The intracorporate environment has a history or culture of behaving toward the state and the market as a private business does. Furthermore, each nationalized industry has a specific structure before nationalization and afterwards, and these generate their own demands and influence the way the organization responds to the market and the state.

Mutual adaptation between the nationalized enterprise and the state is a process whose effectiveness is vital not only for industry outcomes but, when the industry is as important as oil is in Venezuela, for national outcomes also. The state is specified as a field of organizations rather than as a homogeneous body or a large bureaucracy, so that effective mutual adaptation requires that each organization study the nature of the others and the interaction among them. To the notion of multiple and diffuse decision centers, part of state-owned enterprise literature, is added the idea that each organization has its unique history and culture, mission and sources of power, which shape its organizational behavior and perceptions. The state-owned enterprise must therefore respond to each one differently, and the newly nationalized industry must learn to adapt differentially to each one and to the dynamics of the interaction or dialogue between them.

Both the state and the state-owned enterprise can learn to manage the relationship, to achieve dynamic balance and to tolerate some imbalances or swings during the different transactional periods. They can do this by organizational inquiry and reflection, by learning that the needs for autonomy and control will shift over time as the environments shift and by learning about the nature of the other organizations and about the dialogue among them.

Thesis Supervisor: Professor Donald A. Schon, Ford Professor of Urban Studies and Education. Committee: Professors Richard Beckhard (MIT, retired), James Austin (HSEA) and Ramón Piñango (IESA, Caracas).
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Part I. PROBLEM AND CONCEPTS

I. THE RESEARCH PROBLEM

State-owned enterprises are a special kind of organization. They are hybrids: states create them as policy instruments, so they are expected to be economically productive as business firms, and also to respond to the public interest (Aharoni 1984). Their peculiar characteristics are documented in the growing literature about this kind of organization.

Part of that literature refers to the relations between central governments and the state's enterprises, where the central issue is how to manage the tension between state control and industry autonomy (Vernon 1985 and Kelly de Escobar 1985). The present study proposes that one way to gain insight into this issue is to examine the relationship between governments and state-owned enterprises through the lens of organizational change theory and to focus this lens on a particular kind of state-owned enterprises: those that were originally private and have, for a variety of reasons, been nationalized. Nationalized enterprises can be assumed to be a distinguishable subset of state-owned enterprises because of their organizational history and culture of behaving as private firms.
Most of the literature on the relationship between central governments and state-owned enterprises is of a somewhat static nature—the typical dilemmas of control and autonomy are identified and described, but little is known about the dynamic nature of the relationship, how it develops and shifts over time. This study proposes to show that nationalization can be understood as the process of becoming a state-owned enterprise, a transition from the status of privately-owned business to that of business organization owned by the state, and that a closer look at this process can illuminate the dynamic nature of dilemma of control and autonomy.

Two theories of organizational change are especially appropriate for examining the state-industry relationship. Organizational adaptation literature proposes a contingency theory, which says that organizational behavior is shaped by the organization's adaptive responses to its environment. Organizational learning theory proposes that organizational inquiry and reflection about the adaptive process can lead to more effective organizational change, while lack of inquiry can lead to repetition of organizational errors. By examining the relations between governments and state-owned enterprises through the lens of these two theories of organizational change, this study proposes to show that the issue of control and autonomy, and the related issues of multiple objectives and industry accountability to many
diffuse decision centers in the state, develop as part of
an organizational process in which the state and the
nationalized enterprise respond to one another in an effort
to maintain a mutually acceptable degree of balance between
control, by the state, and industry autonomy, for the market.

With respect to the need of the state-owned enterprise to
respond to multiple and diffuse decision centers in the
state, which is discussed in state-owned enterprise
literature, the present study proposes to show that it is
more useful to understand the state as a field of
organizations than as a monolithic or homogeneous body or
even, as Vernon (1985) suggests, as a complex bureaucracy.
Each organization of the state has its unique history and
culture, mission and sources of power, which shape its
organizational behavior and perceptions. The state-owned
enterprise must therefore respond to each one differently,
and the newly nationalized industry must learn to adapt
differentially to each one and to the dynamics of the
interaction among them.

Furthermore, the existing literature focuses on the dilemmas
faced by state-owned enterprises as they respond to the pulls
from two environments, the state and the market. The present
study examines, besides, the nature and requirements of the
internal or intracorporate environment of the nationalized
enterprise—an environment shaped by a history of behaving as
a private business, with considerable autonomy of action, and
by a particular organizational structure and strategy. The
literature has addressed specific questions about the intracorporate environment, particularly motivation and incentive systems; the present study, however, covers a range of complex and interrelated structural and behavioral characteristics in the intracorporate environment of the nationalized enterprise, which contribute to explain the responses of the enterprise to the market and the state.

The nationalized enterprise, then, is responding simultaneously to three environments: the business environment, the national environment (mediated by the state) and the intracorporate environment (its history, culture and structure.) And these three environments interact with each other in different ways over time, depending upon their respective forces and their turbulence, so that the nationalized enterprise is responding to a constantly moving target. Thus the process of becoming a state-owned enterprise does not stop; it develops over time as the demands of the environments change and as the balance among them swings back and forth. This study proposes to show that there are transactional stages in the nationalization process, according to the shifting nature of the interaction among the three environments, and at each stage the mutual relations between the enterprise and the state (in its several parts) are different: there is elasticity in the demands of the state upon the enterprise and in the enterprise's responses.
It is further proposed that both parties--state and state-owned enterprise--can learn to manage the relationship, to achieve dynamic equilibrium and to tolerate some imbalances or swings during the different transactional periods. They can do this by organizational inquiry and reflection, by learning to understand that the needs for autonomy and control will shift over time as the environments shift. In this context, the study proposes to identify organizational factors that inhibit or enhance such organizational inquiry and reflection about the process of mutual adaptation.

Some of the conclusions about nationalized enterprises, especially those about organizational learning, have implications for the larger set of state-owned enterprises in their relations with the state over time, as conditions in the state, the market and the organizations themselves change. Thus the study has relevance for practitioners too, in the sense that it offers insights about how to manage the relationship between the state and the enterprise.

The method chosen to study the processes of becoming a state-owned enterprise and of mutual adaptation between the state and the enterprise, to achieve a dynamic equilibrium between autonomy and control, is through a case study of the Venezuelan petroleum industry.

The Venezuelan petroleum industry was nationalized on January 1, 1976. The nationalization was in many ways exemplary. A two-year national debate among important political and
economic sectors preceded the event. The agreement was peacefully negotiated with the foreign oil companies, compensation was based on net book value of assets, and production and sales were not interrupted.

The transnational oil companies that had concessions in Venezuela had seen nationalization coming since the early 1960s, and more and more Venezuelans had been moved into key positions from then on. By 1975 more than ninety percent of the industry's work force was Venezuelan, although certain key positions were still reserved for foreign personnel. The average experience in the industry of Venezuelan employees was eighteen years. At nationalization technical assistance agreements were negotiated with the former concessionaires to guarantee technological support and efficiency of operations, and commercial agreements were signed with them to assure continuity of sales of crudes and products for the first few years, but the management of the newly nationalized petroleum industry was in the hands of Venezuelan nationals.

The organization structure adopted was a federation of vertically integrated subsidiaries (in Spanish, filiales—these units are wholly owned by the holding company and in English are called affiliates, subsidiaries, companies or operators) under a newly formed national holding company, and this arrangement allowed the major nationalized companies to retain for some time their staff and many of their administrative and cultural characteristics.
But it is a central thesis of this study that, in spite of
the relative smoothness of the process, nationalization of
the Venezuelan petroleum industry induced deep, complex and
long-lasting changes in the organization as it sought to
respond to changes in the environment. The organizational
responses are the focus of the present study.

Between 1976 and 1985 the industry faced complex issues
that arose from the fact of nationalization and from other
simultaneous changes in the industry's environment: the form
that the nationalization took (its process and structure);
the gradual exit of the transnational companies and the
building of PDVSA; the extraordinary price increases of
crudes and products in 1974 and 1979, the growing uncertainty
of the oil market and the changing role of OPEC; the
increased scale of the work force employed by the industry to
meet new challenges; and changes in the Venezuelan political,
financial and economic environments.

Nationalization meant that the Venezuelan state was now the
exclusive owner of the Venezuelan petroleum industry. Among
state-owned oil industries, it was in many ways unique. It
concentrated on planning for the production of heavy crudes
for the future (although considerable attention was also paid
to medium and light gravity ranges which might yet be
discovered in existing reservoirs). The industry was
vertically integrated with several operating affiliates and
it sold to the international and the domestic markets; and
there were no other oil companies in the country. (There were, however, an important number of private service companies.)

The decision to nationalize oil culminated a process that began in the 1930s, a gradual process of building Venezuelan expertise in petroleum engineering and management while increasing the state’s fiscal and technical control over the industry. The process is summarized below, and it reflects that the nationalization of the petroleum industry in Venezuela was a political decision with strong historical and ideological roots. The decision was congruent with a strategy of state capitalism, but it was not made until the economic, technical and political realities of the early 1970s made a nationalized petroleum industry look viable in practical terms.

The nationalization process was peacefully negotiated with the transnational companies and the organization structure adopted was a federation of fourteen, later merged into four, vertically integrated operating affiliates or subsidiaries under a newly created holding company. At the time of the interviews that were conducted for this study, in 1984 and 1985, five other affiliates included the petrochemical industry, research, international purchasing, and the PDVSA offices in the United States and the United Kingdom.

A central component of the nationalization of the Venezuelan petroleum industry was financial autonomy (self-financing);
the purpose of the state was to allow the industry flexibility of action in the international market, within the strategies of the national plan (República de Venezuela 1974). The nationalization law provided that the holding company, PDVSA, would receive ten percent of the operating affiliates' net export earnings in order to finance the industry's operations. The notion was later broadened so that PDVSA could keep the dividends that remain after taxes (Viloria 1983). PDVSA would propose the use of the funds in the annual consolidated budget, elaborated according to guidelines dictated by the Ministry of Energy and Mines. The budget proposal would be subject to approval by the sole stockholder, the Venezuelan state, represented by the Minister of Energy and Mines (PDVSA n.d. and Viloria 1983). Financial autonomy is a concept whose meaning and boundaries were tested between 1976 and 1985.

Continuity of the "meritocracy", or system of professional management, now to be in the hands of Venezuelan nationals, was another element of the nationalization model: almost all of the industry employees were Venezuelans, and they stayed on after 1976 with virtually identical working conditions.

An important change that the Venezuelan petroleum industry faced after nationalization was the exit of the transnational companies. It created vacuums in finance, corporate planning, international sales and research. It also meant that experienced oilmen from other countries, who had spent years in Africa, Indonesia, the United States, Europe and
other parts of Latin America, would no longer form part of
the staffs of the Venezuelan oil companies, although they
might be contracted under technical assistance agreements.

The international petroleum market changed sharply during the
1970s, and since most Venezuelan oil was sold abroad this was
an important change for the Venezuelan petroleum industry.
Prices increased enormously in 1974 and 1979, and it was
harder and harder to predict demand for crudes and products.
The structure of the international market changed, as
independent companies and then producer country enterprises
replaced, in large measure, the seven major companies which
had dominated the market for decades. OPEC grew stronger and
then, as its proportion of the international market
diminished, OPEC began in 1982 to impose production quotas on
its members in order to hold up the price.

There was also a change of scale in the Venezuelan petroleum
industry after 1976. For years the transnational oil
concessionaires in Venezuela had cut back on their production
potential and staff while producing as much as they could.
In the mid-1970s world and domestic demand for oil looked
promising, so the newly nationalized industry, anxious to
gain momentum, emphasized exploration, drilling exploration,
well workover, long-range maintenance, and the building of
new projects, especially the modification of the refining
patterns. To do this, the industry had to recruit, hire,
incorporate and manage large numbers of people, many of them
just out of college. So the industry work force, which had
dwindled from nearly 50,000 in the early 1950s to 22,000 in
1975, doubled to 44,000 between 1976 and 1982, and it was as
a whole a much younger group.

The Venezuelan economic, financial and political situation
also changed between 1976 and 1985. The late 1970s were
years of bonanza, increased government expenditures and
optimism. This began to change in the 1980s, and by 1982 the
national government had a severe shortage of fiscal revenues
and foreign exchange, owing to the weakened oil market,
diminished confidence on the part of the private sector and
large government debts with foreign banks.

There were two changes of national government after 1976,
both as a result of free elections. In 1979 Acción
Democrática lost the elections to the other major party,
Copei; in 1984 Copei lost to Acción Democrática. Both
changes implied new appointments to major and minor
bureaucratic posts in the Venezuelan state. These changes in
the national environment implied many things for oil industry
management, among them increased requests for information,
control and cash.

This study was designed to discover how the organization
perceived and responded to the above changes in the
environment. Two general questions guided the research:
Did the Venezuelan petroleum industry after nationalization
begin to behave more like a state-owned enterprise, as such
enterprises are described in the literature? And, what can be discovered about the change process after nationalization—how did the industry respond to its new status as a nationalized organization and to the other, simultaneous changes in the environment?

The major source of data for the study was a set of interviews that I conducted in 1984 and 1985 with fifty industry directors and first-line managers. These experienced executives had a unique and important vision of the nationalization process and what it had meant for the organization. Their own accounts and perceptions of the process were, I argue, an essential ingredient for understanding the organizational behavior that followed nationalization. The interviews were complemented with documents and with interviews with eight highly-placed public officials who had interacted with the petroleum industry between 1975 and 1985.

The rest of this document is about the study. Chapter II proposes the conceptual framework, based on literature on state-owned enterprises and on organizational adaptation and learning. The chapter also includes a detailed and critical description of the interview strategy and process. Chapter III describes the relative stability of the oil market, the national context and the industry through the early 1970s, while Chapter IV shows how each environment became more turbulent between 1976 and 1985.
Chapters V through VIII present and analyze the research findings about the industry’s responses to its changing environments after nationalization. Chapter V describes the transition years, roughly 1974 through early 1976, when there emerged a central dilemma of multiple, contradictory demands from the state, the market and the intracorporate environment. I propose that the central dilemma, though new, had roots in the past and that its changing shape can explain much of the industry’s behavior between 1976 and 1985.

Chapter VI centers on responses to the changing international business environment as the industry geared up for expansion, in the optimistic late 1970s, and then, as the market looked more and more uncertain, explored and implemented a new and highly controversial international marketing strategy, the strategy of vertical integration, downstream.

Chapter VII, the planning case, shows how the nature of development planning changed in Venezuela in the 1970s and how the very different mutual perceptions of the industry and the state made it hard for them to adapt to one another as they drew up the energy sector of the Sixth National Plan, early in the 1980s. Difficulties in adapting led to unwanted outcomes of interorganizational endeavors and to some organizational inquiry within the industry and the state.

Chapter VIII analyzes the complex intracorporate environment by studying the evidence referred to building PDVSA and its relations with its formidable affiliates—established oil
companies that were now truncated from their former
transnational holding corporations and had been reorganized
into a set of subsidiaries under the new, national holding
company. The forces of organizational history and culture,
which at times enhanced organizational adaptation and at
times constrained it, are manifest in this chapter.

In Chapter IX the organizational responses are interpreted as
a process of adapting to the changing shape of the central
dilemma as the industry moved from its status of private
enterprises to state-owned enterprise and as the state, in
its various organizations, sought to adapt to its new status
as owner of the nation's most important industry.
II. CONCEPTUAL FRAMEWORK AND RESEARCH STRATEGY

The present case study of organizational adaptation in the Venezuelan petroleum industry after nationalization was designed, carried out and interpreted in the light of concepts and theories about state-owned enterprises and organizational change, borrowed from several authors.

State-owned enterprises

State-owned enterprises play an increasing role in market economies, in industrialized and developing countries alike. Since the nineteen fifties most developing countries, including those of Latin America, have created state-owned enterprises not only in the more traditional areas of public services but also in manufacturing, banking and commerce. Some of them were part of national strategies for import substitution; others emerged as part of a wave of nationalizations, especially in the petroleum and mining sectors, during the 1970s (Vernon 1983).

In Venezuela, state-owned enterprises have been used above all to channel oil revenues toward investments in heavy industry, without the direct intervention of the private sector. They contributed five percent of gross territorial product in 1974, just before the government nationalized the iron industry and the petroleum industry. By 1982, state-owned enterprises contributed twenty-nine percent of gross territorial product; twenty-two percent came from oil and, of the other seven percent, more than half came from state-owned
financial enterprises and the rest came from iron, steel, aluminum, electricity and others (Kelly de Escobar 1984).

As "hybrids", created by the state as policy instruments which should be economically productive and also respond to the public interest, state-owned enterprises are charged with multiple objectives, which usually include some of the following: profitability, provision of cheap services, cross-subsidies, correction of market imperfections, generation of foreign exchange, generation of employment, accelerated global or regional development, and impeding of foreigners' taking over strategic industries or opportunities that could be handled by national interests (Aharoni 1984).

The multiple objectives are often mutually competitive or even incompatible. They are seldom ranked according to priorities and they usually change over time. This creates dilemmas both for the government, as controlling agent, and for the state-owned enterprise managers (Vernon 1985). The classic dilemma, for both the state and the enterprise, is how to manage the tension between state control and industry autonomy (Vernon 1985 and Kelly de Escobar 1985.)

Modern states have many decision centers, so that control of the state-owned enterprises is often diffuse, and the structure of power within the traditional public sector is bound to be reflected in the government's efforts to control its enterprises. So the state-owned enterprise managers face what Aharoni calls "the crucial question" of "how to preserve
the advantages of independent operation while at the same
time ensure accountability to bodies that represent the
state, tax-payers and the political process" (1984:12).

Besides, more state control means less industry autonomy, and
this tends to suppress managerial innovativeness, because
managers may fear punitive actions from the state if they
make the mistakes that are inevitable in innovation. So
state-owned enterprise managers may be unwilling to take
risks—unless they can develop action strategies for managing
this very dilemma (Aharoni 1984).

There are usually two distinct types of state-owned
enterprise managers: engineers—traditional profit-
maximizers whose interest lies primarily inside the
enterprise—and commissars—whose interest lies primarily
outside the firm, largely in the political sphere. The
behavior of a typical state-owned enterprise is usually the
result of constant tension with a coalition of engineers and
commissars (Kelly de Escobar 1982).

Governments also face the dilemma of control versus autonomy,
and they too have trouble achieving a balance between them.
The search for an effective link between ministers and
managers has been difficult and its results have not been
satisfying (Vernon 1984, 1985). The dissatisfaction arises
partly from the multiple objectives and diffuse decision
centers. The question of who shall represent the government
in its dealings with the state-owned enterprises is never
free of ambiguity, owing to the wide base of national participation (at least in theory) and to the fact that many parts of the government are concerned with some aspect of the state-owned enterprise activities. Whatever formal mechanisms the government uses to control its enterprises—a special ministry for state-owned enterprises, attaching each enterprise to a particularly ministry, the development of plans or contracts between managers and bureaucrats—there are also less tangible factors that shape the relations between ministers and managers. The strength of the personality of the president of the nation is one; the nature of the political coalition is another. In any case, each ministry has limits as to what it can control, and the link between ministers and managers may be weak, not so much because ministers are intransigent but because managers are strong and may become become a political force in their own right (Vernon 1984, 1985).

Another source of dissatisfaction in the search for a link between ministers and managers is the nature of the interaction between them, which usually takes place around four activities: articulating strategic goals through the national plan, regulation, the budget and cash flow, and seeking and granting (or denying) of special concessions.

The national development plan may be used as a vehicle to articulate a consensus among sectors of the society with regard to strategic national goals, and these include goals
for the state-owned enterprises. But in many developing countries, the planning bureaucracy is technically weak and ministers, who tend to stress vertical relations more than horizontal ones, thus inhibit the kind of interaction that could link enterprise activities effectively with national plans (Vernon 1984 and Grindle 1977). Besides, governments in industrialized and developing countries alike are periodically voted out of office or driven out by other means, and changes in government can be expected to bring about changes in national policy and plans, which may in turn imply shifts in the operations of state-owned enterprises (Vernon 1984).

When ministers and managers interact around the regulation of state-owned enterprises, it is usually the managers, more than the ministers, who have the skill and knowledge that make it possible to manage an efficient business and, therefore, provide income and credibility for the government. This fact gives power to state-owned enterprise managers, so they have some flexibility or room to maneuver, at least in the short run. In those state-owned enterprises involved in the sale of raw materials in international markets, like oil and copper, ministers' efforts to direct those enterprises as if they were monopolies have usually proven to be either futile or costly to the countries concerned. In such industries, marginal costs are typically much lower than full costs, so most producers are careful about instituting price reductions since their competitors might follow suit;
in the longer run, if there were a spiral of price cuts, the enterprise would not be able to recover its full costs. Enterprises that operate in strongly oligopolistic markets must be able to behave differently from the assumptions of the competitive market and must sometimes engage in cooperation with their rivals (Vernon 1984, Sherer 1970).

The budgetary exercise is the government process that has the most decisive and immediate effects on state-owned enterprises. Governments try to keep some balance between income and expenditure; typical state-owned enterprises (oil is not typical) tend to run out of cash and make unexpected demands on the national treasury. Fiscal authorities try to limit how much the state-owned enterprises may draw down or, as in the case of oil, to set goals on how much the enterprises will contribute, but in any case governments have trouble controlling the cash flow.

Still, state-owned enterprise budgets are better kept separate from those of the government proper, to make managers more accountable for performance and to protect ministers from charges of profligacy. Separate budgeting can also create a separate source of cash that the government can draw on at strategic junctures, and it is also useful to create an international or domestic borrower distinct from the government itself, but whose resources can be funneled into government accounts. So the cash flow issue is a key element of the interaction between ministers and managers of state-owned enterprises (Vernon 1984).
Another part of the interaction between ministers and managers, as Vernon spells it out, has to do with managers seeking special concessions and ministers granting or denying them: protection from foreign imports, a guaranteed monopoly on sales to another state-owned enterprise or loans at concessionary terms (or, in the case of oil, a special exchange rate, choice oil fields or specialized markets).

The outcome of the difficult relations between governments and state-owned enterprises is that the agreements that operate between enterprise managers and government ministers are usually a mixture of long-term gains with short-term objectives, a mixture that changes frequently in content and that is rarely tested for its internal consistency. "The idea of a rational set of goals, responding to some coherent concepts of optimality and serving as a feasible measure of command and control, remains remote" (Vernon 1984:19). And this epitomizes a dilemma of democracy: the desire to use the power of the state for important national purposes, versus the legitimacy of rival value systems and diversity and change.

Even where a long-term strategy can be defined for the state-owned enterprises, under relatively stable conditions and where the plan is good, the strategy will not be valid for more than a few years. To be relevant, the approach to agreements between ministers and managers must encompass a considerable range of contingencies. Political science helps
to explain this, since policy-makers do not make their
decisions in large optimizing exercises but in small
increments, with constant feedback and adjustment (Pressman
and Wildavsky 1979). When a state-owned enterprise interacts
with the government, it is usually the case of a large firm
interacting with a large bureaucracy, and there is no optimum
applicable to all countries; this notion builds on earlier
propositions about the behavior of large firms (March and
Simon 1958).

Each arrangement will therefore reflect the values of
the country concerned, but there may still be considerable
room for choice, so that

anyone who is charged with predicting or prescribing for the
enterprise must constantly keep in mind the compelling
demands that derive from operating in oligopolistic markets,
from responding to multiple objectives, and from
accommodating to uncertainty and change (Vernon 1984:23).

The above notions provided the framework within which to
study the Venezuelan petroleum industry after nationalization
and to discover which of its responses to the changing
environments were typical of state-owned enterprises. Before
presenting the conceptual model of the change process, I will
define the organization that I am calling the Venezuelan
petroleum industry and review the research strategy and
process.
The Venezuelan petroleum industry

The Venezuelan petroleum industry is an organization, in the sense that Argyris and Schon (1978) propose: it is a collectivity, with established procedures for making decisions in the name of the collectivity, for delegating to individuals the authority to act for the collectivity and for setting boundaries between the collectivity and the rest of the world. Argyris and Schon also say that it is the members who devise procedures for decision-making, delegating and setting boundaries, and that is not altogether true in the case of the nationalized Venezuelan petroleum industry. The laws governing the industry were developed outside it, proposed by the national executive and approved by the congress. The Presidential Commission that drew up the Draft Bill of the Nationalization Law spoke of the creation of the "National Petroleum Administration", a state entity that would be separate and distinct from the central administration. That entity would "manage the country's petroleum industry, once it was nationalized" (República de Venezuela 1974:V-108); national policy guidelines would come from the owner through the Ministry of Energy and Mines. Internal procedures were devised and adjusted by members of the collectivity itself over the years, a great many of them under the concessionaire regime.

Even though the members themselves did not develop all of the procedures for acting as a collectivity, I find that they meet the conditions for an organization. They say, as
Argyris and Schon suggest, "we" about themselves and they act for the collectivity, even though they have not created all the rules themselves. But it is not immediately evident where to draw the boundaries of the organization I am calling the Venezuelan petroleum industry, and since a large part of the organizational change studied here is in the nature of responses to other changes outside the organization, it is important to define the boundaries. It seems clear that they must include the holding company and all of its subsidiaries. But what should the boundary lines exclude?

A case could be made for including the Ministry of Energy and Mines as part of the Venezuelan petroleum industry. The Minister himself represents the nation, which owns the industry, at the stockholders' meetings. The Ministry as an institution is charged with developing guidelines for the industry and for controlling its performance. An important part of the history of the Ministry is rooted in the history of the Venezuelan petroleum industry. Besides, there exists a group of people who have worked both for the oil companies and for the Ministry in the past, and there is still some moving back and forth of executives from one to the other.

It would also be possible to include in the organization called the Venezuelan petroleum industry those private contracting companies in Venezuela that work almost exclusively for the oil industry, and even the university programs designed to prepare professionals and do research
for the industry. Both groups have grown out of the oil industry and depend on it for their existence; conversely, without the national contractors the industry would have to hire more people and go abroad more often to get certain jobs done.

But I argue that for the purposes of this study—to understand the processes of organizational change following nationalization of the petroleum industry in 1976—PDVSA and its affiliates can best be conceived as a discrete organization. I refer to it as "the Venezuelan petroleum industry", or simply, "the industry". In this view, the Ministry is nearby but outside, a different organization that is a part of the industry's environment; the contracting companies and oil-related university programs are also, in this view, outside.

In fact, people outside the petroleum industry speak of those in PDVSA and its subsidiaries as petroleros, oilmen—and so, for that matter, do the oilmen themselves. "We," in most of their references, means "we, the oilmen". I argue that the Venezuelan petroleros reveal organizational characteristics that distinguish them from the employees in the Ministry and other parts of the public administration, on the one hand, and from the local contractors, on the other; that these differences are not just superficial questions of style (punctuality, the short American-type lunch hour, the frequent use of English) but that they reflect profound differences of context and vision; and that they contribute
to the dynamics and the outcomes of the interaction among the industry and other organizations.

Another term, "the oil sector" (el sector petrolero), is often used to include all of these groups: the industry, the Ministry, the private contractors and the oil-related university activities. Planners, for instance, while drawing up the national plans, refer to the oil sector to distinguish it from the electricity sector, the education sector, agriculture, and so on. Individuals may say they have always worked in the oil sector, "but not always in the industry". I use this term in the same way.

It might also be possible to treat each subsidiary and PDVSA as a separate organization. To members of the industry, especially the old-timers, Lagoven is one thing and Maraven is something else. And even those companies that are the result of mergers have distinct organizational histories and cultures, while PDVSA is a relative newcomer, often referred to by the metaphor of a mother created by her daughters. But for the purposes of this study, where there is special interest in examining the adaption of the Venezuelan oil industry to its new status as a nationalized enterprise, it seemed most appropriate to consider the holding company and its subsidiaries as one organization, with the common tasks of discovering, producing, refining and selling Venezuelan oil.
But it is a heterogeneous organization, and this affects its change process. If indeed the Venezuelan petroleum industry after nationalization is a whole that is more than the mere sum of the former concessionaires plus a newly-created holding company, it is also true that, in order to understand the industry's behavior, it is necessary to keep in mind that each part--Lagoven, Maraven, Corpoven, Meneven, PDVSA, and so on--has its own history and integrity, and this fact shapes the outcomes of the industry as a whole. For other purposes--for instance, for a study centered on explaining the effects of cultural differences upon executive career development or upon technology choice (Villalba 1985)--it might be more useful to treat each subsidiary as a separate organization. But for the present study, the cultural diversity among the different subsidiaries and the holding company is treated as a relevant characteristic of the intracorporate environment, a characteristic that sometimes enhances organizational effectiveness by providing variety and other times is a stumbling block by impeding communication and cooperation.

Within the Venezuelan petroleum industry, the study concentrates on PDVSA and the three exporting operators, Lagoven, Maraven and Corpoven. These four units make up the core of the organization charged with producing and distributing Venezuela's oil.

Having so circumscribed the Venezuelan petroleum industry, I chose to approach it, first of all and above all, as an
agent, or an instrument for the achievement of social purposes, in particular, the efficient production, refining and marketing for profit of Venezuela's oil. In this view an organization seeks to be instrumental and rational. Organizations-as-agents work to achieve objectives by the judicious selection of appropriate means and they act upon the environment through decisions that are made by individuals in key roles, managers, who see the organizational world mainly from the perspective of the instrumental rationality of engineering. Organizations-as-agents focus on acquiring and applying knowledge that is useful for effective performance of the organizational tasks. The organizational world is studied through scientific method—through empirical observation, modeling, and experiment (Argyris and Schon 1978).

In general, the Venezuelan petroleum industry fits this description well. The oil concessionaires went to Venezuela in search of profit, and the nationalized industry was expected to be profitable and efficient in a competitive market. Systems were designed for decision-making, and individuals in key roles made decisions in an effort to act upon the environment. The managers reasoned above all as engineers; most of them really were engineers. For these reasons, I found that the idea of organization-as-agent was a fitting approach to study the Venezuelan petroleum industry.

But in places other approaches are used to interpret the industry's behavior after nationalization, simply because in
places they seem to fit the data, to complement the view of
the industry as an instrumental agent or to contrast to it.
That is, the industry did not always act exclusively as an
instrumental agent. In particular, the history of the oil
industry in Venezuela had created organizational cultures
that shaped organizational behavior after nationalization.
Schein defines organizational culture as:

a pattern of basic assumptions—invented, discovered, or
developed by a given group as it learns to cope with its
problems of external adaptation and internal integration—
that has worked well enough to be considered valid and,
therefore, to be taught to new members as the correct way to
perceive, think and feel in relation to those problems
(Schein 1985:9).

But overt behavior in an organization is determined not only
by the cultural predisposition (the patterns of assumptions,
perceptions, thoughts, and feelings), but also by the
situational contingencies that arise from the external
environment. Therefore, observed behavior patterns, norms,
dominant values espoused by the organization, philosophy,
rules, feeling or climate—terms that are used by several
authors to define organizational culture—are better
understood as reflections of the organization's culture.
Culture itself is at the deeper level of

basic assumptions and beliefs that are shared by members of
an organization, that operate unconsciously, and that define
in a basic "taken-for-granted" fashion an organization's view of itself and its environment. These assumptions and beliefs are learned responses to a group's problems of internal integration. They come to be taken for granted because they solve those problems repeatedly and reliably (Schein 1985:6-7).

In the present case, the idea of organization-as-culture was used to understand distinctive behavior of the different subsidiaries that did not seem to reflect, altogether, an organization-as-agent. And when the industry interacted with parts of the public administration, as an agent seeking to preserve organizational autonomy, the approach of organization-as-culture helped to explain the dynamics of the interaction.

The approach of organization-as-politics was also useful to explain organizational behavior, both internally, in the fight for survival among the operating affiliates, and with parts of the state where, as Vernon says above, political science must be used to explore the relations between ministers and managers.

The "fit" of these alternative approaches is also a result of the research, because it shows that to some degree and in some areas the industry's behavior was not typical of an organization acting exclusively with instrumental rationality.
According to this approach, organization-as-agent, individuals represent organizations or act as agents for them, and directors and managers are the official representatives and decision-makers. It followed that the way to study the Venezuelan petroleum industry was to focus on the directors and managers. And in fact, owing to the industry practice of hiring recent college graduates for professional jobs and planning careers for them within the industry, almost all of the directors and managers had had a long career in the organization. Their experience gave them a historical view and their positions at the top of the industry hierarchy gave them an overview; this also made it sensible to study the industry by interviewing them.

But if managers had a historical perspective and a view from the top, it is also true that a complete picture of the industry would require a focus on individuals at all levels of the organization: directors, managers at different levels, secretaries, technicians, and workers. Each level might offer a distinct vision of the industry, and the combination could provide an integrated picture, or it might show contrasts and contradictions. It would also be possible to study sets of individuals by functions (exploring, production, refining, supply, sales); by profession; by years of experience in the industry (an intergenerational study); or by operating subsidiary. But since I carried out this study alone, and since part of the research problem included defining the very questions that I most wanted to study--
within the framework of the general question, "How did the Venezuelan petroleum industry change after nationalization?"—it seemed most fruitful and feasible to concentrate on a group of directors and managers.

Direct observation of how the directors and managers behaved before nationalization was of course impossible, and direct observation in the present was only theoretically possible. Observation of even a small sample of managers in their daily work would have taken too much time for one researcher, even if the necessary access could have been gained. Another alternative, the review of internal documents over time, as Mintzberg and Waters (1982) have done, was not possible for an outsider in so sensitive and vital an industry.

Nor was it at first clear what areas or issues were to be observed. There were few studies of the nationalization from the point of view of organizational adaptation. Gustavo Coronel's book, *The Nationalization of the Venezuelan Oil Industry* (1983), was one of the few. Coronel, a former industry executive, analyzed the nationalization process between 1976 and 1983 in terms of what he interpreted as an initial technocratic success (1976-1980), when the industry was assured considerable autonomy to manage itself, and subsequent politicization after 1980. The account is, as he says, not an academic work but a personal testimony, an oilman's testimony of his own experiences in those years, and he attributes much of the politicization to specific groups and persons. He sets his analysis in the context of the
history of the oil industry in Venezuela and of the oil market, and then he traces his vision of the changes after 1976, with specific, detailed references to the industry's major projects and to the events and many of the people in the industry and the government.

The facts and analyses in Coronel's book have enriched the present study of the nationalization process, but the two works are different. The present study is academic; it sets out to examine a range of organizational responses to a variety of changes in the environment, in the light of state-owned enterprise literature, and through the lens of organizational change literature. Nationalization is focused as a transition from the status of private ownership to that of state-owned enterprise, under special conditions in the market, the state and the industry itself. My analysis centers on selected cases of change within the industry, while Coronel gives an overview of the industry's activities in the same years, and I use at times a more conceptual language than he does to describe and explain the findings.

Coronel and I both study the industry from the inside—he as a former insider, with his own long experience and with internal documents; I as an outsider, working through interviews to discover specific organizational processes. We are both trying to understand the relation of the oil industry to the state and to the market, but I am also interested in analyzing the internal managerial responses and
changes, at specific levels and in specific cases, as they were described to me by industry executives. That is, the industry itself as an organization is the major focus of this research.

An undergraduate thesis presented to the Andrés Bello Catholic University in 1975 (Luque Quiñones and Rodríguez Sosa) documents in detail the apprehension with which a hundred and twenty Venezuelan managers of the concessionaires watched nationalization approach, especially their fear that politics would enter the industry and erode the merit system of promotions. This work provides a valuable benchmark of this important aspect of organizational behavior, since it shows the roots of the managers' later reflections, in 1984 and 1985, about the threat of politicization.

Villalba's study of the Venezuelan petroleum industry (1985) is directly pertinent to the present work, since it shows in detail how organizational culture interfered with rational, economic technology choice during the first years after nationalization, but the present study seeks to understand how organizational history shaped the nationalized industry's responses to a variety of changes across its relevant environments.

A group of professionals in Foninves, the industry's research and training foundation, studied the Foninves scholarship program between 1974 and 1982, from the perspectives of organizational learning and culture (García Del Otero, et
The authors conclude that the scholarship program achieved continued excellence after nationalization, owing in part to the participation of the academic community in the selection and follow-up processes. The participation in turn helped to link the academic community more closely to the industry which, although it had been nationalized for several years, had traditions of organizational culture that isolated it from the rest of the institutions of the country. Now that the industry belonged to the state and was an ever more determinant source of the country’s income, there was pressure for more interaction with other institutions. The tendency toward greater dependence of the industry on the country’s institutions (after nationalization) was reinforced by the incorporation of new personnel too swiftly to permit effective socialization into the informal behavior patterns that had made the oil industry so different from other Venezuelan institutions (García Del Otero, et al. 1982).

The Foninves analysis of the relations of the industry and the national environment around the scholarship program, set in the context of organizational learning and culture, is pertinent to the present study but, again, this study covers a wider range of functions and units—though not with the same detailed analysis of internal documentation over the years—and it also explores the relations among the industry’s responses to the business environment, the national environment and the intracorporate environment.
The present study, then, builds on these earlier works but it is different from each of them in several ways. It is framed in two bodies of literature, state-owned enterprises and organizational adaptation and learning. It is centered on the inside, but from the perspective of an outsider from the academic world; in this it is similar to Villalba and to Luque Quiñones and Rodríguez Sosa but different from Coronel and the Foninves group. The data come from extensive, guided interviews with many industry executives over a period of two years, and they are used to interpret the organization's responses to many stimuli. The industry interviews are complemented with eight interviews with public officials, and with documentation. The analysis comprises a selection of specific instances and cases of response, as executives described them, which are used to trace the dynamics of the responses and draw inferences from them about changes in organizational behavior after nationalization.
The nature of the evidence

The choice of directors and managers to represent the industry for this study raises important questions about the nature of the evidence. The central issue is, what does it mean to study, retrospectively, a process of organizational adaptation and learning? The present section discusses the sample and the interview process and then it addresses the nature of the relation between the individual and the organization.

Industry representatives set up one interview each with fifty directors and managers of the holding company (PDVSA), the three exporting operators (Lagovens, Maraven and Corpoven) and the industry's training center (CEPET). This access to so many high-level executives in the industry was extraordinary. Venezuelan politicians are very used to giving interviews; Venezuelan oilmen are not. The access did not at first depend on me; there were industry directors who thought the study would be useful, so they backed it. My contribution was to carry out the first interviews effectively enough that the doors not close on later ones—to establish credibility. This was not automatic. Several of the executives included in the sample were, at the outset, openly skeptical about the study and its unknown authoress. I was told that the first people who were interviewed found the process worthwhile and passed their impression on to others.
The sample is described in detail in Annex II-1. It included twelve PDVSA directors, seven PDVSA managers, five company directors and twenty-six company managers. Nearly all of these fifty Venezuelan oilmen, or "petroleros", had been working in the industry for between twenty and forty years. Most of them had worked for the transnational concessionaires, where they had been managers or directors when the industry was nationalized. A few had begun their careers in Venezuela and later had been assigned by the transnationals to work in the home offices or in other countries; these few had returned after nationalization at the invitation of the industry. One experienced oilman in the sample had gone to the private domestic sector and returned to the oil industry in 1976. Five had been in the state-owned Corporación Venezolana del Petróleo or in Mito Juan (a small company of private Venezuelan capital) and four in the Ministry of Energy and Mines. Six had been hired after 1976; these six had had ample experience in public planning and development agencies.

A fairly large number of the people interviewed were chosen from the staff functions that cut across all the industry activities: human resources, corporate planning, organization planning and organizational development. A small group was chosen from international sales, in order to tie the research results to the major business activity of the industry. During their respective careers, most of the directors and managers in the sample had worked in major line
functions: exploration, production and maintenance, refining, transportation, purchasing and domestic sales. At least two had worked in research.

Besides the interviews, I was invited to observe two training meetings for first-line managers, which broadened and deepened my vision of industry management. One was a week-long corporate vision course and the other an afternoon training meeting in a course on environmental analysis. These two programs are also described in Annex II-1.

Almost all of the oil industry interviews were held in the executives’ respective offices. The shortest interview lasted for forty minutes, but most of them went on for an hour or more, and a few people generously accepted being interviewed as many as four or five times, so I could check on certain issues and probe others. No one refused to be interviewed, and nearly everyone conceded the date right away and kept it.

I conducted all the interviews myself. I told each person that the contents of the interview were confidential and would be kept in my private office. In the reports to the industry and in the dissertation, references would be made to specific interviews, but in such a way as to mask the identity of the speakers. For that reason the only woman among the executives interviewed is referred to as "he"; otherwise it would be too easy to identify her remarks.
Most of the interviews were conducted in Spanish, but a few were in English—I was surprised to discover that English is a language of trust in the petroleum industry; the opposite is true in the rest of the public administration. During the interviews I recorded the sequence of ideas in shorthand, in as much detail as I could. I transcribed the notes in English (with some expressions in Spanish, when they seemed especially vivid) as soon after the interview as possible, often the same day or the day after, but sometimes a week or more later. Where the notes were ambiguous, this was recorded in the transcription. I was able to go back and clear up some ambiguities, but not all of them. When ambiguous statements are quoted in the reports, I say so.

After the preliminaries, I asked two questions: how has your work changed as a result of nationalization? and, what key decision areas do you face in your work today? From the speaker's first replies, I worked to follow and stimulate his chain of thoughts so that I could discover how he made sense of the industry and the changes he had experienced. Annex II-2 is a fragment of the transcription of an interview with a company director, which reflects the interview process and my recording of it. Many other quotations are included in the text of the findings.

The eight interviews that were held with government officials who had participated in the nationalization process—four of them had held the rank of Minister—were thoughtful and specific. These officials were as a rule less punctual and
less circumspect than the industry people, and they spoke longer—, from an hour and a half to three hours. One interview was in fact a discussion of three people besides myself. Here again I have referred to the three women as "he" so that they cannot be easily identified.

Where possible, the interview data have been complemented with documentation.

Four industry "readers"—a director and three managers, one with forty years of experience in the industry, two with more than twenty and one with five—read and commented in detail on the five reports to the industry (Vogeler 5-1984, 9-1984, 1985, 1986 and 1987). They were all convinced and surprised that the speakers had touched on sensitive and important issues with considerable frankness. They also made specific suggestions and corrections that I followed wherever possible, and they pointed out some omissions. The members of my thesis committee at the Massachusetts Institute of Technology also read and remarked on the series of drafts and reports that preceded this dissertation, and their comments led to changes in the text.

Still, retrospective reconstructions can easily include some error and bias, so it is time to address the question about the extent to which the reader and I can rely on the things people said in the interviews and the question of how I got from the interview data to my analysis and reconstruction of the process and outcomes of organizational change in the
Venezuelan petroleum industry after nationalization. This is the question of epistemology, of what is acceptable evidence and of the critical gap between the evidence and the interpretation.

Annex II-3 is a detailed statement of possible sources of errors and bias owing to my own predispositions and those of the people who were interviewed, as well as the safeguards that, I believe, make it acceptable to regard most of the interview data as valuable evidence on which to base the analysis and interpretation.

However, I saw, and two of the industry readers concurred, that two important topics were missing from the interviews: corruption and internal politics. A company director referred to corruption in a fairly general way and emphasized its absence in the Venezuelan oil industry, but no one referred to the case that was daily in the press at the time of the interviews: a group of employees from Maraven was accused by Maraven itself and by PDVSA of selling information to clients. All the suspects were turned over to the national authorities. (The incident was made into a movie in 1987). The readers believed it was an isolated case and agreed with the company director that the Venezuelan petroleum industry is quite free of systematic corruption, and outside observers also said this. Still, this is an important omission.
The failure to mention internal politics directly seems to me more serious. Surely no large, old organization is without its politics, and outside speakers mentioned and even identified members of internal power groups. One of the industry "readers" went so far as to agree that such groups always exist, but he thought that they did not get in the way of the merit system of promotion or the efficient production and distribution of oil. To me, however, the lack of reference to internal politics--except for one reference to a power struggle among the affiliates for long-term viability and another to interaffiliate committees as power-sharing mechanisms--is an important omission, especially in an industry which constantly points its organizational finger at the hopelessly political state and the rest of Venezuela. I believe that the industry may be relatively free of traditional party politics, at any rate at lower levels, but I doubt seriously that internal politics are absent or entirely unrelated to issues of merit and perhaps of efficiency. Indeed, the very absence of reference to such issues makes me think they must be very important indeed. But I do not have sufficient evidence to support or explore this carefully.
The notion that an organization can adapt or learn is a metaphor, since it is the individuals within an organization who adapt or learn (Argyris and Schon 1978), so there is the problem of distinguishing individual from organizational ideas or actions, of determining whether each director and manager interviewed actually spoke and acted for the organization.

... it is unclear what we mean when we treat the term "organization" as the subject of the sentence which has "learning" as its predicate. What is the relationship between "organizational learning" and the learning of the individuals who are members of the organization?" (Schon 1982:2)

The same question applies to organizational adaptation. There are cases, as Schon says, when individuals have learned but the organization has not, and this becomes evident when individuals leave and their knowledge about the organization does not stay in the organization. Similarly, there may be cases where the individual or even a few individuals adapt or respond to changes in the environment, but where the organization does not. One oil industry executive gave a nice example. In 1984, his subsidiary needed expert advice to solve a problem of industrial security. He at once called his former boss in the transnational company where he had worked for years. The best people were sent to Venezuela within the week and solved the problem. But he worried that both his call and the answer were individual, not
organizational, transactions. No one else in PDVSA knew this man as he did and no one else could command so quick a response. If this is a typical example, it is crucial, especially in the Venezuelan petroleum industry of the mid-1980s, where so many experienced executives were close to retirement and where, as it will be seen in Chapter VIII, there was a remarkable shortage of middle management, as a result of the years before nationalization when the transnational concessionaires reduced their personnel. This suggests that by the 1990s the organization could undergo important changes in behavior simply because of attrition—unless there is organizational inquiry into the phenomenon.

There are cases, in contrast, where an organization is more than the sum of the individuals in it. Processes, customs, systems can provide leverage to the collectivity.

*To sum up, an organization ... is a cooperative system which acts as individual members, functioning as agents of the collectivity, carry out their components of the larger task system. The collective, like the individual craftsman, may be said to have a theory of action which describes the norms, strategies and assumptions governing the regular patterns of behavior relevant to the task. ... in the case of the collective, intelligent action depends upon a continuing process of organizing, that is, of mutual adjustment of individual behavior, (communication, cooperation and control) one to another (Schon 1982:3).*
A conceptual criterion to determine if individuals are acting as part of the organization is whether or not the action is concerted, continuous and convergent. If the behavior of the individuals in the organization during the period under analysis was characterized by continuity of attention, concerted action and convergent effort, then we can say that we are looking at organizational behavior. If not, or not altogether, then the behavior must be observed more closely and may be—as in the above example—individual rather than organizational; if individual behavior is fairly common, it probably reflects an organizational problem.

The problem of the relation between individuals and the organization is further complicated in this case by the structure of the industry. The holding company, the subsidiaries, and at times even the Ministry of Energy and Mines all bear some claim to representing the "industry", whose change or adaptation, and perhaps learning, are the focus of this research. The boundaries of the organization, which have been drawn around PDVSA and its subsidiaries for the purposes of this study, may in fact be found to vary with the kind of issue at stake. For example, responses to uncertainty of the international petroleum market in the middle range may involve interactions of all the above units, including the Ministry, whereas the effort to integrate executive career development might involve only the holding company.
These statements show how hard it is to pinpoint the subject, "the industry": "Because of a shortage of funds in the national treasury, the industry needed to rank projects and control costs." "The industry asked for advice from the multinationals and consulting firms." "The industry reflected on the coming nationalization."

In statements like these, when is it legitimate to speak of "the industry" instead of "González", or "PDVSA", or "Agropet", or "Lagoven's planning group"? And how can it be decided if there has been continuous, concerted and convergent behavior? These questions go to the heart of what I mean by "organizational" as opposed to personal, or small group, adaptation or learning. The relation between the individual and the organization becomes even more complex when we focus on the different levels of organizational change, adaptation and learning as they are defined in the next section of this chapter.

There are several ways to think about the relation between individuals and the organization in the case of the Venezuelan petroleum industry. Each way is related to a distinct approach to the organization and each one leads to a somewhat different operational definition of what is "organizational" behavior. (I am indebted to Professor Donald Schon, whose letter in response to my report of 5-1984 included the following ideas.)
The holding company, with its relations to the Energy Ministry and the subsidiaries, can be understood as a formal organizational structure with established channels, units and procedures for inquiring, deciding and acting. So something can be said to happen, or a response made, or an inquiry undertaken, only when there is evidence of a formal action, decision or inquiry—for example, when a Board of Directors meets and deliberates.

This way of thinking about the Venezuelan oil industry as an organization would ignore the evidence that many informal channels, units and procedures in fact take action on behalf of the organization. The interaffiliate committees, discussed in Chapter VIII, are an outstanding example. It is also practically impossible to document formal decisions in single, one- or two-hour interviews with many industry executives, although partial evidence of how the formal and informal channels relate to one another is presented in the findings.

Another way to think of the organization is that, within the array of entities called "the industry"--PDVSA and its affiliates--there are certain organizational units that undertake action, decide or initiate inquiry. Some of these are formally established and others are not, but in any case, these units are the only entities capable of deliberate action. The "actions of the industry", in this view, are actually only interactions—or resultants of interactions--of these smaller units. So, for example, there might be a
policy-in-use concerning response to the uncertainties of the international oil market that is really the outcome of the interactions of several of these smaller units. The policy-in-use may not be any one unit’s policy, but simply a consequence of the units’ interaction. In the end, the units might turn out to be individuals.

This is a real possibility here. For instance, “the industry” does not sell oil; units in the operators do it and (maybe) individuals in those units. The units are in constant communication with one another and sales policy-in-use might be found to result largely from these units’ interactions (carving up the market or not, for instance, or searching for new clients in this hemisphere).

The organization can alternatively be thought of as “culture”—that is, social constructions involving habits of thought, practices, norms, beliefs, values, understandings, appreciations; this notion is defined above. In this view, when organizational change occurs, it is the “culture” that changes; when organizational adaptation or learning happens, it is the “culture” that adapts or learns. Now, strictly speaking, a culture cannot do anything; rather, things happen in it, or it evolves. In this view, organizational adaptation and learning would be a euphemism for cultural happening which lies in no individual’s or unit’s control.

I said above that when I chose to approach the Venezuelan petroleum industry as organization-as-agent, I expected that
the notion of organization-as-culture might nonetheless explain some of the changes or failures to change. In Corpoven and PDVSA, where there were oilmen from several former concessionaires, there were examples of a mixture of cultures and a breakdown of old cultures simply by daily contact and resolution of daily problems together. Many of these changes were so subtle and evolutionary that one old-timer found it hard to monitor them; when a former transnational employee visited the nationalized industry he observed changes that the old-timer and others had not detected. (It was, he added, not unlike trying to monitor his own aging process by looking daily in the mirror.)

"The industry" may be thought of in still another way. It has an organizational structure, both formal and informal. There are roles, in certain relations to one another, and there are rules, maps, programs, systems, processes, and so on. Individuals occupy roles and are subject to rules, but individuals are also capable of responding to the environment, of deciding and acting on organizational problems and of reflecting on and inquiring into the organizational situation in which they find themselves, perhaps even on the "culture" to which they belong. Individuals in their roles, acting at least in part as agents of one organizational unit or another, may respond to the environment, may undertake inquiry or reflection, may try to influence others and may succeed. At any given time, on any given issue, there may be more than one such process of
reflection, inquiry, action, or decision going on in an organization. In this view, "organizational adaptation" is shorthand for the individually generated responses of the organization to the environment, and "organizational learning" is shorthand for the individually generated inquiry that is about organizational issues and that has organizational consequences. In either case, two or more currents of adaptation or inquiry may interact, and the ensuing organizational change may be an outcome of their interaction. For example, a combination of "top down" initiatives to coordinate sales from PDVSA may interact with "bottom up" behavior of the sales units in the operators, as they communicate daily with one another, to produce a kind of loose coordination among the operators and PDVSA, whereby PDVSA steps in only when the general interest requires it.

This view is congruent with the approach to the organization as an agent, and it is the way I have viewed the oil industry in this study.
The above discussion illustrates the intellectual problem raised by these different ways of thinking about the relations between individuals and organizations and organizational change in relation to this study. When I was interpreting the interview transcriptions, I thought that they would, as a whole, reflect how the organization had adapted to nationalization and other changes after 1976. I did not think of each speaker as representative of a larger group in a statistical sense—this was not a random sample—but I assumed that the experiences of each person told something about the whole organizational experience of change between 1976 and 1985, and permitted inferences about the larger organization, unless there were strong reasons to doubt it. Many of the executives had been in the industry and nowhere else for over twenty years; they might be speaking for only a part of the organization, but they were unlikely to be speaking for any other organization. (In the public administration, in contrast, just after a change of party, a newly appointed member of an organization might be speaking for the agency, or for his political party.)

I believed I could reconstruct from the interview data more than an orderly accumulation of scattered accounts of nationalization; I hoped to discern besides a structural pattern of organizational behavior, wherein each fragment would add something to a vision of a whole, following the conceptualization in the next section of this chapter. Nevertheless, since I met with the industry executives one by
one, except at the two training meetings, and since I saw
most of them just once, I could not always know whether
behavior described had been convergent, concerted and
continuous. I have therefore tried to show the evidence and
my inferences as clearly as possible throughout the text.

In the interviews, there are many examples of the use of "we"—
one test of whether a collectivity of individuals is an
organization (Argyris and Schon 1978)—and the examples
illustrate the various meanings of the organization as
different speakers referred to it at different times. For
instance, a company director said, "Listen, we never wanted
four companies. We wanted three." The context of this
quotation implies that this man meant, "We, in this
subsidiary". Another company director, contrasting the late
1970s and early 1980s, said, "We were facing an industry in
expansion... Now we are moving into a different phase". This
sounded like, "We, the leaders of the petroleum industry".

In another interview, a PDVSA director said, "So we spent the
first year on this, centralizing finance, which permitted
PDVSA to have great power". The ostensible meaning was, "We,
the founders of PDVSA", or even, "We, the first people in
charge of finance in PDVSA"; it may even have been, "I". And
when a company director said, "We thought they worked like
us," he meant, "We, the oilmen" and "They, Cordiplán and the
government planners".

In all of these cases, I argue that the speakers were
speaking for what I have called "the industry" or "the
organization", in the last sense described above, whereby there are many currents of action and inquiry, generated by individuals acting in a variety of organizational roles.

At the same time, I saw each individual interview, each piece of the whole, as an integrated whole of itself. Behind each interview, I supposed, there was an individual’s view of the world and of the events, and I tried to see what it was. As I went through the interview data, this seemed like a good way to discover new meanings from the material.

In the findings, which comprise Chapters V through VIII, I have at times used the artifice of quoting first one speaker and then another, as if they were holding a conversation which in fact they did not hold and probably never would hold. Yet by imagining such conversations, I could assess how hard it was for some individuals to understand each other, or how much others had to say to one another, and I could infer what the differences might mean for the future of the petroleum industry as an organization.

One part of my job as author of the study was to understand each speaker’s point of view, but another was to interpret what I heard from my own point of view. It follows that another researcher, with other experiences and interests and another approach to the world of organizations, would build a different picture from the same data. In fact, another researcher would not have exactly the same data, since the art of carrying out an open interview, as I have shown in the
section on sources of error and bias (Annex II–3), is a highly personal one that depends on the interviewer, the person who is interviewed, and the dynamics of the interaction between them during the hour or two they spend together. Therefore, I have illustrated as carefully as possible the data and my interpretation of them and, in the manner of an anthropologist, I have inferred from the data certain generalizations about the industry.

Among themselves, the industry executives surely exchange ideas and impressions of the kinds presented here, and of other kinds—more detailed and technical, more private, more varied and perhaps less conceptual, as they refer to daily and hourly events and as they assume a common background and knowledge about the industry itself and a common commitment to it.

The interviews show that many oil employees have a clear and subtle vision of the industry; after years in it, they have a unique view. The interview transcriptions are so rich, both in their content and in the ways in which the speakers expressed themselves, that it was hard work to do them justice. They often raise as many questions as they answer. The set of interviews is a good example of a whole that is greater than the sum of the parts, because patterns and interrelations began to appear as the transcriptions were analyzed.
Organizational change

In order to think about organizational change in the Venezuelan petroleum industry after nationalization, I started with the simple conceptual model represented in Figure 1:

---

**FIGURE 1**

A CONCEPTUAL MODEL OF ORGANIZATIONAL ADAPTATION TO CHANGES IN THE ENVIRONMENT

---

\[ \Delta E \rightarrow \Delta B \quad \text{in response to} \quad \Delta B \rightarrow \Delta E \quad \text{in pursuit of} \quad \Phi \]

---

B: Behavior
E: Environment
Φ: Objectives
Δ: Change

That is, organizations seek to adapt their behavior in response to changes in their environments, as they pursue more or less constant objectives. The arrows are intended to represent the idea that the organization’s representatives look toward the objectives and toward the environment as the bases for acting as agents of the organization.
The notion of organizational behavior (B) is often used, but it is hard to specify what is included in the concept of "behavior". In this study, behavior includes a broad spectrum of concepts: actions, action strategies, decisions, practices and ways of thinking, and common perceptions. Here are some examples:

<table>
<thead>
<tr>
<th>Terms</th>
<th>Examples</th>
</tr>
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<tbody>
<tr>
<td>actions</td>
<td>Build a new refinery.</td>
</tr>
<tr>
<td>action strategies</td>
<td>Assure reliability of supply to preserve markets.</td>
</tr>
<tr>
<td>decisions</td>
<td>We will now centralize finance in PDVSA.</td>
</tr>
<tr>
<td>practices</td>
<td>Hire only recent graduates.</td>
</tr>
<tr>
<td>ways of thinking</td>
<td>We treasure seniority.</td>
</tr>
<tr>
<td>perceptions</td>
<td>Other sectors of Venezuelan life admire us and see in us a model organization.</td>
</tr>
</tbody>
</table>

Four levels of organizational change, or change in organizational behavior (ΔB), are distinguished. Level I is relatively stable behavior at a given moment or in a given environmental situation. It is the reference point for observing change. Selling to a given set of clients, under conditions of relative stability of demand, is an example.

Level II includes changes in the organization's behavior in response to perceived changes in the environment. These are called adaptive responses. When organizations change by responding to perceived changes in their environments, as they pursue their objectives, it may be said that they adapt,
or seek to adapt, their behavior in response to their changing environments. This is called organizational adaptation, or adaptive change. An example of an adaptive response cited in this study is opening the portfolio to include more clients and so reduce vulnerability in what is perceived to be a more unpredictable market.

Adaptive responses are thereby distinguished from non-adaptive change, change that "just happens". An important non-adaptive change in the Venezuelan petroleum industry after nationalization was the aging and retirement of the senior managers; aging of the oil fields was another. Non-adaptive change does not result from an effort to respond to the changing environment, but it may induce adaptive responses.

Adaptive responses may be discovered to be maladaptive in fact. The organization may take new actions in pursuit of its objectives, in an effort to respond to changes in the environment, but the actions may fail to produce the desired results and may even produce unwanted results, or errors.

Level III is an analytical category that refers to observable patterns in the adaptive responses at Level II. For example, changes in marketing strategy may be found to start from the Board (top down), or they may as a rule start with the traders themselves (bottom up). Other examples of patterns of adaptive change include minimal change (versus revamping), or incremental change (small steps), or superficial change
(tokenism), or revolutionary change (everything changes at once).

Level IV is organizational learning. By organizational learning, in this study, I mean a desirable kind of organizational change that may be seen as a special kind of organizational adaptation, as the organization reflects on or inquires into the adaptive process and the patterns of adaptation, with an eye toward judging the change processes and making them more effective. I wanted to see if the Venezuelan petroleum industry did learn and if it faced special difficulties, what Argyris and Schon (1978) call inhibitory loops, in inquiring into its own change processes during the years after nationalization.

The ideas of organizational adaptation and learning imply change processes, change that occurs over time, so an interpretation of the present (Levels II, III and IV) makes sense in contrast to the past (Level I). I expected to observe (retrospectively) organizational adaptation, and perhaps learning, in the Venezuelan petroleum industry in response to the event of nationalization in 1976, so the conceptual picture had a "before" and an "after".
Organizational purposes, goals or missions are other words for objectives (0). Profitability is a common organizational objective or purpose. Organizations may have multiple objectives and even private businesses may pursue a number of different goals and move incrementally to achieve them (March and Simon 1959). State-owned enterprises nearly always operate according to multiple objectives of a special kind: some of them originate outside the firm, in the state, and they may be competitive with one another, or even incompatible, yet explicit priorities among them are seldom specified.

The Venezuelan petroleum industry is above all a business, an organization that competes in the market and whose central purpose is profit. So I expected it to behave in ways other businesses do, in general, to seek to maximize profit by positioning itself effectively in the international oil market and by allocating and using its resources efficiently. I expected profit to be the major industry objective both before and after nationalization.

In fact, the nationalized oil industry was assigned other objectives, besides profit. It should provide foreign exchange for development (this was really an old objective). It should supply the domestic market for hydrocarbons (not new). And it should do two new things: contribute to regional development near industry installations and purchase inputs from other sectors of the Venezuelan economy, or "buy Venezuelan".
I expected to find that these additional objectives were much lower in priority to the making of profit, but that they would in some measure compete with profit-making and with one another, and that they would—in particular the latter two—generate patterns of behavior somewhat different from before nationalization.

I thought I might discover implicit objectives or, in Arygris and Schon's terminology, objectives-in-use, both before and after nationalization.

Lawrence and Lorsch (1975), March and Simon (1958) and Aldrich (1979) are among the authors who point to the environment (E) as a determinant of organizational behavior. The idea that organizations function in environments comes from the study of natural organisms, whose respective environments may be defined as "those variables whose changes affect the organism, and those variables which are changed by the organism's behavior" (Ashby 1966:36). It follows from this idea that the environment is defined in a functional sense and that the organism and its environment affect each other and so form a system with feedback. The notion also implies that "the dividing line between 'organism' and 'environment' becomes partly conceptual, and to that extent arbitrary" (Ashby 1966:40). These concepts have been applied to the present study of the Venezuelan petroleum industry as an organization, in particular in the definition of the industry as PDVSA and its subsidiaries.
Part of an organization's environment may be made up of other organizations, and organizations can be said to interact with each other. Vernon, cited earlier, says that when a state-owned enterprise interacts with the government, it is usually the case of a large firm interacting with a large bureaucracy, but Warren speaks of the interorganizational field and finds that "the interaction between two organizations is affected, in part at least, by the nature of the organizational pattern or network within which they find themselves" (1967:397). This idea seemed especially appropriate as a way to conceptualize the Venezuelan state.

Since the study at first focused on the effects upon organizational behavior of one crucial change in the industry's environment, the fact of nationalization, the Venezuelan state—not only as concession-granter, controller and taxing agent, as before, but also as owner, as it replaced the transnational holding companies—is an important element of the environment. Nationalization meant that the industry would become more sensitive to many changes in the national political and economic situation, which would make themselves felt largely through the state but also through public opinion, expressed above all in the media.

The business environment—the international oil market and OPEC—had changed radically in the years following nationalization of the Venezuelan petroleum industry. There was a restructuring of producers, with a greater role for
state-owned oil industries; prices and demand increased
during the optimistic 1970s, and there followed growing
uncertainty and production quotas in the 1980s. These
changes, which are discussed in more detail in Chapter IV,
induced responses in the industry that could not be
attributed to nationalization, so the international market
was identified as a separate source of change.

The first interviews with industry directors and managers
made it clear that the new intracorporate environment must
be considered as a separate source of change in
organizational behavior after nationalization. Ashby refers
to the idea that one part of an organism can be regarded as
the environment of another:

... if we view the system functionally, ignoring purely
anatomical facts as irrelevant, the division of the system
into 'organism' and 'environment' becomes vague. ... The
chisel in the sculptor's hand can be regarded either as a part
of the complex biophysical mechanism that is shaping the
marble, or it can be regarded as a part of the material which
the system is attempting to control. The bones in a
sculptor's arm can similarly be regarded either as a part of
the organism or as a part of the 'environment' of the nervous
system. Variables within the body may justifiably be
regarded as the 'environment' of some other part. ...because
we shall always treat the system as a whole, ... (1966:40-1).
The former concessionaires had been separated from their respective transnational holding companies and restructured into sister companies of one corporation, under an entirely new holding company owned by the Venezuelan state. Yet the industry continued to employ, in large measure, the same people who for years had worked for the concessionaires. This was possible because the great majority of industry personnel before nationalization were Venezuelans, and the nationalization law specified that their working conditions remain virtually unchanged. Thus the organizational behavior of the newly nationalized and restructured industry had deep roots in the past; indeed, this continuity was enhanced as an explicit part of the nationalization strategy. The intracorporate environment, with its elements of continuity and change, was called the third relevant environment.

Several authors refer to technological change in the environment as an important source of change in organizational behavior (Burns and Stalker 1961, Woodward 1980, Chandler 1981, Child 1972, Lawrence and Lorsch 1975). Yet in the present study questions of technology are not specified as key elements of the relevant environment. The main reason is that in the interviews almost no one referred to technology or technology transfer as a priority issue. This may have been in part because the industry executives who were interviewed were all directors and first line managers in Caracas, who may have been a step removed from technological problems. Yet it seems that if technology were
a pressing issue, either in the fields or in the refineries, it would have emerged in the interviews with top management. Technology problems are not necessarily more sensitive than market problems or than difficulties in integrating the various organizational cultures, and many people discussed these matters openly.

Another reason for not dealing with technology in this study was that Villalba (1985) analyzes in detail the patterns of technology transfer in the first five years after nationalization. The first technology agreements that were signed with the former concessionaires stimulated an indiscriminate use of foreign technology because payments depended on the production or refining level, not on the quantity of support received. Another difficulty was that, in the first years of nationalization, technology transfer among the new operating subsidiaries was explicitly forbidden: Maraven received assistance from Shell and Lagoven from Exxon, but certain technologies could not be shared among them. This created practical problems owing to the relative incompatibility of the technological solutions used by each subsidiary. In 1979, with the second round of renegotiations, the amount of payments was reduced to as much as half, it was based on the quantity of services received, and there were no more restrictions on technology transfer among the subsidiaries.
Yet not all of these improvements were put into effect. The subsidiaries continued to turn to their traditional sources of technology assistance, even when preferable sources were available. Technical or cost considerations were not the only criteria for technology choices. Other decisive factors included the time of employment of the manager who made the technology choice, his profession, the concessionaire he came from and the availability of technical aid within his own organization.

Villalba groups these factors into two sources, organizational culture and professional training. He concludes that the permanence of organizational culture in the Venezuelan petroleum industry after nationalization has had, from the point of view of the Venezuelan state, both positive and negative effects: positive in the use of modern management principles but negative in the selection of technological assistance most likely to reduce dependence on foreign sources of support, and at the lowest cost.

In accordance with the above discussion, the conceptual model of organizational adaptation presented in Figure 1 was specified and adjusted as follows in Figure 2:
FIGURE 2

A CONCEPTUAL MODEL OF ORGANIZATIONAL ADAPTATION
OF THE VENEZUELAN PETROLEUM INDUSTRY TO THREE ENVIRONMENTS,
1976-1985

Before nationalization
(Concessionaire regime)

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<tbody>
<tr>
<td>E1</td>
<td>E2</td>
<td>E3</td>
<td>0</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After nationalization
(State-owned-enterprise)

|       |      |      | 0    |      |
|  ΔE1  | ΔE2 | ΔE3 |      |      |
|       |      |      |      |      |
| ΔB    |      |      |      |      |

B: Behavior
E: Environments (1: business, 2: national, 3: intracorporate)
0: Objectives
Δ: Change
≈: Slight change

This is the conceptual model that guided the research. To say it in words, I expected to find that the Venezuelan petroleum industry before nationalization behaved in fairly stable ways, as it pursued more or less constant objectives in a relatively stable environment, or set of three environments. I expected that after the industry was nationalized in 1976, and at least until the moment of the interviews in 1984 and 1985, it was adapting its behavior to changes in all three environments as it pursued slightly changed and more complex objectives. I expected that some of the responses would lead the organization to behave like the state-owned enterprises that Vernon, Aharoni and others
describe, but since the industry had a history of private-
ness, since it was international and was so vital to the
national economy, and since it was also responding to changes
in the business and intracorporate environments, I thought it
might prove to be a special kind of state-owned enterprise.

Figure 3 conceptualizes the relations between the levels of
change and the environments, and provides the basis for
analyzing patterns of organizational change in response to
each environment. Each environment changed in different ways
between 1976 and 1985 (Chapter IV), so seemed probable that
the organizational change process would be found to have
varied from environment to environment.

That is, not only did I expect to find different Level II
responses, or adaptive responses, to each environment; I also
expected to find different patterns of adaptive responses, or
Level III changes, to each environment. I hoped to discern
instances of organizational learning, Level IV, as the
organization inquired into and reflected on the changes at
Levels II and III.

Selected examples of responses from the interview data
illustrate the conceptualization in Figure 3.
△ E I: The international business environment (market and OPEC)

KINDS OF BEHAVIOR

LEVELS OF CHANGE

1. Responses OF the organization to pursue its objectives
2. Responses IN the organization to support the first kind of responses

I.

FAIRLY STABLE BEHAVIOR BEFORE 1976 (B)

E.g., supply units assure a reliable supply of products and crudes to the Eastern seaboard of North America

II.

ORGANIZATIONAL ADAPTATION: CHANGES IN BEHAVIOR FROM 1976 TO 1985 (∆B) IN RESPONSE TO CHANGES IN ENVIRONMENTS (∆E) (includes maladaptation)

E.g., diversify clients gradually to lower their vulnerability

E.g., operator trading units get data on potential clients

III.

PATTERNS IN THE ADAPTATION PROCESS FROM 1976 TO 1985

E.g., continue to concentrate on this hemisphere

E.g., PDVSA gives operators considerable autonomy; steps in only for general interest

IV.

ORGANIZATIONAL LEARNING: INQUIRY OR REFLECTION ON PATTERNS OF ADAPTATION FROM 1976 TO 1985

--

E.g., PDVSA coordination of trading/supply wonders if it could insist that operators divide the market
FIGURE 3

CONCEPTUAL FRAMEWORK FOR ANALYZING PATTERNS OF ORGANIZATIONAL CHANGE IN THE VENEZUELAN PETROLEUM INDUSTRY IN RESPONSE TO CHANGES IN THE ENVIRONMENT 1976-1985

SOURCES OF CHANGE

△ E 2: Nationalization and the Venezuelan political and economic environment

_________________________________________________________

KINDS OF BEHAVIOR

1. Responses OF the organization to pursue its objectives 2. Responses IN the organization to support the first kind of responses

_________________________________________________________

E.g., keep low profile in nation  E.g., build low profile into organizational behavior (all speeches made outside industry must be approved by supervisor and read verbatim)

E.g., continue low profile deliberately  E.g., socialize new personnel to value of low profile by, for instance, discouraging new managers from speaking outside industry

E.g., operators maintain low profile and PDVSA reacts to some criticism, as in the case of financial reporting system  E.g., subsidiary boards recommend low profile to respective staff while PDVSA staff at times speak out

E.g., PDVSA board commissions study to discover how citizens perceive industry  E.g., PDVSA board reflects on value of low profile, given negative press, and reviews study results

_________________________________________________________
(ΔE)

ΔE 3: The intracorporate environment

------------------------------------------------

KINDS OF BEHAVIOR

1. Responses OF the organization to pursue its objectives

   E.g., each concessionaire competes with others for markets and for best deal with the state.

2. Responses IN the organization to support the first kind of responses

   E.g., each concessionaire hires college graduates and plans careers in company, to build company loyalty and foment secrecy.

   E.g., affiliates set up interaffiliate supply committee.

   E.g., leave initiative for trading and supply coordination in operators unless PDVSA steps in for the general interest.

   --

   E.g., holding board reflects on effectiveness of information and product and crude exchange and wonders if it should participate in setting up of future committees

------------------------------------------------

69b
Once the responses were grouped by environment and level of change, I would analyze one by one the industry's responses to nationalization or the fact of being a state-owned enterprise (in a specific political and economic environment), to changes in the world oil market and to the changing intracorporate environment (with its elements of continuity from the past).

The distinction between two kinds of behavior (or responses) to each respective environment—responses of the organization to the environment, as it pursued its objectives, and responses IN the organization, to support the former responses—seemed to grow out of the data themselves, as I think the examples will show.

The three analyses of organizational responses to each environment would make it possible to trace three simultaneous change processes and to distinguish among patterns of adaptive change in response to each environment—to see whether the organization adapted differently to each environment. Some patterns had been suggested in the early interviews; for example, responses to the new intracorporate structure were often initiated "at the top", in PDVSA, while responses to the market were initiated "at the bottom", in the affiliates.

The pattern of responses to nationalization and the national environment would reflect the transition from the status of private enterprise to state-owned enterprise. By examining
the changing relations between the Venezuelan state and the nationalized oil industry, evidenced in the adaptive responses after 1976, the analysis would show how the issue of control and autonomy, and the related issues of multiple objectives and industry accountability to many diffuse decision centers in the state, developed between 1976 and 1985.

Level IV change, organizational learning about the industry's own change processes, might vary across the environments. There might, for instance, be evidence of more organizational inquiry into the way the organization was responding to the market than to the way it was responding to the state or to the new structure.

The above conceptualization of the research problem was the starting point for analyzing and interpreting the interview findings. But first, Chapter III describes the environments in the relatively stable years before the early 1970s, and Chapter IV describes the outstanding changes in each environment during the more turbulent years between the mid-1970s and 1985.
Part 2. BACKGROUND ON THE ENVIRONMENTS

III. BEFORE 1976: FROM RELATIVE STABILITY TO THE BEGINNINGS OF CHANGE

The period called "before nationalization" from roughly the 1950s until the mid-1970s, was a time of relative stability and the beginnings of change in the world oil market, the national environment and the internal environment of the Venezuelan petroleum industry.

The world oil market

The behavior of the Venezuelan petroleum industry, as a large, international oil business, is shaped by the peculiar nature of the world oil market. It follows that the Venezuelan state, as the agent of the industry's host country, must also adapt its behavior in some measure to that market. Venezuela has been a major oil producer, a leader among those producer countries who cannot consume much of their oil, and a founding member of OPEC. Oil is crucial to the nation's economy and political economy. An overview of the economics of oil is therefore pertinent to this study. The overview is based on Vernon (1983).

Without special arrangements, the world oil market would be unstable, owing to the peculiar economic characteristics of oil production, distribution and consumption. In the short run, the demand for oil is inelastic with respect to the price. The supply behavior depends on the storage or shut-in capacity. If it is large, then the supply is relatively
elastic with respect to the price and small price increases can bring out lots of oil; if shut-in capacity is small, then supply is quite inelastic with respect to price. And the above-ground storage costs of oil are high and the lags are long for discovering new reservoirs and getting oil out.

The barriers to entry in the oil business are very high: exploration, production, refining, transportation and storage, and distribution are all costly and technologically complex, which makes the market even more rigid. Furthermore, the average costs of producing oil vary greatly from group to group of producers, owing to the God-given distribution of the reserves of the world, so some producers can achieve very high profit margins. And for each producer, because of the high fixed costs, the marginal cost of the last barrel produced is much lower than the average cost. So the temptation to break the market is enormous and price wars are a real danger for all producers.

The above characteristics make the international oil market very unstable in the short run, not as a matter of evil intentions but as an economic fact of life. Since the market is inherently unstable, oil producers have tried from the first to create artificial stability.

Between 1870 and 1900 the Americans were in charge of eighty percent of the markets, Standard Oil was practically a monopoly, and the Americans had become the leaders in technology for transporting and refining this volatile
product. But between 1900 and World War I the British and Dutch, who had been in the oil business on a smaller scale, began to challenge the Americans. So this was an unstable time in the international oil market, and the instability grew when the United States government acted in 1911 to break up the Standard Oil trust. During the 1920s there was no structure or mechanism to make the international petroleum market more stable, and it went from great shortage in 1920, when there was a fear that the world would soon run out of oil, to a glut in 1926 that led to wholesale, unlimited and destructive competition.

In 1928, after several price wars, the presidents of Exxon, Shell and British Petroleum met at Achnacarry Castle, Scotland, and developed the principles for behavior that dominated the world oil market until 1960. The other major companies followed suit.

The first principle was that the existing shares of the market in the world would be left "as is". This lasted until the early 1950s. According to the "Red Line Agreement", no company would develop reserves in the Ottoman Empire (Turkey, Syria, Iraq, Jordan, Saudi Arabia and Bahrain (Sampson 1981)), which held the major sources of cheap oil, except in partnership with the others. So the companies had a common interest, and could not knife each other in the back. Certain joint ventures could be established in other markets. At the same time, the companies were creating vertically
integrated structures with their own upstream sources of crude and downstream distribution channels. The major companies had a common cost structure and could work anywhere in the world.

There is a generalized belief in the oil world—it was echoed in some of the interviews of the present study—that the transnational companies tried to keep crude prices low so as to pay lower taxes in the countries where they produced. But Vernon says that in fact the vertically integrated major oil companies tried as a rule to take all of their profit at the crude level, simply because they assumed that the entry barriers were highest at the crude level, so even if crude prices were high, potential competitors would find it hard to get in. It was easier to get into the oil business downstream, so refineries were kept at the break-even point, or even at a loss, so no one else could compete.

The American oil production system was the hardest to control. After the Standard Oil trust was broken, many producers entered the oil business in the United States, and price competition often broke out in New York. Therefore the oil companies developed an elaborate basing point system of proration whose goal was to assure a uniform landed (or c.i.f., cost, insurance and freight) price in New York. Oil prices everywhere were based on the price in the Gulf of Mexico (cited in Platt’s Oilgram) plus standard freight charges for shipping the oil from the Gulf to New York. As more cheap Venezuelan oil came onstream in the late 1920s
and early 1930s, the price in Venezuela (f.o.b., or free on board) was set at the New York price (based on Platt) minus transportation costs between New York and Venezuela. This was a quasi-monopolistic or fictional price, at that time artificially high.

This system worked for years, by semi-tacit agreements among the major companies. But by the late 1930s cheap Persian oil was coming onstream and independent producers, with unpredictable behavior, were entering the business. Still, during World War II the British had to pay for Persian oil in Persia as if it were Venezuelan oil that had been freighted to Persia and even after the war the Americans, who were supporting the Marshall Plan, were buying large amounts of European oil at the artificially high price. This introduced instability into the market, and the oil companies realized they would have to increase production in the Persian Gulf, lower the price there and design a new international pricing mechanism.

They imagined a north-south line through Greece which was a watershed, the point where oil prices were highest in the world. To the east of this line, the price was that of the Persian Gulf oil plus freight to Greece; to the west, the price was that of Venezuelan oil (linked to the artificial New York price) plus freight to Greece. So all prices were still linked to Platt's Oilgram, which was creating an artificial scarcity in New York. This new arrangement
altered the relationships between the Persian Gulf, the Gulf of Mexico and Venezuela, but it did avoid price competition and so prolonged the stability of the world system.

But by the 1940s the major companies were ready to develop the Persian Gulf. If they left the price high, it would stimulate too much development there, owing to the very low production costs. The north-south watershed line was moved west to Italy. By 1949 the companies began to service Britain from the Persian Gulf, and the line was moved on to Britain. In 1960, oil from the Persian Gulf reached New York and this was the end of the old system.

The appearance of Middle East oil in the United States threatened United States producers, and the policy response was to isolate the market with import restrictions. The control of the international oil companies was thereby weakened. Vernon thinks that it was not OPEC but the appearance of cheap Middle East oil and of independent, unpredictable producers which in time broke down the pricing system that had assured stability of the world oil market for nearly thirty years. The small independent companies were not vertically integrated downstream, and they often discovered large amounts of oil that they could not distribute through their own systems. These discoveries and the appearance of four or five new sellers created more instability and led to the shocks in Europe of the 1950s and 1960s; all of this exercised downward pressure on the crude oil price.
Producer countries were taking a bigger share of the profits. In 1948 the Venezuelan government had established the first fifty-fifty principle for the companies; however, Venezuela was not ready to nationalize its oil—it may have learned from the Mexican nationalization in 1938 that without guaranteed distribution channels nationalization would have been a great risk—but it did keep asking for higher taxes, and by the 1960s it was receiving about seventy-five percent of the take. Other producer countries followed suit.

At the same time, two of the major barriers to entry began to break down: technology was becoming an international commodity and capital markets were opening up. Marketing was still a barrier to entry in the world oil markets, as the multinationals still owned the distribution facilities, but without the crude, their bargaining power declined.

Then came 1973-1974: first the Egyptian-Israeli war, then the Syrian pipeline broke and Libya lowered production. The Shah of Iran saw that the West was so desperate for oil that some people were paying $18 or $20 a barrel. The Shah raised the posted price to $9 or $10 a barrel. So now the producing countries had the technology, could get the capital and the importers were frantic for oil—and so, the final barrier to entry was lowered.
And many producing countries began to nationalize their oil industries. Table I shows the changing structure of the international petroleum market after 1950, as the seven major companies' control declined and as producing countries came to own the majority of crude oil production (except crude oil produced in the United States and the communist nations.)

<table>
<thead>
<tr>
<th>TABLE I</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRUDE OIL PRODUCTION BY OWNERSHIP, 1950-1979, IN PERCENT (a)</td>
</tr>
<tr>
<td>Seven majors</td>
</tr>
<tr>
<td>Other international oil companies</td>
</tr>
<tr>
<td>Producing country oil companies</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(a) Excluding crude oil produced in the United States and the communist countries.

(b) Negligible.


Vernon sees slight chances that the producer nation state-owned enterprises can reproduce the stability that the seven majors achieved between 1928 and 1960. Agreement is easier within an old oligopoly of seven private companies than among twenty state-owned companies in producer countries, where
each state has different goals for its oil enterprise, besides profit. Besides, each state-owned enterprise is limited to the reserves in its own territory, whereas the multinationals could move around the world.

Another difficulty is that state-owned enterprises, especially in democratic nations, find it hard to enter into joint ventures with other enterprises so as to acquire their own off-shore, non-national distribution and refining capacity. The Shah’s National Iranian Company had holdings in ten countries and Kuwait acquired part of Gulf Europe and Sante Fe, in the United States, but these were both, in essence, non-democratic governments. In democratic countries moving downstream simply looks like exporting capital, and it makes too good an issue for the political opposition.

State-owned enterprises find it hard to fire anybody, so they have virtually fixed inputs, which leads to an even lower ratio between marginal and average costs than in private companies and a greater temptation to lower the price.

Finally, state-owned enterprises cannot negotiate a price scheme of common landed or c.i.f. prices; state-owned enterprises need f.o.b. prices, prices on their own soil. So there is constant tension, if producer nations look for a common landed price; everyone is suspicious of the others.

As everyone works on his own, throughput planning of the products (well-head to distribution) tends to lose
efficiency. So when shut-in capacity is small and demand begins to grow, bottlenecks can be expected. All of this means continued instability. Under these assumptions, the realistic planner in the state-owned oil enterprise should ask himself how to deal with unstable prices, not as a disaster, but as a different way of approaching enterprise management (Vernon 1983).

Since 1914, Venezuelan oil has played an important role in world production. By 1928 Venezuela was the second largest oil exporter in the world. It lost this position in 1929, regained it in 1945 and held it until 1960. Thereafter Venezuela's oil declined in relative importance, as Middle East oil came onstream, but it was still a major world producer and a key supplier for the Western Hemisphere (Alcock 1986). Table II expresses Venezuela's changing role in the world oil market between 1857 and 1983.

| TABLE II |
| ACCUMULATED OIL PRODUCTION IN VENEZUELA AND IN THE WORLD 1857-1983 |
| (billions of barrels) |
| 1857-1900 | 1901-50 | 1951-73 | 1974-83 |
| World (includes Russia) | 1.7 | 64 | 234 | 208 |
| Venezuela | - | 6 | 25 | 8 |
| Venezuela/World | - | 9% | 11% | 4% |

Graph I shows that from before 1970 until 1979, production in the rest of OPEC and in the world was growing faster than in Venezuela. After 1979 OPEC’s total production dropped more sharply than that of the world and Venezuela.

GRAPH I

THE ROLE OF VENEZUelan OIL IN OPEC AND THE WORLD
(millions of barrels per day)
AND THE AVERAGE PRICE OF VENEZUELAN OIL
(dollars per barrel) (1)
1960-1982

100

30

20

10

3

2

1

1960s 1970s 1980s

.... Volume

..... Price


Venezuela was a leader among producer nations, not only in increasing its share of the "take" from the oil income and in its hydrocarbons legislation; refining capacity was also developed earlier in Venezuela than in most of the OPEC countries, and this was the result of government policy. In 1960 Venezuelan refineries processed nearly 900,000 barrels a day and by 1965 the volume refined surpassed a million barrels a day, about a third of total production in each year. Just before nationalization, in 1975, total production was 2.3 million barrels a day, and over a third was refined in Venezuela (Barberii 1985).

Over ninety percent of total production was exported, most of it to this hemisphere; Venezuela was the major supplier of oil to the allies during World War II and to the United States during the Korean War (Alcock 1986). Table III shows the structure of Venezuela's oil exports by geographical area in 1971 and 1975.

An industry veteran summed up the situation of Venezuelan oil in the 1980s: "Venezuela isn't the only princess available for marriage...You close the two million barrels of Venezuelan oil today and the world won't be affected one bit" (Interview 60.1/3). But for years this was not apparent to what can be called "public opinion" inside Venezuela. I will show in Chapter VI that this made it hard, but not impossible, for the oil industry to undertake a sales strategy of internationalization to assure export volumes in an increasingly uncertain market.
### TABLE III

**VENZUELA: DIRECT EXPORTS OF CRUDES AND PRODUCTS BY PART OF THE WORLD IN 1971 AND 1975**

*(percentages)*

<table>
<thead>
<tr>
<th>Part of the world</th>
<th>1971</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Western hemisphere</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>46.2</td>
<td>46.5</td>
</tr>
<tr>
<td>United States</td>
<td>11.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Greenland and Mexico</td>
<td>34.2</td>
<td>32.9</td>
</tr>
<tr>
<td>Central America</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td>South America</td>
<td>13.9</td>
<td>15.3</td>
</tr>
<tr>
<td><strong>Eastern hemisphere</strong></td>
<td>26.6</td>
<td>26.6</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European Economic Community</td>
<td>12.9</td>
<td>10.9</td>
</tr>
<tr>
<td>Others</td>
<td>10.1</td>
<td>8.7</td>
</tr>
<tr>
<td>Asia and the Far East</td>
<td>2.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Africa</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total, millions of barrels/day</strong></td>
<td>3.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Oil and oil policy in Venezuelan history

If Venezuelan oil was important in the world market before 1976, oil income was crucial to Venezuela’s development from one of the poorest countries of Latin America in 1920 to the richest by 1950. From the 1930s on, oil wealth provided astonishingly large fiscal revenues. The national budget grew quickly from one hundred to four hundred million bolívares. By the 1950s it reached three billion bolívares and by 1970, shortly before nationalization, it had jumped to twelve billion bolívares a year (Uslar Pietri 1985). (Inflation between 1950 and 1970 was minimal).

By breaking the state of poverty in Venezuela, oil revenues made possible the fundamental social, economic and political transformations of this century—rapid urbanization without violence, increased income per capita, the eradication of many diseases and increased life expectancy, the incorporation of almost everyone into the market economy and the establishment of preconditions for instituting democratic government. Oil income, overwhelming in its magnitude but not linked to the productive sacrifice of the Venezuelan society, step by step filled every area of national life and led to a rapid breakdown of old social relations (Baptista 1984). Above all, it created increasing and lasting expectations for abundance at every level of national life.

As oil income grew, the national government began to develop its oil policy. The decision to nationalize the petroleum
industry in 1976 was in large measure a political decision, but its historical and ideological roots dated from the early 1930s and 1940s. The decision was congruent with a strategy of state capitalism, but it was made only when economic, political and technical factors made it a viable project, and it culminated more than fifty years of gradual and sometimes uneven increments in the state's control of the industry.

The early relations between the Venezuelan state and the petroleum industry, which operated until 1976 under a regime of concessions to the major multinational companies (to which were added a small state-owned company and a private national firm after 1960), were decisive in shaping the relations of the state and the nationalized oil industry after 1976.

Following Spanish law, and in contrast to English and United States law, the Venezuelan state is the owner of all mines, so the state was authorized to exploit the mines or grant concessions to third parties. Early in the twentieth century, oil concessions were granted to various firms. Many were given to Venezuelans who then sold them to foreign companies (Interview 67.1/1-2).

The Gómez dictatorship (1907-1935) took a liberal attitude toward the concessionaires, yet there was a progression of legislation during these years. The Ministry of Development, under the direction of Dr. Gumersindo Torres from 1917 to 1922 and from 1929 to 1931, began to separate hydrocarbons from other minerals so as to regulate oil. Hydrocarbons
legislation in 1920 and 1921, which included the concept of national reserves, was modified successively during the 1920s, as production grew from 1,000 to 375,000 barrels a day and Venezuela became the largest exporter and the second largest producer in the world by 1929 (PDVSA, n.d.).

After 1920 there was a debate between Gumersindo Torres and the President of the Bank of Venezuela, Vicente Lecuna. Both sides agreed that the nation should begin to demand payment from the concessionaires for the right to exploit the mines, since Venezuela consumed virtually none of the oil it produced. But Torres thought that when the mines were on private lands, the payment should go to the landowner, while Lecuna believed all such payments should go to the state, so it could begin to modernize the Venezuelan society. His view prevailed, and the idea of "sowing the oil" persisted, although there has been a constant debate on the appropriate strategy for investing oil income (Baptista and Mommer 1987).

In 1930 the Colegio de Ingenieros de Venezuela proposed to the Ministry of Development that the government undertake to train Venezuelan petroléum experts, with financing from the foreign companies. Minister Torres refused. But later that year the Technical Hydrocarbons Service of the Ministry of Development was instituted, first government technical inspectors were appointed and the state itself began to send Venezuelan engineers to Tulsa and Oklahoma City to learn petroleum technology. The oil companies were indignant:
20 September 1930: In a memorandum to the Ministry of Development, the oil companies vehemently protest against what they consider to be government interference in their operations. ...At the same time, they express doubt as to the technical capacity of the Ministry inspectors (Martínez 1976:87).

This attitude lasted, and even in the 1980s Venezuelan oilmen often looked askance at Ministry technicians.

There were revisions to the hydrocarbons legislation during the early 1930s, but the next major developments were three legal tools that were instituted under Presidents López Contreras and Medina: the 1936 Labor Law, the 1942 Income Tax Law and the 1943 Hydrocarbons Law. These laws reflected one of two currents of thought with respect to petroleum policy, streams that became explicit after Gómez died. The position held by López Contreras, Medina and their collaborators was evolutionist, not antagonistic. The idea was to gain more advantages from the oil industry for the country, without violence. The other position was held by returning Gómez exiles, above all the Generation of 1928, who favored nationalization of the industry, either by not renewing concessions or, a more extreme stance, by decreeing nationalization, as Lázaro Cárdenas did in Mexico in 1938 (Interview 67.1/6).

The 1936 Labor Law provided for better working conditions and strengthened the union movement, beginning with oil workers
and then extending to other sectors. The 1942 Income Tax Law was the first of its kind in Venezuela, and it meant that the oil companies would now pay, in addition to the existing royalties on surface and exports, a tax on net income.

The 1943 Hydrocarbons Law was a milestone. It increased the government's share of profits and, in exchange, the companies were assured forty more years to exploit their concessions (Coronel 1983). Once the concessions were extinguished, in 1983, the land and assets would revert to the nation without compensation (Viloria 1983, Calderón Berti 1978). The Law also promoted domestic refining of Venezuelan crude oil and increased the scope of technical inspection of industrial operations. The 1943 Law was the result of delicate and lengthy negotiations with the oil companies, with the intervention of the Department of State of the United States, and the outcome was an important step forward in the Venezuelan political process and foreign policy of those years (Machado de Acedo 1988). The 1943 Hydrocarbons Law was still in effect in 1985, except where it conflicted with the nationalization law (Martínez 1976, Interview 67.1/5).

The Revolutionary Junta that governed Venezuela from late 1945 until late 1948 established a no-more-concessions policy and increased the take of the Venezuelan government to fifty percent of net profits (Martínez 1976), but it did not try to nationalize the industry. Under Dictator Pérez Jiménez new concessions were granted in 1956 and 1957.
The Ministry of Mines and Hydrocarbons was created in 1950, and it reflected the growing effort of the Venezuelan state to gain more control of the petroleum industry. Hydrocarbons has always been the strongest and biggest part of it and has absorbed most of the Ministry’s efforts (Interview 74.1/10). In 1985 the Ministry had two other major divisions, Energy, and Mines and Geology, but in the rest of this report "the Ministry" refers above all to the Minister, the Director General or Vice-Minister, and the Division of Hydrocarbons. The Minister was the cabinet member in charge of the source of three quarters of government income.

The Ministry of Mines and Hydrocarbons was proud of building a professional team of Venezuelan economists, petroleum engineers and accountants (Interviews 44.1/3, 74.1/10 and 31.2/6). Despite the relatively low salaries, the Ministry earned a reputation within the public administration of hiring and keeping on serious and talented personnel, a reputation of continuity and of professionalism.

Until 1959, the role of the Ministry was above all regulation and inspection after the fact, to make sure that the companies had met the requirements of the Hydrocarbons Law. 1959 was a turning point (Interview 67.1/7). Under President Rómulo Betancourt, when Juan Pablo Pérez Alfonzo was Minister of Mines and Hydrocarbons, he designed major policy guidelines: no more concessions; direct state participation in oil activities through the Corporación Venezolana del Petróleo, attached to the Ministry; growing participation,
through the prices, in the sale of the product and creation of a Coordinating Commission for Conservation and Trading of Hydrocarbons; co-founding and active participation in OPEC; increased inspection and conservation (Interview 67.1/7, PDVSA n.d.); and a campaign for preferential treatment for Venezuelan oil in this hemisphere (Martínez 1976).

Oil policy was still aimed at gaining ever greater control of the industry: reference prices for taxing, to be set with the companies after 1967 (Arreaza 1983); adequate use of technology (Decree 1316 of 1969); estimation of the reserves; and analysis, consolidation and publication of financial information (Interview 31.2/1). The Ministry also studied the future of the Orinoco Oil Belt and natural gas.

But until nationalization in 1976, oil industry investments in Venezuela, except those of the Corporación Venezolana del Petróleo (CVP)—a small part of the total—were made by the respective transnational companies. And investment shrank in response to the policies of the 1960s and the expectation of reversion by 1983 at the latest.

Early in the 1970s, the Ministry became very powerful, as the state rapidly increased its scope of control over the petroleum industry (Interview 77.1/8). From negotiating reference prices for tax purposes with the concessionaires, the executive branch was charged in 1970 (Ley de Reforma Parcial de la Ley del Impuesto sobre la Renta) with setting export values unilaterally (although there might still be
negotiations in fact), and in 1971 the Ministries of Mines and Hacienda began to implement this (Martínez 1976). From controlling the companies' actions after the fact—measuring the output of oil and gas, assuring that they were exploiting reservoirs with the best techniques, inspecting oil shipments—the Ministry was charged in 1971 (Decree 832) with approving the companies' annual programs for exploration, production, refining and sales (Martínez 1976). The Ministry represented Venezuela in OPEC, and OPEC was getting stronger. Now that the companies had to go directly to the Ministry for many approvals, although these might be negotiated still, the Ministry exercised some functions similar to those of a holding company, but without risking any capital.

In 1971, Congress granted the Venezuelan state a monopoly over the natural gas industry (Ley que Reserva al Estado la Industria del Gas Natural), a right delegated to the Corporación Venezolana del Petróleo (Martínez 1976). In the same year Congress passed the Reversion Law (Ley sobre Bienes Afectos a Reversión en las Concesiones de Hidrocarburos), which specified how foreign oil concessions and assets would return to the state, beginning in 1983, forty years after the 1943 Hydrocarbons Law. In 1972 a law was passed to create a Reversion Division in the Ministry of Mines; this Division prepared the studies that led to the reversion of two oil camps, Jusepín and Mulata, without compensation, in 1974 (Interview 77.1/4, Martínez 1976). The Division also prepared exploratory studies for nationalization or, as it
was then called, "advancing the reversion" or "advancing 1983" (Interview 77.1/4). In 1973 domestic marketing was prohibited for the private sector, whether national or foreign (Ley que Reserva al Estado la Explotación del Mercado Interno de los Productos Derivados de los Hidrocarburos); the Ministry was to regulate distribution and set prices (Martínez 1976).

So for years before 1976, the Ministry represented the executive branch of a political project that was supported by important sectors of the nation (Interview 76.1/3): to gain an ever greater share of profits and control of the Venezuelan petroleum industry, leading to eventual reversion of concessions and assets, starting in 1983 at the latest.

At the same time the situation in the Middle East had changed—the Suez Canal was closed from 1967 until 1975, the Syrian pipeline was broken and Libya had lowered its production—which removed a million barrels a day from the market. To compensate, sea traffic by large tankers increased around the Cape of Good Hope. Oil freights went up, and so did oil prices.

In Venezuela, these events triggered public debates about the future of the oil industry—an industry whose investments had been shrinking as the transnational companies saw reversion approach, an industry that was not ready to meet a sudden expansion in demand. By the time of the presidential campaign of 1973, there were two theoretical possibilities:
renegotiate the existing concessions with the companies, so that they would begin to invest, or nationalize oil and invest directly. By then, in the opinion of most observers, renegotiation was politically impossible—public opinion, as represented in the Congress, would not have permitted renegotiation with the transnational companies. President Carlos Andrés Pérez took office in 1974 and at the highest political level began to explore alternatives for nationalization. At another level he created the Presidential Commission of Petroleum Reversion. At the same time, Congress was discussing the major draft bills for nationalization (Interview 67.1/8).

The Commission presented its report and draft bill proposal to the President late in 1974 (República de Venezuela 1974). The National Executive, after modifying parts of the bill, presented it to Congress in March of 1975. Six reasons were given to justify nationalization of the petroleum industry:

1. Nationalization would give the state full decision power over the nation's basic industry.

2. Nationalization would assure that petroleum revenues provide the necessary financial resources for broadening the base of the Venezuelan economy.

3. Nationalization would let Venezuela obtain fair prices as the state would sell directly to consumer nations.

4. Venezuela was technically and administratively prepared to manage the industry.
5. The state was constitutionally obliged to conserve Venezuela's natural resources.

6. As the end of the concessions approached (1983, 1997), the state must make the necessary investment in equipment and exploration to guarantee continuity of the Venezuelan petroleum industry (Viloria 1983:42-49).

On August 29, 1975, Congress passed the Ley Orgánica que Reserva al Estado la Industria y Comercio de los Hidrocarburos. This law, the nationalization law, was based on the draft presented by the national executive in March, with modifications. It provided that on December 31, 1975, the petroleum concessions and service contracts in Venezuela would be extinguished as the nation paid compensation to the companies. Provisions were made in the law for structuring a state enterprise to produce and sell oil (PDVSA n.d.), and on August 30, 1975, Decree 1123 was issued to create PDVSA.

In 1976, the political project was completed. The Venezuelan petroleum industry was owned and managed by Venezuelans. By all accounts, this was a crucial moment for the Ministry, especially in the light of the creation of the holding company, PDVSA, sole owner of all of the shares of the new affiliates. The dynamics of this change, and their implications for organizational adaptation in the industry and the Ministry alike, will be analyzed in Chapter VII.
The Venezuelan petroleum industry before 1976

This section describes the intercorporate environment in the stable years before the state nationalized the oil industry: the way the companies were positioned with respect to each other, the organizational cultures that distinguished them from the rest of Venezuela and from each other, and their strategic behavior toward the market and the host state.

When the international oil market was dominated by the seven major transnational firms—years of artificial price stability made possible by semi-tacit agreements among the majors, years when Venezuela played a principal role in the market, years when the Venezuelan state gained ever more control and participation in the profits and the society grew to depend heavily on oil revenues—during those years Venezuelan oil was developed and distributed by many foreign companies who were granted concessions by the host state. The industry before nationalization can be conceptualized as a set of subsidiaries of foreign private companies, each with its own history and its own concessions, all competing in the international market and all regulated by Venezuelan laws.

In 1960 the government created its own oil company, the Corporación Venezolana del Petróleo, and in 1965 a national private group founded Mito Juan, but these were small firms.

Table IV represents the structure of the Venezuelan petroleum industry before nationalization. The table does not include companies, like Occidental and Phillips, that had service
contracts, nor the hundred or so companies that came and went between 1914 and 1973 (Barberii 1985). What is remarkable about the nineteen that, individually or in association with others, were still in Venezuela at nationalization is the variety among them. They came to Venezuela at different times, from different parts of the United States and one each from the United Kingdom and Holland, and their concessions ranged from eight hundred to some six hundred thousand hectares (see Annex III-1). They operated in different parts of Venezuela and the sizes of their investments were very different.

<table>
<thead>
<tr>
<th>Name and holding company</th>
<th>Production Potential (1000 b/d)</th>
<th>Refining Capacity (1000 b/d)</th>
<th>Net value of property, plant and equipment (Bs. 1000 000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoco</td>
<td>32</td>
<td>32</td>
<td>70</td>
</tr>
<tr>
<td>Caracas * (Ultramar)</td>
<td>10</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Chevron (originally Richmond)</td>
<td>52</td>
<td>46</td>
<td>75</td>
</tr>
<tr>
<td>Continental * (Conoco)</td>
<td>10</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Coro *</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Creole (Exxon)</td>
<td>1,596</td>
<td>1,515</td>
<td>2,513</td>
</tr>
<tr>
<td>Charter</td>
<td>14</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Eastern (1)</td>
<td>-</td>
<td>-</td>
<td>**</td>
</tr>
<tr>
<td>International * (Exxon)</td>
<td>-</td>
<td>-</td>
<td>138</td>
</tr>
</tbody>
</table>

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TABLE IV

VENEZUELA:
PRODUCTION AND REFINING CAPACITY AND NET VALUE OF CONCESSIONAIRES AND CORPORACION VENEZOLANA DEL PETROLEO, 1973

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<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mene Grande (Gulf)</td>
<td>473</td>
<td>419</td>
<td>-</td>
<td>276</td>
</tr>
<tr>
<td>Mito Juan</td>
<td>6</td>
<td>3</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>Mobil (first Socony)</td>
<td>76</td>
<td>80</td>
<td>104</td>
<td>83</td>
</tr>
<tr>
<td>Phillips</td>
<td>56</td>
<td>45</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>SAP Las Mercedes</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shell</td>
<td>789</td>
<td>793</td>
<td>380</td>
<td>361</td>
</tr>
<tr>
<td>Sinclair</td>
<td>26</td>
<td>28</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Talon</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Texaco Maracaibo</td>
<td>52</td>
<td>54</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Texas (Texaco)</td>
<td>41</td>
<td>42</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Vengref (2)</td>
<td>-</td>
<td>-</td>
<td>156</td>
<td>126</td>
</tr>
<tr>
<td>Varco (Arco)</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ven Sun</td>
<td>181</td>
<td>177</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total concessionaires</td>
<td>3,428</td>
<td>3,284</td>
<td>1,450</td>
<td>1,282</td>
</tr>
<tr>
<td>Corporación Venezolana del Petróleo</td>
<td>96</td>
<td>82</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>3,524</td>
<td>3,366</td>
<td>1,473</td>
<td>1,302</td>
</tr>
</tbody>
</table>

* Did not operate directly.

** Less than one million bolívares.  (2) Refining concession.

Sources: Ministerio de Minas e Hidrocarburos, Memoria y PDVE, 1973, as presented in República de Venezuela, Comisión Presidencial de la Reversión Petrolera, Informe, Caracas, 1974, p. V-43.

In production and refining Creole was first and Shell, with about half the capacity of Creole, was second; the others came far behind. Creole held the lion's share of the property, plant and equipment, with Shell and the Corporación Venezolana del Petróleo in second place, each with about half the value of Creole.
The Venezuelan subsidiaries of the transnational oil companies had different strategies for dealing with the market and the host country. The strategies were developed in the respective holding companies, but they had common elements. The interviews suggest that the concessionaires had a general way of responding to the oil market, so that it is possible to speak of a strategy "of the industry" during the relatively stable years before nationalization, and to compare it with industry strategy afterwards.

Before, the industry sought to provide a reliable supply of oil, especially fuel oil and heavy crudes, above all to the Eastern seaboard of the United States. Concessionaires competed actively with one another for clients and they priced for profit, but as price followers. They tried for maximum efficiency; costs were an important performance criterion, especially during crises. And each transnational company balanced production in Venezuela with that of its other subsidiaries around the world.

But industry responses to the international business environment were conditioned by the behavior of the Venezuelan state toward the petroleum industry. As it became clear after 1960 that the state was taking more and more control of the petroleum industry, and would probably nationalize it before the anticipated reversion date (1983), the companies changed their behavior with respect to the market and investment: they produced more oil, stopped exploring and cut way back on long range maintenance and
staff. The people who referred to these industry responses to state policy qualified them as predictable and sensible.

A Director of PDVSA (5) delved into the question of the industry's behavior with respect to the Venezuelan state before nationalization, as each company sought to maximize profit abroad. There was no "industry strategy" in the sense of a jointly designed plan of action; there were as many strategies as there were concessionaires. Shell, for example, made its own decisions, but Texaco was only an arm of the holding company, and that difference affected the respective strategies. But there was a business goal that was common in the sense that it was the same goal for each company: to maximize profits, or return on investment (Interview 6.3/7). That was successfully accomplished from the 1940s to the 1970s. Creole, for example, for years provided Exxon with about sixty percent of the world-wide revenues, including domestic revenues, and Shell Venezuela provided some forty percent of the total revenues for Shell.

But the business goal of profit maximization was affected by the actions of the Venezuelan government; there was a dynamic relation between the industry and the state.

_PDVSA Director 5:_ The idea was to keep it profitable and to respond—this was the strategy—to the government's increasing desire to participate with all they could—to keep government participation at a moderate level while they, the companies, got most of the profits (Interview 6.3/7).
The government was of course autonomous to make its own
decisions, but the industry could respond, and the response
might elicit another response from the state.

**PDVSA Director 5:** If the government increased taxes, then
the oil companies would reduce production so that total
revenues for the government would tend to be lower than they
were before, and that became part of a give-and-take,
question-and-answer game, a chess game in which government
and concessionaire tried to beat one another (Interview
6.3/7).

But there were variations among the companies' strategies for
dealing with the government as they sought to maximize
profit. The smaller ones, like Sunoil, had a shorter time
horizon than Shell or Exxon, which had been in Venezuela much
longer and had heavier investments. The larger companies
adapted their strategies to the government's actions.

**PDVSA Director 5:** Well ... the name of the game was to keep
control for the longest possible amount of the game. They
(the concessionaires) used a variety of ways: doing a favor,
arm-twisting (Interview 6.3/8).

An example of a favor was to open training centers to
Venezuelan petroleros, and so develop a local managerial
elite. Another was to invest in non-oil matters. When
Betancourt was President (1959-1964), for instance, both
Creole and Shell created investment funds to help him finance
small and medium non-oil industries. And on several occasions, when the government was short of cash, the transnationals advanced income tax payments that weren't due until later, paying in the first quarter for the whole year, on the basis of what the whole tax was estimated to be.

So the companies acted differently from one another in their give-and-take with the Venezuelan state, but with a similar purpose, profit maximization:

**PDVSA Director 5:** Basically, the strategies of the different companies, although quite different, toward the government, was maximize return on investment: be nice, if it works; be tough, if not (Interview 6.3/10).

But being tough could backfire:

**PDVSA Director 5:** I think when Sanabria was in charge of the government in 1958, he increased the income tax significantly. Mr. Haight, President of Creole at the time, reacted in a menacing way: he said in a letter to the Ministry that Venezuela would be sorry for having done that because it could be very unfavorable for Venezuelan income... He implied Creole would reduce production or stop oil flowing until it became even less profitable (Interview 6.3/10).

In theory, the operators could not be forced to produce. They could always say the demand for Venezuelan oil had to be curtailed, and that happened often between 1940 and 1970. There were fluctuations that probably had a lot to do, in
this speaker's view, with the struggle between the government and the oil companies to see which one could control the other. But this time the threat didn't work; at the request of the Venezuelan government the President of Creole was replaced early in 1959 (Martínez 1986).

The give-and-take, question-and-answer, between the state and the concessionaires had had a direction to it: it had moved from less government power to more, but with setbacks. It is represented in Figure 4.

<table>
<thead>
<tr>
<th>Less government power</th>
<th>More government power</th>
<th>Nationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>1930s</td>
<td>1950s</td>
</tr>
</tbody>
</table>

Source: Interview 6.3/11

The game was a constant struggle that was played in every arena—political, economic, administrative and foreign policy. The American, English or Dutch government might, for instance, impress upon the Venezuelan government the need to open up new areas for concessions, and this pressure would be
exercised at the highest levels. (The pressure might take different directions, however. Machado de Acedo (1988) shows how the Department of State of the United States, aware of that country’s dependence on Venezuelan oil, pressured the American oil companies to take a moderate stand toward the Venezuelan government during the negotiations that preceded the 1943 Hydrocarbons Law.)

The United States government tried in the 1950s to expand its presence within Venezuela, until Pérez Jiménez opened up new concessions in 1956 and 1957. Then, when the United States began to protect its own oil industry, after Middle East oil finally reached New York in 1960, Venezuela tried to get preferential treatment for its oil in that country (Interview 6.3/11).

The plays of the game in the technical arena, inspection, went on at lower administrative levels, in the oil fields or ports rather than in Caracas offices, and among technicians from the oil companies and from the Ministry of Mines. Over the years, very little love was lost between government fiscal agents and the companies. The people in the companies always felt they had the technical edge over the Ministry and they could do a better job if they were left alone. And there were, said PDVSA Director 5, efforts within the companies to do a good technical job of developing the reservoirs, of achieving a high gas-oil ratio. So many Venezuelan technicians in the companies were caught in a bind
between the Ministry of Mines (which distrusted them) and the multinationals (centered on profit), and the situation was "not simple. You had more than two actors in this situation" (Interview 6.3/11).

One of the complexities was the big salary difference between the Ministry and the companies. It resulted inevitably in a flow of technicians from the Ministry to the companies, and this left the Ministry with the job of training new technicians, or making do with less qualified people and with those who stayed on with a sense of public service or a political career, or both.

Several outstanding, high-level petroleum technicians were trained on government scholarships and hence went to work for the Ministry in directive positions. They often moved later to the concessionaires, as company directors, for example, and this enhanced the dialogue between the state and the companies. The industry was usually glad to have them. They were people who could speak to the state, and the state would listen. The companies could instead have gotten highly qualified people from Delft or the United States, but the Venezuelans who had had experience in the Ministry could get on a telephone and talk to the authorities without much protocol.

*PDVSA Director 5*: ...*the people from the concessionaires felt that they had to have a Venezuelan to do that job for them. They felt a foreigner could not simply get on the*
phone and say (to the Minister), “Let me talk with you,”
(Interview 6.3/13).

Access was important not only to the Minister of Mines but
also to the army, Congress, the Minister of Hacienda,
Fedecámaras, unions, “las fuerzas vivas”, the establishment.
That was at the higher levels. But the Ministry inspectors
had a harder time with the companies than the higher-level
technicians did:

**PDVSA Director 5:** The engineer with a company car and a
house, and the inspector from the Ministry, no car, no house,
trying to impose his will, to feel a bit better as a person:
that is where the problem is, and you must multiply this
example by dozens, at the lower, technical levels. The
older, higher ones are very sure of themselves. (A Ministry
Director) could talk with a soft voice to the oil people, or
anyone. At the lower levels there were real fights
(Interview 6.3/9-12).

Within the general strategy with respect to the host state,
individual companies might make different use of “favors and
arm-twisting”; Creole, for example, was noted for acting more
aloof and Shell for negotiating.

But the companies were, after all, rivals who competed with
one another for markets and for a better deal with the
government. Each one wanted better concessions, better
treatment on specific problems and choice sites for service
stations with company emblems. The domestic market afforded
more prestige than profit, but that prestige could help earn a better deal from the government.

When big problems came up, such as labor negotiations, the companies might cooperate. Usually Creole and Shell would get together, agree on a strategy, and the others would follow suit, so "the Venezuelan oil industry was a matter of Creole and Shell fighting with each other or agreeing how to face the government" (Interview 6.3/17).

But cooperation was the exception; secrecy and rivalry were the rule. Professional personnel were by gentleman's agreement discouraged from going (at least directly) from one concessionaire to another. Venezuelan oilmen from different companies might know one another from family ties, from school and college days, from earlier work in the Ministry, from contacts established while working on joint industry problems or even on occasional joint exploitation of adjacent fields. Since they were a small group and tended to stay for years in the industry, they formed a kind of community. They had in common a sense that they were different from the rest of Venezuela, more efficient, more honest, more privileged, and at work to produce what had become the daily bread of the government and the motor of Venezuela's economy. Still, Venezuelan oilmen before nationalization were positioned with respect to each other as competitors. They fought for markets and resources and they had worked and progressed in companies with very different cultures.
If the ties of the past led Venezuelan oilmen to identify with their own concessionaires, so did the expectations for the future, as nationalization approached. Management in the past had not been limited to Venezuelan nationals but had drawn upon experienced personnel from all around the world. The other side of this coin was that Venezuelan managers' careers had not been limited to Venezuela nor were they made in Venezuela. A sign of success for a Venezuelan manager in the old days was to be invited to join the international staff, and this depended on outstanding performance in other countries. But as nationalization approached, with the perspective of a wholly Venezuelan management and careers limited to the Venezuelan petroleum industry, managers could see that the trust and reputation that they had acquired with their own countrymen would be an important basis for future progress. And that trust had been built up within each respective company and even, as it is shown in Chapter VIII, within each functional unit. So it is not surprising that the industry's managers faced nationalization with apprehension—not only about becoming in effect employees of the Venezuelan state, perhaps without the security and benefits they had enjoyed as transnational oilmen, but also about how they would be organized with respect to each other and what that organization would mean for their careers.

As nationalization approached, the Venezuelan managers and directors of the transnational companies were in a complex
position. They were Venezuelan citizens in a foreign industry operating in their own country, and they had had to work hard for decades to be able to move into directive positions. At the same time, that industry was subject to controls by the Venezuelan state, which looked with suspicion upon the foreign subsidiaries, including their Venezuelan personnel. The industry was vitally important to every aspect of the national economy, yet its success depended on the international market, and its daily operations, carried out in isolated oil camps, were virtually unknown to the rest of the Venezuelan society. This fact, after nationalization, became a key inhibiting element to the relations between the industry and the state as they looked for a balance between government control and industry autonomy.
IV. 1976-1985: A TIME OF CHANGE

The situations of crisis are the ones that provoke uncertainty. The most threatening changes are the ones that would plunge the system into uncertainty (Schon 1973:13).

From the mid-1970s on, as I propose to show in this chapter, all three of the industry's environments became more turbulent, in the sense of an increased range and rapidity of change and more elements of change in each one. The organizational behavior of the Venezuelan petroleum industry therefore changed too, as it responded to the turbulence, while it continued to pursue its objective of profit and, to a smaller degree, two new objectives, the buying of Venezuelan outputs and regional development near oil installations.

Increased uncertainty and discontinuities in the market

The future is no longer stable; it has become a moving target. ...The oil industry—which before 1973 enjoyed the steadiest growth of all industries—is still living with its failure to anticipate the turbulent changes that have occurred since then (Wack 1985a:73-75).

As the 1970s began, most businessmen expected that the new decade would be just a little different from the 1960s. Growth of national real income would be roughly the same. Industrial production would grow more slowly, services more quickly. Government spending would grow, both in absolute
and relative terms. Inflation would still be a problem, but it would not get worse. Unemployment would be more serious than it had been in the 1960s, but even so, businessmen expected some cyclical labor shortages. Corporate profits would grow, although they might not keep up with national income. And recessions would continue to be relatively mild (Ammer 1971, cited in Wack 1985a).

Executives in the major oil companies shared this vision of the world economy in the 1970s, and they held two related assumptions about oil: a high supply of oil and a relatively stable "take" on the part of the host governments in producer nations (mostly members of OPEC). In November of 1969, for example, the Oil and Gas Journal forecast that oil consumption would mushroom, from forty-five million barrels a day in 1970 to over eighty million in 1980; the discussion centered on exploration for new reserves but did not even mention prices (Van Dyke 1969).

In Shell and other oil companies the worldview was "more of the same", and the resulting corporate strategy was "business-as-usual" or avoidance of change. This meant to go ahead and explore and drill, build refineries, order tankers and expand markets (Wack 1985a).

But during the late 1960s and early 1970s, Shell planners began to realize that expansion of the industry could not continue. The market would soon switch from a buyers' to a sellers' market, with major discontinuities in the price of
oil and changing interfuel competition. The traditional oil business environment was changing. A long period of oversupply was ending and spare crude oil supply capacity was running out. The Middle East would soon become the balancing source of oil supply. If the demand on Middle East production were met, it would reduce the region's reserve-production ratio, but that would not be allowed to occur—among other things, the Arab nations would want to conserve oil (Wack 1985a).

The driving forces underlying the oil system started with the three major groups of actors: oil producing countries, oil consuming countries and customers. Each group was driven by its own self-interest, so each one behaved differently from the others.

In the Middle East and Africa, the major oil producing countries—Iran, Saudi Arabia, Iraq, Kuwait, Libya and Nigeria—all had different needs, different technical capacities and different reserves. The differences affected their respective motivations with respect to three variables: production, government take and ability to absorb oil revenues. And there was interaction among these variables. This was the major source of OPEC's power: no OPEC nation had both ample reserves and ample capacity to absorb them. In other words, no OPEC nation was in a hurry to sell large amounts of oil. On the contrary, OPEC nations would be better served by selling less and charging more. Annex IV-1 represents this fact graphically.

113
Oil imports were expected to increase greatly in the mid-1970s, particularly in the United States, Japan, and Western Europe. In the United States, oil supply had already peaked. The incremental demand for energy had at first been satisfied by natural gas, but the price of natural gas was regulated so that production leveled off in 1972 (Wack 1985a). Coal resources were not being developed, owing to forecasts of nuclear power generation, yet nuclear plants were not growing so fast as energy demand. So oil would fill the gap, and even if total energy demand in the United States grew at only three or four percent a year, there would be a large increase in demand for oil.

The Japanese economy was growing at eleven or twelve percent a year and its demand for oil was increasing at twenty percent a year, which would result in a huge increase in oil imports to Japan in the mid-1970s, while demand for oil imports in Western Europe and other countries was also expected to grow. And it became clear that consumer country governments were not prepared to react to an oil shock.

The implication of the above analysis for oil company managers was that an oil shock was coming, by 1975 at the latest, when there was to be a renegotiation of the 1971 OPEC agreement on prices and a decision on the government take. Everything pointed to price insecurity: the negative supply elasticity; the cost and delay of producing alternative fuels; crude reserves developing at producers' logic; the
scramble for oil in the United States, Japan and Western Europe; consumer governments' unawareness of the implications of a possible oil shock (so they were not prepared for conservation); and possible "accidents"—political, internal or physical (Wack 1985a).

The shock came late in 1973, during the Arab oil embargo, which lasted from October 1973 until March 1974. OPEC nation representatives met in Teheran in December 1973 and announced a fourfold price hike and an increase in the OPEC take from less than $2 to $7 a barrel (Stobaugh and Yergin 1983:30). In 1973 and 1974 oil managers everywhere focused on the short term: economic growth, oil demand, inflation, interest rates and their relationships with OPEC suppliers (Wack 1985b).

The 1973 oil price increase generated a series of waves. Inflation rates, already high, were accelerated. In mid-1974, demand contracted to well below production capacity. Anti-inflation policies in the OECD countries contributed to this phenomenon, and three major industries contracted, "like dominoes": automobiles, building and construction, and iron and steel. The recession deepened as companies ran down inventories, and consumer spending in the OECD countries declined considerably.

The governments of Japan, Germany and the United States all faced elections in 1976, so they aimed at growth and increased output, back to the capacity level. This fit with the need to reduce widespread unemployment, especially among
the young, so 1976-1978 was a time of recovery in the
industrial countries, a time of constrained growth. But it
was also "a world of internal contradictions. What had been
the floor for long-term economic growth expectation before
1973 now became the ceiling" (Wack 1985b:146).

Stobaugh and Yergin call the years between 1974 and 1978 "a
period of apparent calm and stability" (1983:30). Demand for
OPEC oil slackened with slower economic growth in industrial
nations. Oil production increased in the North Sea and
Alaska. By 1978 OPEC production was slightly lower than in
1974, and OPEC price increases had not kept up with
inflation. OPEC member nations were evaluating the results
of their boom-type development plans, based on extraordinary
oil revenues. It had been nearly impossible to invest large
amounts of petrodollars efficiently, despite the planning
efforts, and these countries had begun to adopt an attitude
of conservation (Stobaugh and Yergin 1983:31-2).

The general problems faced by the OPEC countries at this time
put the Venezuelan situation in perspective. Venezuela, by
most standard socioeconomic indicators (life expectancy,
manufacturing product as a proportion of gross national
product, demographic growth rate, education of women, for
example), is one of the more developed OPEC countries, but
undeniably it is similar to the others and depends as heavily
as any on oil exports for foreign exchange and fiscal
revenues (Salazar Cuervo 1985).
There was no precedent for the size of the opportunity and the problems facing the OPEC countries between 1973 and 1978. Many of them nationalized their petroleum industries and drew up national plans to guide the investment of the extraordinary resources. For a time, they could count on a large flow of oil revenues, so they undertook to develop economies that could provide their governments with revenues after the oil era. Development planning in Venezuela had been institutionalized in the 1960s; during the 1970s the challenge was to use that mechanism to invest oil revenues wisely. Many projects were undertaken and some were completed but, as it will be shown later in this chapter, by 1980 the national treasury and the private sector alike had accumulated immense debts with foreign banks.

Most OPEC countries had serious trouble coordinating the parts of the plans among the various sectors of their respective economies, and in each country the state-owned oil industry itself had to invest in port facilities, forward integration into refining, petrochemicals and tankers. This typical planning problem—the need to invest in oil as well as in other sectors of the economy—was present in Venezuela and it is at the heart of Chapter VII of this document. Venezuela was exceptional among OPEC countries, since it was already refining about a third of its production, but industry directors saw the need to deepen the refining patterns and this was undertaken. Other investments were required to gear up for the future.
And the OPEC country governments, having invested in social infrastructure as part of the development plans, had then to maintain and operate it. Budgetary and foreign exchange deficits began to build up in some countries. Established social and cultural values begin to weaken. Oil is a capital-intensive industry, so that the number of citizens directly involved in the oil operations is small, and there was a danger of creating a privileged oil elite. The outcome of these major and rapid changes might easily be a wave of disappointment, frustration and resentment in OPEC nations (W. Levy 1982). The economic events of the early 1980s in Venezuela, described later in this chapter, followed this general pattern.

The second oil shock came in 1979. Early in the year the market had become very tight, partly as a result of Iranian oil disappearing from the market, and prices soared. Supply was not immediately available and the industrial nations were unprepared to cooperate with each other enough to limit price rises (Stobaugh and Yergin 1983). After the second shock, the industry increased drilling activity and fought with each other to secure term contracts for the supply of crude. The problems of the oil industry seemed to be on the supply side, not the demand side (Wack 1985b).

But this was an illusion. By 1980 the producing nations had become a successful force in the marketing of oil (Stobaugh and Yergin 1983:36). There was an economic recession that
year and, more important, consumers began to conserve more oil than producers had expected. Then in 1980 Iraq invaded Iran, supply dipped and uncertainty pushed prices upward. In 1981 OPEC unified prices at $34 for Arab light equivalent. Then demand slipped, and in March 1982 OPEC, for the first time, agreed on production quotas for member nations (Stobaugh and Vergin 1983). World oil demand continued to fall until 1984, when it picked up slightly, but the outlook was still uncertain. Graph II shows how far off the forecasts of oil demand for these years were:

GRAPH II

WRONG WHEN IT HURTS MOST

<table>
<thead>
<tr>
<th>World oil demand</th>
<th>Actual demand</th>
<th>Forecast demand range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>70</td>
<td>75, 78, 80, 84, 85, 90</td>
</tr>
<tr>
<td>80</td>
<td>70</td>
<td></td>
</tr>
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<td>70</td>
<td>60</td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>0</td>
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</tbody>
</table>

to bunch together, as in the early 1980s, when everyone suggested more or less gradual increases toward the 1990s. The growing uncertainty created serious planning problems for the producer country governments, who had in any case to make a budget. This required a new kind of thinking, of being prepared for ups and downs, "a whole new attitude for life, and we are not prepared for it" (Petzall 1986). The change was even more complex in those producer countries that, like Venezuela, had recently nationalized their oil industries, because for the first time they had to include in their national plans the investment in the oil sector itself.

The impact of this twofold change—uncertainty and ownership—was manifested in Venezuela during the elaboration of the Sixth National Plan (1981-1985) when government planners, for the first time in their professional history, were asked to accept that it was not possible to foresee what oil income would be for the next five years. The industry was in the uncomfortable position of seeing uncertainty yet wanting to present the government with a convincing argument—increased demand—for investing heavily in increased production potential. Government and industry alike were irritated by the process, as they tried to adjust not only to each other as owner and state-owned enterprise but to growing uncertainty of income as well. The dynamics of the interaction between the government planning agency, the Ministry of Energy and Mines and the oil industry are illustrated and analyzed in Chapter VII.
Nor was anyone prepared for the price collapse of late 1985 and early 1986 that is represented in Graph III.

GRAPH III

AVERAGE WORLD PRICE OF OIL, 1976-1986

Dollars per barrel


In May of 1986, a Venezuelan petroleum expert (Petzall 1986) remarked that oil price forecasts seemed to have lost their meaning; "anything can happen". The price hikes of 1973-74 and 1979 and the collapse of 1986 represented cataclysms and "we still don't know how to manage them". Faced with uncertainty and asked to make a forecast, the experts tended
Bonanza, recession and changes of government in Venezuela

The oil market, with its uncertainty and discontinuities, combined with a mounting foreign debt and enormous capital flight in Venezuela to create a situation of crisis and potential conflict in the Venezuelan society of the early 1980s. Some of the problems could be traced to the oil market and others to the political economy and to poor administration, but the changes had repercussions on the behavior of the oil industry during these years.

From 1950 until 1973 the Venezuelan economy, measured in terms of its gross domestic or territorial product, grew at six or seven percent a year (Annex IV-2), a comparatively successful growth rate (Escobar 1984). For most of those years the state—under democratic government from 1958 on—chose a development model centered on reducing dependency on oil, strengthening inward-directed growth (import substitution), improving income distribution among families and regions, expanding services and achieving a more just and participative society. The role of the state was that of a "sober and rational" planner, promotor and investor. Productive capacity was expanded, and so were employment and infrastructure. The middle classes grew and there was relative political and social peace (Izaguirre 1984).

From 1974 until 1978, after the fourfold oil price increase, the economy grew as much as eleven percent in some years. Inflation, which had not been a problem before the 1970s,
became appreciable (Escobar 1984). The government expanded state-owned industrial capacity, especially in southeastern Venezuela (iron, steel, aluminum, gas and hydroelectric power), but also petroleum projects. The bonanza of this period created a social psychology of growing expectations at many levels, a collective boom mentality (Izaguirre 1984).

But after 1978, the economy stopped growing. The non-petroleum sector, which had grown at seven or eight percent a year between 1968 and 1978, stopped growing and even contracted; the reason was that public and private investment fell and so did government expenditures (Annex IV-3 graphs the tendencies), and these are the major engines of growth of the Venezuelan economy. The decline in private investment reflected in some measure the reduction in public investment, since they are very closely linked (Escobar 1984).

In 1979, the newly elected government decided the economy was "overheated" and should be "cooled off", at least for a while. The government released price controls on many items and imposed tariffs. Public expenditures were reduced and the major projects under construction were reviewed. Interest rates were adjusted and liquidity was reduced. And the growth of the gross domestic product slowed down, while inflation grew (Izaguirre 1984).

In 1980 the government reconsidered its economic policies and increased public investment, using the new oil revenues provided by the extraordinary price increase of 1979. But by
then the private sector had lost confidence in the Venezuelan economy as a source of investment opportunities, and that confidence had still not recovered in 1987. Construction in particular contracted greatly (Escobar 1984, Izaguirre 1984).

The other major engine of economic growth in Venezuela is the central government’s current expenditures. Between 1968 and 1973, government income and spending, graphed in Annex IV-4, both grew from nine to thirteen billion bolívares. In 1974, with the oil price hike, government income jumped to forty billion bolívares (in current prices), and spending followed close behind.

Oil prices were stable through 1978 and so was government income. But spending kept growing, producing a deficit, not at first unreasonable, given the large amount of income and the optimistic outlook for oil revenues. Fiscal spending contracted in 1979, as part of the political economy of the new administration, and then began to grow very fast, as the price of oil jumped from twelve to thirty dollars a barrel. In 1981 the government spent ninety billion bolívares, in current prices. When oil prices began to fall—as a result of excess supply, inventories of crudes, disagreements in OPEC and the recession and conservation in industrialized countries—Venezuela’s fiscal income dropped to seventy billion bolívares (Escobar 1984).

At the same time, public debt was rapidly growing. It had made financial sense to ask for loans while the country’s
financial position was solid (Palma 1984, Escobar 1984). But a Law of Public Credit in 1976 made it easier for the decentralized government agencies to borrow—above all state-owned enterprises, including banks, but also autonomous institutes—and borrow they did, at home and abroad. There was no orderly, centralized control of the loans, which were used to finance both current and investment expenditures, and even subsidies. The large investment projects—steel, aluminum, refining, hydroelectricity—took years to build and to become profitable, and meanwhile more money was needed to complete them and to learn how to operate them efficiently.

Foreign banks—many of them with large sums of money from the Middle Eastern oil countries—continued to approve loans, often without careful analysis. Automatic refinancing mechanisms only postponed the crisis, and in 1981 the banks became more demanding while Venezuela’s oil revenues shrank. The Mexican crisis followed, and the Venezuelan government saw that it must restructure the foreign debt (Palma 1984).

The effects of the oil crisis were aggravated in Venezuela by the capital flight that began in 1981—a product of higher interest rates abroad than in Venezuela, and of the loss of confidence on the part of major private investors, many of whom were immigrants from Europe and the Middle East who had seen discontinuities in the past and whose confidence in the Venezuelan economy was closely tied to the situation of the oil market. Indeed, when in 1982 the interest rates in New York and London fell to several points below Venezuela’s
rates, the lack of confidence became manifest as astonishing amounts of private capital continued to leave Venezuela (Escobar 1984, Izaguirre 1984). That was the year that OPEC established production quotas, which limited fiscal income.

In August of 1982 the Venezuelan Central Bank revaluated its gold reserves and in September the authorities transferred the oil industry's foreign exchange reserves, some four billion dollars which had been deposited in foreign banks, to the Central Bank. No exchange controls were imposed and confidence did not return; on the contrary, another four billion dollars left the country through private hands in the next four months. The climate of collective insecurity in Venezuela was exacerbated by the long-drawn-out discrepancies between the fiscal and monetary authorities, discrepancies which implied a lack of firm leadership with respect to Venezuela's economic and financial future (Izaguirre 1984).

The Minister of Finance who took office late in 1982 found that it was a hard job just to discover the amount of the decentralized government debt—which turned out to be as big as the central government debt. Some of it had been contracted on solid grounds, but a large part had not. And Venezuela began to negotiate refinancing of the public debt with over a hundred banks in the United States, Japan and Europe (Sosa 1984).

The situation early in 1983 was serious. There was a severe fiscal crisis and the foreign public debt was estimated at
twenty-seven billion dollars. On February 18, 1983 the
government closed the exchange market while it imposed a
system of differential exchange rates. In the minds of most
Venezuelans, February 18—"Black Friday"—marks a turning
point in the country's economy: the end of cheap and easily
available dollars, a downturn, the beginning of pessimism.

The differential exchange rates were designed to correct the
overvalued bolivar gradually enough to let the various
sectors of the economy adjust without making the crisis
worse. The oil dollar was kept at Bs. 4.30, other state-
owned exporting enterprises were allowed to convert at Bs.
6/dollar, while on the market the rate was Bs. 13 or Bs. 14.
The private sector foreign debt, an estimated six billion
dollars, raised the issue of what exchange rate would be
allowed for repaying it, and as the decisions lagged, in
1983, private sector representatives became more critical and
more alarmed (Izaguirre 1984).

Presidential elections were held in December 1983. The
opposition won and took office early in 1984. The debt
negotiating team had to be restructured to include members of
the incoming party's confidence, and the new team had in turn
to earn the confidence of the international banks. Two years
of active negotiating went by before a refinancing agreement
could be made for the payment of the government debt.

By late 1985 the economic situation looked very slightly
better, as inflation was held to about twelve percent and the
non-petroleum sector showed signs of recovery. But the oil market did not improve. OPEC continued to impose quotas on its members, but the price dipped slowly and then, in 1986, it sank (Graph III, page 120). The Venezuelan export price dropped from around $25 per barrel in 1984 and 1985 to $15 in the middle of 1986. The dollar was selling on the free market for Bs. 20. (It had risen to Bs. 30 by the middle of 1987). Imports dropped, the economy did not grow and capital did not return. In July of 1986 the President of Venezuela announced that the private sector would have to pay its foreign debt at Bs. 7.50 a dollar (Lusinchi 1986). The economy's prospects for the immediate future were poor and national observers could only hope for a partial recovery of the oil price and a more promising outlook for the 1990s.

The early 1980s mark a turning point in the collective Venezuelan mentality. In a country whose citizens were used to believing that everything was possible, where few national projects were explicitly ranked as low priority, where most aspirations could be achieved in some measure—in such a country it was possible to create an illusion of harmony among the various sectors of the society. Ample resources meant that everyone could get some of what he wanted, or could believe he would get it, sooner or later. Prolonged scarcity and uncertainty were new to the Venezuelans of the middle and upper classes, and the leaders had not learned to deal with two related problems: the need to say no, overtly, to some of the aspirations, and the consequent need to manage
conflict—conflict which could no longer be concealed by satisfying everyone in some measure (Naím and Piñango 1984). This kind of conflict is at the very center of the political and planning processes, and planning now included investment in the nationalized oil industry.

During these years, the oil industry was responding to the uncertainties and restrictions of the market and to the changing national environment, and at the same time it was changing internally. Before looking at the intracorporate environment of the industry between 1976 and 1985, however, it is useful to identify, briefly, the major political actors of those years. They are presented in Table V.

Much of the preparatory work for nationalization, described in Chapter III, was carried out by the Copei administration, headed by President Rafael Caldera. Minister Hugo Pérez La Salvia and his Director of Reversion, Humberto Calderón Berti, were both major actors during these years.

But Acción Democrática won the elections at the end of 1973, and in 1974 President Carlos Andrés Pérez appointed Valentín Hernández as his Minister of Mines; this is described in Chapter V. In 1975, when the nationalization law was passed and PDVSA was created, General Rafael Alfonzo Ravard was named President of PDVSA. General Alfonzo, it is said, had free access to President Pérez, and the Minister of Mines seldom intervened in this channel of communication.
<table>
<thead>
<tr>
<th>Party</th>
<th>Copei→ → → → → Acción Democrática→ → → →</th>
</tr>
</thead>
<tbody>
<tr>
<td>President of Venezuela</td>
<td>Rafael Caldera→ → Carlos Andrés Pérez→ → → →</td>
</tr>
<tr>
<td>Minister of Mines</td>
<td>Hugo Pérez La Salvia→ → Valentín Hernández→ → → →</td>
</tr>
<tr>
<td>President of PDVSA</td>
<td>(PDVSA was founded in 1975.) General Rafael Alfonzo Ravard→</td>
</tr>
</tbody>
</table>

Copei won the elections at the end of 1978, and Luis Herrera Campíns became President of Venezuela and appointed Humberto Calderón Berti as Minister of Mines. Dr. Calderón had headed PDVSA's research unit during the Pérez administration. He was known as a brilliant and articulate professional and as a highly political person who enjoyed President Herrera's entire confidence. During these years, General Alfonzo's access to the President of Venezuela was limited and he often had to report to Minister Calderón. For a man who since the early 1960s had reported directly to Presidents of both major parties, and who had been Calderón's boss at PDVSA, this was a blow.

In 1983, an election year and a "lame duck" period, since Venezuelan Presidents cannot succeed themselves, President Herrera appointed Calderón Berti to the Presidency of PDVSA. Most observers
NATIONAL PRESIDENTS,  
PRESIDENTS OF PDVSA  
1987

<table>
<thead>
<tr>
<th>79</th>
<th>80</th>
<th>81</th>
<th>82</th>
<th>83</th>
<th>84</th>
<th>85</th>
<th>86</th>
<th>87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copei→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>Acción Democrática→</td>
</tr>
<tr>
<td>Luis Herrera Campins→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>Jaime Lusinchi→</td>
</tr>
<tr>
<td>Humberto Calderón Berti→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>J.I. Arturo Moreno→</td>
<td>→</td>
<td>→</td>
<td>Hernández Grisanti→</td>
</tr>
<tr>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>H. Brígido</td>
</tr>
</tbody>
</table>

qualified it as an arbitrary appointment. Both major presidential candidates had insisted they would not ratify him as President of PDVSA. By moving from Minister to holding company president he upset customs of seniority. His former deputy minister, Dr. José Ignacio Moreno León, was now officially Calderón’s boss, but in fact Calderón continued to report directly to President Herrera. And the oil managers, who had been anxiously awaiting the appointment of an oilman to replace General Alfonzo at the end of his term, were disappointed and angry.

Acción Democrática won the elections at the end of 1983, and President Jaime Lusinchi dismissed Humberto Calderón Berti and appointed Arturo Hernández Grisanti as his Minister of
Energy and Mines. Brígido Natera, President of Lagoven and a thorough oilman, was named President of PDVSA. His appointment was a relief to the oil industry management and he presided the industry until 1987. He was replaced by Juan Chacín, another respected oilman but also a half-brother of President Lusinchi, so that his appointment was seen as the product of a combination of professional, political and personal criteria.
Reorganization and expansion inside the industry

Nationalization brought with it important changes in the intracorporate environment of the industry, so that while the industry as an organization was responding to the changes in the world oil market and the Venezuelan economic and political situation, it was also responding to important changes in itself: the transnational holding companies left the ownership and management of the industry, PDVSA was created and a new federative structure was adopted and then adjusted. There was also a change in scale, as investments and work force expanded greatly and then, after 1982, stabilized. Although the industry undertook the expansion projects and recruited and hired the new work force, the urgency to expand came from outside, from the market outlook and the previous contraction of investment. It was endorsed by the President of Venezuela, so expansion cannot really be called an industry response. However, the new investments and expanded work force changed the intracorporate environment and elicited new responses to the change of scale. The intracorporate changes are described below.

When the transnational companies left or moved into an advisory capacity, vacuums were created, above all in finance, human resource development, corporate planning and research. Many of the organizational responses documented in the findings were efforts to fill those vacuums in PDVSA and the subsidiaries.
In August 1975, PDVSA was created by decree as the new industry holding company. In contrast to the operating companies, which were left largely intact under the new ownership, PDVSA was new and it had to be structured and staffed. PDVSA was important in another way: it put a new organizational layer between the Ministry and the operators. This produced anger in the Ministry, which in the early 1970s had dealt directly with the concessionaires much as a national holding company might do. The operators regarded PDVSA with scepticism.

A federation of vertically integrated affiliates of the new holding company was adopted as the organizational structure for the nationalized industry. It meant preserving Creole (with Amoco) and Shell de Venezuela (with Phillips) and gradually merging the others, first into ten, then five, then three, then two and in 1986 into one operating subsidiary. The merging process is represented in Figure 5. Other affiliates were created for special needs: Bariven for purchasing, Intevep for research, Pequiven for the petrochemical complex, and offices in New York and London.
### FIGURE 5

**PDVSA: CONSOLIDATION OF THE INDUSTRY’S OPERATING AFFILIATES 1975-1986**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Creole</td>
<td>Lagoven</td>
<td>Lagoven</td>
<td>Lagoven</td>
<td>Lagoven</td>
<td>Lagoven</td>
</tr>
<tr>
<td>Amoco</td>
<td>Amoven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shell</td>
<td>Maraven</td>
<td>Maraven</td>
<td>Maraven</td>
<td>Maraven</td>
<td>Maraven</td>
</tr>
<tr>
<td>Phillips</td>
<td>Roqueven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talon</td>
<td>Taloven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mito Juan</td>
<td>Vistaven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulf (Mene Grande)</td>
<td>Meneven</td>
<td>Meneven</td>
<td>Meneven</td>
<td>Meneven</td>
<td></td>
</tr>
<tr>
<td>Las Mercedes</td>
<td>Guariven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
<td>Palmaven</td>
<td>Palmaven</td>
<td>Llanoven</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sinclair -Atlantic</td>
<td>Bariven</td>
<td>Llanoven</td>
<td></td>
<td>Corpoven</td>
<td>Corpoven</td>
</tr>
<tr>
<td>Mobil</td>
<td>Llanoven</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chevron</td>
<td>Boscaven</td>
<td>CVP</td>
<td>CVP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CVP</td>
<td>CVP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texaco</td>
<td>Deltaven</td>
<td>Deltaven</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Between 1976 and 1984, the Venezuelan petroleum industry sold crudes and products for 575 billion bolívares. Twenty percent of that income covered operational expenditures and sixty-eight percent went to the Venezuelan government for income tax, royalties and other taxes. The rest, seventy billion bolívares, represented the industry's operational earnings. Another twenty-four billion was received from interest and other sources, so net earnings were ninety-four billion bolívares in nine years (Peñaloza 1985). In those years, the industry invested eighty billion bolívares in property, plant and equipment, as follows in Table VI:

<table>
<thead>
<tr>
<th>Function</th>
<th>Investment</th>
<th>Billions of bolívares</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>47</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Exploration</td>
<td>14</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Refining</td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Shipping</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Domestic marketing</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source: Humberto Peñaloza, "Los grandes números del petróleo", El Nacional, Caracas, 30 August 1985: D-10, based on figures from PDVSA.
The investments in production potential, in aging fields
whose maintenance had been minimal in the early 1970s,
resulted in a capacity of 2.6 million barrels a day in 1985;
actual production that year was 1.6 million barrels a day, of
which 1.4 million were exported (Alcock 1986). Their
destination is compared with 1975 and 1981 in Table VII.

---

TABLE VII

VENEZUELA: DIRECT EXPORTS OF CRUDES AND PRODUCTS
(Percentages)

<table>
<thead>
<tr>
<th>Part of the world</th>
<th>1975</th>
<th>1981</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western hemisphere</td>
<td>88.4</td>
<td>74.2</td>
<td>75</td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>46.5</td>
<td>32.8</td>
<td>56</td>
</tr>
<tr>
<td>United States</td>
<td>32.9</td>
<td>23.7</td>
<td>50</td>
</tr>
<tr>
<td>Greenland and Mexico</td>
<td>0.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central America</td>
<td>15.3</td>
<td>9.1</td>
<td>13</td>
</tr>
<tr>
<td>South America</td>
<td>26.6</td>
<td>32.3</td>
<td>5</td>
</tr>
<tr>
<td>Eastern hemisphere</td>
<td>11.5</td>
<td>25.8</td>
<td>25</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European Econ. Comm.</td>
<td>10.9</td>
<td>20.6</td>
<td>22</td>
</tr>
<tr>
<td>Others</td>
<td>8.7</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>Asia and the Far East</td>
<td>2.1</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>0.3</td>
<td>3.8</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100</td>
</tr>
<tr>
<td>Millions of barrels/day</td>
<td>2.1</td>
<td>1.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Sources: 1975, 1981 and 1985, George Kastner and Simón
Chocron, with Alberto Quirós Corradi, "Las características de
la situación energética: la perspectiva venezolana",
Caracas: IESA, 1983, pp. 33–34. Data based on Maravén,
S.A., Unidad de Planificación, 1983. 1985, Efraín Barberii,
"Síntesis de actividades relevantes", unpublished manuscript,
1987.
In 1975, proven reserves in traditional areas were 18.5 billion barrels (Coronel 1983), and by 1985 they were 29 billion barrels, a major increase (Barberii 1987). In the Orinoco Oil Belt oil in place was estimated at 1.2 trillion barrels. Gas reserves were estimated at ten billion barrels (Alcock 1986).

Refining capacity in 1985 was 1.2 million barrels a day (Alcock 1986); this was not a great increase in size over 1976, but the composition had changed, so that gasoline and naphthas were more important and fuel oil less so (Barberii 1985).

The industry owned twenty tankers in 1984, seventeen of them purchased after nationalization (Barberii 1985).

The work force grew rapidly during those same years. Graph IV represents the total work force between 1950 and 1982, distinguishing Venezuelan nationals from foreigners. But not only did the work force grow; it changed. Since the companies had not hired for years before nationalization, there were very few middle managers by 1976, when the industry began to recruit and hire young professionals. By 1982 half of the employees had been in the industry for less than five years, and the proportion of newcomers was even greater among professionals and middle managers. Many of the directors and managers who were interviewed for this study found that the changing composition of the work force by
longevity had changed the Venezuelan petroleum industry's intracorporate environment. In Chapter VIII I propose that if there is not organizational reflection on this change, the future managers will behave differently from the present ones, in ways that are difficult to predict.

I propose to show that the increased turbulence in the industry's three environments between 1976 and 1985, and the shifting nature of the interaction among them, created a moving target for the newly nationalized organization as it pursued profitability and, to a smaller degree, the state's injunctions to buy Venezuelan inputs and undertake regional development near industry installations. The moving target and the contradictory nature of some of the demands from each environment induced new organizational responses, whose nature is described in the next chapter.

I further propose that during the nationalization process there were transactional stages, defined by the changing nature of the environments, and that at each stage the mutual relations between the enterprise and the state were different and elicited different responses and patterns of responses in each organization. The oil industry, owing to its history and culture as a privately-owned business, was more adept at responding to some of the demands than to others, and the state, with a long experience as host state and controlling agent, was less prepared for its tasks as owner of the nation's major industry. There resulted opportunities for both parties--state and state-owned enterprise--to inquire into the interaction and nature of the dialogue between them and, at times, to learn as a result of organizational reflection. The next part of the document presents and analyzes the organizational responses to the environments.
V. THE CENTRAL DILEMMA AND THE TRANSITION TO NATIONALIZATION

The interviews provided many recollections and illustrations of the industry between 1976 and 1985. There are examples from different industry functions. There are descriptions of different kinds of tasks to be learned. There are stories from the different companies, stories of the early years and the later years, success stories and failures or mistakes. As the directors and managers talked, they gave the impression that the experience of leaving behind the era of transnational concessions and of becoming part of a newly nationalized industry had been hard, even frightening, but exciting.

A common denominator emerged from the analysis of the interview results, and it took the form of a unifying dilemma that gave sense to the anecdotes, concepts, stories and issues that were discussed by the industry representatives and public officials who were interviewed. I have called that common denominator the central dilemma of multiple, contradictory demands from the industry’s relevant environments. Virtually all of the accounts puzzle about or illuminate this central dilemma. It also became clear that the dilemma was not entirely new in and after 1976; it had a history. But the changes in the three environments in the 1970s had made it more complex, pervasive and urgent.
The central dilemma

This was the nature of the central dilemma: in 1976 and the following years, the Venezuelan petroleum industry was facing conflicting and interrelated sets of issues across its three environments. The ways in which it responded to those issues, as it sought to resolve the conflicts, are at the core of the interview results.

One set of issues had to do with the international business world and the national political, economic and financial context, and it can be synthesized like this: how was the industry to manage itself efficiently in the face of the demands of these two complex and often contradictory environments?

On the one hand there was the market, increasingly uncertain in the middle range and, from 1982 on, constrained in the short range by the OPEC country production quotas. The market required flexibility to respond quickly to changing signals, while the OPEC quotas required discipline and careful design and management of the export package.

And on the other hand there was the Venezuelan political, financial and economic environment. The national economy depended heavily on the fiscal revenue generated by the sale of oil. The state was powerful, owing largely to its oil income, but decision processes were often rigid and complex. Few policy-makers had had experience with the problems of managing the oil business, although it is also true that
national oil policy was more advanced than in other areas of national life.

Political power was polarized between the two major parties, and they had different approaches to oil policy and to dealing with the industry. Acción Democrática was founded before Copei, developed its petroleum policy earlier and was better known within the industry.

**PDVSA Director 2:** There was a whole style under Betancourt and Leoni, and it was different under Caldera; they were somewhat nervous with him. They resented him. He was more ideological than practical, as AD is (Interview 14.2/5).

After 1980 these structural conditions in Venezuela were exacerbated by the reduction of fiscal revenues from oil, the severe shortage of foreign exchange, and the large and growing foreign debt. The changes of governing party—in 1979 from Acción Democrática to Copei and in 1984 from Copei to Acción Democrática—were both followed by changes in major and minor government bureaucrats, so that each time a new group was in power at many levels.

The changing national environment implied many things for oil industry management, especially new requests for information, control and, later, cash to see the government through a time of fiscal shortages. And public criticism of the national petroleum policy and the industry itself was growing.
The first set of issues, then, centers on the contradictory messages from the international market and the national political and economic environment. These issues are typical of state-owned enterprises, but the evidence from the interviews shows that the complexity facing the nationalized petroleum industry between 1976 and 1985 was even greater; there was a second set of issues that is not addressed in the literature, and it refers to the intracorporate environment of the industry.

In spite of the federative structure and the remarkable continuity of the managerial processes and the work force, nationalization imposed crucial intracorporate adjustments on the oil industry organization, and they are still happening. PDVSA had to define or negotiate its relations with the affiliates. Corporate finance and planning had to be created altogether. The Venezuelan oilmen who were assigned to PDVSA were operators who came from competing international concessionaires, and now they were all part of the same holding company and were expected to work as a corporate team. And all of this had to be achieved while the industry responded to the daily demands of the market and the nation.

The contradictory demands from the business world, the national environment and the new intracorporate arrangements resulted in unusual and confusing messages for industry directors and managers. Spending replaced scarcity. Optimism and then uncertainty about the international market required flexibility, but government wanted control.
Decisions were often diffuse and time-consuming. Former competitors were now part of the same organization, while the former holding companies were competitors. Production and sales policies had to be shaped to Venezuela’s oil reserves alone.

Executive careers were now to be made in Venezuela and without competition from foreign personnel, but the opportunities were limited to the Venezuelan industry; the market and the technology, however, were still international. Many more people were needed to expand the industry’s reserves and its production potential, but there were few precedents for incorporating and socializing large numbers of newcomers, least of all first-line and middle managers. The low profile strategy kept the Venezuelan public from learning about the industry and supporting it. And the cautious strategy of minimal change implied that the industry should become a state-owned enterprise in formal terms but should keep acting like a private one. At times it must have sounded like this: "Change—but don’t change."

I argue that the need to respond simultaneously to the multiple and often contradictory demands from the three environments is the central dilemma that the nationalized petroleum industry between 1976 and 1985. I hope to demonstrate that the literature about state-owned enterprises explains a part of that dilemma, but that it is insufficient to explain all of the changes of behavior observed in the
industry after nationalization or the process of becoming an enterprise of the state, under special circumstances. The growing turbulence and uncertainty in all the environments, the organizational legacies and constraints of institutional history, the specific structure of the nationalized industry and its rapid expansion must also be taken into account to understand the industry's responses between 1976 and 1985.

I will describe the dynamics of the organization's responses to the central dilemma in terms of organizational adaptative responses, observable patterns of adaptation and, at times, organizational inquiry into the adaptive process.

The transition to nationalization

Belief in stability is a means of maintaining stability, or at least the illusion of it. The more radical the prospective change, the more vigorous the defense—the more urgent the commitment to the stable state (Schon 1973:11).

The interviews that were conducted as part of the present study yielded rich data that illustrate how the Venezuelan petroleum industry, represented by its directors and managers, sought to respond to the changing international business environment, the changing national environment and the newly structured intracorporate environment between 1976 and 1985.
1974 and 1975 were transition years for the Venezuelan petroleum industry, as the industry realized, with a mixture of apprehension and anticipation, that nationalization was coming. Sectors of the society debated the nationalization project and the Congress passed the nationalization law. The state designed the structure and initial change strategies for the nationalization process and appointed the people who were to lead the industry into the future, as a state-owned enterprise.

Within this legal and political framework, the state set goals and strategies for the industry, as the organization charged with managing the production and distribution of Venezuela’s oil. A high-ranking official of the Ministry of Mines and Hydrocarbons during the transition years recalled this period with enthusiasm and pride. Other speakers referred to the transition, but this man’s narration is the most coherent and vivid statement.

Operational normality was the foremost goal of the Venezuelan state for the transition from the concessionaire regime to a state-owned petroleum industry. The nationalized industry was to make sure that production did not suffer and that the traditional overseas clients continued to trust the reliable supply of Venezuelan oil. Buyers should see that the nationalized industry would keep oil flowing out of Venezuela, above all up to the eastern seaboard of the United States (Interview 74.1/4).
The transnational companies should see that the new state-owned oil industry was a trustworthy organization. The industry was to keep its old clients and, at the same time, to break slowly with the transnational distribution network and gradually broaden its portfolio so it would become less vulnerable to the risks of an uncertain market. The watchwords for dealing with the international oil market as a nationalized industry included "no trauma, credibility and veracity" (Interview 74.1/11,13).

At home, the industry was to project an image of a management loyal to Venezuela. Some people thought that Venezuelan oilmen would continue to be loyal first of all to the multinationals. The new organization was therefore to prove that its managers were loyal above all to their own nation. Honesty and professional, non-political management were to be part of the image, and all in the service of an efficient industry run for the benefit of the Venezuelan nation. In other words, the nationalized oil industry was to be more than a completely Venezuelan organization; it was to be a model Venezuelan organization. In particular, it was to be different from the image of other Venezuelan state-owned enterprises, said to be politicized and therefore inefficient.

PDVSA had to be established and, with its affiliates, had to fill the vacuums left by the transnationals: exports, corporate finance, corporate and strategic planning, human resource planning and development, and research.
Ambitious expansion projects were to be designed and carried out. The industry was to explore for new reserves, refurbish old wells, increase production potential, and change and deepen the refining capacity to suit with projected demand at home and abroad. Research was to be emphasized.

The industry was to employ an explicit strategy of continuity in the service of change, to adapt to its new situation as a state-owned enterprise. Continuity of technology and markets were to be assured through the commercial and technical assistance agreements that were negotiated with the transnational companies during 1975 (Interview 74.1/3). The organization structure, a federation of vertically integrated companies that corresponded to the former concessionaires but under Venezuelan direction and management, made it possible to preserve the integrity of each former concessionaire and the variety among them (Interview 14.2/2-3).

The Venezuelan employees of the concessionaires, who made up well over ninety percent of the total personnel in 1975, were assured that after nationalization they would have identical working conditions. The idea was to attract them to the nationalized industry by giving them what they had valued in the transnational companies: order, stability and progressive improvement (Interview 74.1/13). This decision reflected the political will to keep the operation of the industry in the hands of its professional managers, and not to let it become politicized. The decision also recognized,
implicitly, how much the oilmen feared nationalization and that the state recognized them as essential to a successful nationalization.

A group of experienced Venezuelan oilmen, managers of several of the transnational concessionaires, also played a part in keeping on the Venezuelan personnel of the concessionaires to manage the industry under state ownership. In 1974, as the government began to speak more and more decisively about nationalization, a small group of managers began to worry that nationalization, or "advanced reversion", as it was then called, might be a political failure, or that the nationalized industry might become inefficient, as other state-owned enterprises were reputed to be: the telephone company, the waterworks, the office of social security. These three or four managers, worried that the oil employees were not being invited to participate in any of the decisions about nationalization, undertook to channel some industry participation into the nationalization process.

They formed a group called Agropet, Agrupación de Orientación Petrolera, and quickly recruited over a hundred members in the various oil companies and camps. Agropet's strategy was to advise the President of Venezuela and the Congress with regard to nationalization and the importance of preserving the merit system of promotions and employee benefits. Agropet was not included in the Presidential Commission to study oil reversion, but it was invited to make a
presentation to President Carlos Andrés Pérez in 1975; its representatives believe that Article 24 of the Nationalization Law, which provides for identical working conditions for industry employees after nationalization, resulted from Agropet's efforts; the former Ministry official agreed (Interview 74.1/12). Agropet was significant in another way: it was a new and exhilarating experience for industry employees to take a proactive stance with respect to the organization's future.

*Company Manager 10:* It was stimulating. It was a voice from within the industry (Interview 36.1/1-3).

Self-financing was central to the nationalization strategy. Unlike the ministries and the Corporación Venezolana del Petróleo, the nationalized industry would handle its own finances and so be allowed more degrees of freedom than other Venezuelan state-owned enterprises. The other side of that coin was fiscal responsibility—the paying of income taxes and royalties, just as the concessionaires had done.

Simplicity, practicality and dynamic process were keys to a successful transition.

*Former Ministry Official 1:* In Venezuela, we need very simple solutions; for example, (we) established a standard price per barrel for technological aid. For example, keeping our own markets... Nationalization was a dynamic process, a process to be perfected...It was so simple and so practical. ...And that's why it worked (Interview 74.1/12).
Political will and timing were important, too. As soon as President Carlos Andrés Pérez took office, the preparations for nationalization began at the highest political level. The former official said that the most important decisions regarding nationalization were made by a very small group headed by the President himself. Other levels and groups, including the Presidential Commission to study petroleum reversion, were consulted or informed. But another speaker (Interview 14.2/2) referred to the Commission as the author of the organization scheme. It is hard to know, from the interviews, the exact authorship of each component of the nationalization model, but the small, high-level political group (in Spanish, el cogollito) is a common mechanism for decision-making in Venezuela and the former official was close enough to the top to have seen it work. On balance, I would say that the small group he refers to was very important as an initiator of ideas and that it probably had the last word (before sending the proposals to Congress) over any other group.

Another ingredient of success, in this man's view, was the generous offer of outstanding Venezuelans to cooperate with the government on this national project. The government reciprocated by accepting that cooperation. Commissions were appointed to study specific issues—the energy policy, the oil fleet, the negotiations themselves, for example—and the commission members worked steadily and without pay throughout
1974 and 1975. This man recalls meeting every night for nine months, from five in the afternoon until eleven o’clock or midnight, to negotiate with the concessionaires.

*Former Ministry Official 1:* We met with Exxon and Shell, once a week each. On the other days, all of the others, all week! (Interview 74.1/11).

During 1975 the President of Venezuela appointed observers to the boards of directors of the major oil companies; they were to oversee the transition process and prepare for the eventual management of the nationalized industry.

A major issue in 1975 was how to check the inventories. A Canadian company was contacted, but it wanted two years to do the job, and the government was impatient to implement nationalization. So instead the Venezuelan government appointed a commission of Ministry professionals and employees from the transnationals themselves, the very people who would be using the equipment after nationalization. After all, "they were more interested than anyone in receiving good inventories from the transnational companies" (Interview 74.1/10). In Chapter VI, an oilman who was appointed to the inventory commission describes how hard it was to represent both his concessionaire and the nation during that year of transition.

Another part of the transition strategy was to assure continued technical excellence in the Ministry of Mines and Hydrocarbons. This would not be easy, because "at the time
of nationalization, there was an emotional reaction in the
Ministry, great excitement", a product of the moment
(Interview 74.1/10). A Ministry technician agreed that the
Ministry was unusually free of politicking (politiquería) and
contrasted it to the telephone company, where "everyone has a
mark on his forehead saying what party he belongs to,"
(Interview 79.2/1). The Ministry of Mines, at least until
1980, was often singled out (with the Corporación Venezolana
de Guayana) as an unusually professional unit of the public
administration, and I think this can be accepted. Chapter
VII analyzes some of the difficult adjustments between the
Ministry and the industry after nationalization.

In sum, these were the major goals to be achieved by the
Venezuelan petroleum industry during the transition from the
concessionaire regime to nationalization: operational
normality and international credibility; expanded reserves
and production potential, and changes in the refining
patterns; gradual delinking from the transnational
distribution channels and a broader portfolio; the
establishment of PDVSA and filling of the vacuums left by the
transnational holding companies; and the creation of an image
in Venezuela of a model Venezuelan organization. Some were
new goals and others were old for the Venezuelan petroleum
industry but new for the nationalized organization. They
were all to be achieved through a strategy of continuity in
the service of change.
The oil industry at this critical moment needed the experience of veteran oilmen to keep an established industry running smoothly, but it also needed new responses, new ideas, new ways of thinking and acting. Who was to lead the industry into the future?

The change process was clearly to be led by Venezuelans. Even though the transnational companies were contracted for sales, technology and specific services, the boards of directors of PDVSA and its affiliates were to be composed of Venezuelans. Almost every account of this period indicates that the newly nationalized industry was in the hands of Venezuelan management from the start.

But which Venezuelans? There was to be a combination of insiders and outsiders, of oilmen and non-oilmen, and this too was decided at the highest political level (Interview 74.1/14). The nationalization process would be led by prestigious Venezuelans who were relative outsiders to the actual operation of the industry and who could, it was believed, command loyalty from the industry itself and marshal consensus among powerful sectors of the Venezuelan society. The consensus was deemed necessary to protect the petroleum industry from the political incursions that plague state-owned petroleum industries in other countries; Pemex in Mexico is often mentioned as an example.

Two major appointments reflect the above decision. In 1974, Valentín Hernández, the first petroleum engineer to graduate
in Venezuela, was appointed Minister of Mines and Hydrocarbons. A private entrepreneur and a diplomat, he had been out of Venezuela for sixteen years when he was designated as Minister of Mines. And in 1975, General Rafael Alfonzo Ravard was appointed as the first President of PDVSA. He had had a successful experience in the public administration, most remarkably as President of the Corporación Venezolana de Guayana, where for fifteen years he achieved support from both major political parties to carry out the nation’s most ambitious regional and industrial development project. As a military man, he was credited with discipline. He enjoyed prestige in international financial circles as an honest man and a good administrator, and the government leaders believed he would be highly committed to the job (Interview 74.1/14).

Why not appoint an oilman as the first President of PDVSA? There were highly qualified and well-respected Venezuelans who might have been chosen, but the reasoning was that oil executives were, in the eyes of many Venezuelans, still associated with the transnational companies, whereas the top managers of the state-owned Corporación Venezolana del Petróleo were not so experienced as those of the major transnationals. Besides, an oilman from one company might find it hard, in the first years of the nationalized industry, to command loyalty from oilmen of other companies, former competitors. So it was decided to appoint a prestigious, qualified outsider to lead the industry into the
period of nationalization; after a prudential time, when some stability had been achieved, one of the experienced Venezuelan oilmen might be appointed second President of PDVSA (Interview 74.1/14-15).

The other directors of the first PDVSA board, most of them relative outsiders to the industry, included private businessmen and professionals, several of whom had had experience in the petroleum industry itself, in the Ministry or in the related private sector. There was a representative from labor. Some of these men were close to Acción Democrática, the governing party at that time, and one was close to Copei. Only one of the thirteen directors and deputy directors went to the PDVSA board directly from the industry (Coronel 1983).

Several of the insiders, the Venezuelan oilmen who were to lead the newly nationalized petroleum industry at the operational level, had been on the concessionaire boards and now became presidents or directors of the fourteen PDVSA subsidiaries; still others were promoted from management to the subsidiary boards. There were also Venezuelan oilmen who had been in the service of the international companies overseas, some of whom returned to join the PDVSA staff or the boards of the newly nationalized industry. Functional coordinators at PDVSA were recruited from the operating affiliates. Several people moved to the industry from the Ministry of Mines; these were not altogether insiders but, as members of "the oil sector", neither were they outsiders.
The goals, the strategies and the leaders for the transition of the Venezuelan petroleum industry into nationalization were in large measure designed or chosen by representatives of the state, with occasional input from the industry organization itself. Now, how did the industry respond—what did it do, between 1976 and 1985, and how were its actions different from those of the years before nationalization? The first priority was the international market.
VI. RESPONDING TO THE CHANGING INTERNATIONAL BUSINESS ENVIRONMENT

The Venezuelan petroleum industry has always been an international business. Venezuela produces much more oil than it consumes, and this will be true for years to come. To survive, then, the industry must adapt successfully to the international business environment. But the interview data show how, in the years after 1976, the demands of the international market were compounded by demands from the Venezuelan state and from the intracorporate environment, and responses that were appropriate or adaptive for one environment were often inappropriate or maladaptive for one or both of the others. The pattern of the demands also changed over the years. The euphoric late 1970s were years of rapid expansion, while the sober 1980s were a time of looking for ways to assure volumes of sales in an uncertain market, and each period therefore elicited different kinds of organizational responses.

*Gearing up*

Expansion was a mandate from the state that was carried out by the industry in view of the previous contraction and the optimistic forecasts of world oil demand. Long-range maintenance, increasing production potential, exploration and deeper refining capacity were all undertaken almost simultaneously as the industry geared up for the future. Expansion was a change of direction for an industry that had been cultivating a culture of scarcity for at least fifteen
years, and managers who had prided themselves on watching every penny were now to told to "spend, spend, spend" as the future opened up. By capitalizing on other cultural qualities—discipline, morale, teamwork—the organization was able to put old learning at the service of the newly nationalized and rapidly expanding industry. During these years considerable autonomy was left to the industry and, within it, to the affiliates themselves. The state stood back, PDVSA deferred wherever possible to its experienced subsidiaries, and expansion went ahead. Nonetheless, the state did want the industry to buy Venezuelan inputs, and this proved to be a thorn for the former transnational operators, who were used to buying what was needed from large suppliers overseas. The situation was further complicated by the boom in exploration and drilling the world over, which created scarcities in the labor and product markets. Despite these difficulties, expansion of reserves and production potential were achieved, while the refining patterns were deepend to suit the changing market at home and abroad.

Long-range maintenance was a crucial response to changes in two environments. The expectation of a growing market meant that production potential should be kept high. State ownership gave the industry a longer future, well beyond 1983. 1975, when the government decided that the concessionaires' inventories would be checked by a commission of Ministry officials and concessionaire employees, was a
painful year for maintenance managers. There were abrupt changes of criteria, from the short to the long range, and there were dilemmas of loyalty. A former operations manager, who was part of the commission, recalled the transition as a time of anxiety, nostalgia and excitement (Interview 65.1); his account is presented in Annex VI-1. The beauty of this interview is that the speaker recalled the emotions that accompanied the technical and organizational tasks of checking inventories and starting to expand.

In 1975 he was still tied to the past, working with the transnational company where he had been a loyal employee for over twenty years and had been treated with confidence and given authority. But he was working hard for the future with an unknown, still unborn nationalized industry, and he was a Venezuelan citizen whose government too had shown confidence in him and allowed him to work with technical criteria. So he wanted to spend as little as possible, for his company of the past and present, and spend well for the future industry. This was "the most uncomfortable position you can imagine".

He alleged at the beginning of the interview that the experience of nationalization was not traumatic in any way; they led up to it "like a student leading to a degree". But his recollections throughout the interview suggest that if indeed the nationalization process was orderly and cautious, the changes were substantial and apprehension was real and deep. "As nationalization came closer, we began to feel worried. What will happen?"
The low budgets in 1975 and early 1976 made a situation "like a war". Changing the company emblems "in twenty-four hours" created mixed feelings, some nostalgia and "a nice feeling, too, of something important that left." The speaker was in tears as he remembered it.

The bosses, offices, secretaries would be the same, "...but the owner would change. And that was the serious problem. Nationalization." Starting to expand after nationalization was a change of direction, from scarcity to growth, and nothing in the years of contraction had prepared them for it. It took about three years. The first year "we were more or less lost". Then came "an avalanche of starting-up activities". It was "a kind of explosion... We never thought the growth would be so great".

The strategy of continuity in the service of change was, in this case, confusing and effective both. It was confusing to spend for a bright future when the old pattern was to save every penny in long-range maintenance. But continuity was helpful in motivating managers. The speaker found that managers in 1976 were enormously motivated, and he linked the motivation to organizational characteristics from the past. "Our manager was the same as before nationalization. The discipline, the confidence were there. We didn't get a raise, nor a bonus, no overtime. It was our work. It was the rules of the game". These are cultural elements, consonant with the strategy of continuity, and they were, at
this moment, contributing factors to what I think can be called a successful transition.

This interview is a personal story, but there is evidence in other interviews—though not so vividly presented—that we can infer that the emotion, the loyalty dilemmas, the apprehension, the culture of commitment, the persistence of the same staff, all these were fairly common organizational elements of the nationalization process. And as it is told, story reflects a successful transition, a challenge well met, a major commitment, but something deeper and sharper than a gradual change with no trauma. This point is relevant to an understanding of the next ten years. One of the espoused mottos was, "No trauma", and the evidence shows that the industry kept producing, expanded and held onto many of its old characteristics. But state ownership and the exit of the former concessionaires were deep organizational changes, and there is evidence that company managers had not, even in 1985, made explicit the nature of that change, nor come to terms with it.

Massive efforts were required to recover production potential, after the years of contracted investment and high production levels before nationalization, and all the while it got harder to get oil out of the ground, because the fields were aging. Skilled labor was hard to find because oil companies were drilling all over the world.
The evidence shows that this situation provided unique opportunities to create and learn, to use existing resources in different ways, to break down—at least temporarily—barriers of tradition. The former operations manager drew an example of an innovation, a drill-school, to train recently graduated engineers to be tool-pushers, that arose from the scarcity of qualified labor. The evidence is presented in detail in Annex VI-2.

The concessionaires had put private companies out of business during the years before nationalization, and the newly nationalized industry had to "rescue those who were there" (Interview 65.1/6). When they realized they didn’t have tool-pushers, highly experienced skilled laborers who work at the front of the drilling rig, they began to bring them in from the United States, "fifteen days in, fifteen out, at five hundred dollars a day!", for "the worst ones,...those who didn’t get work in the States, adventurers, not the best, at first." So the company generated a drill-school (taladro escuela), to train tool-pushers in two years, with the simplest drilling methods.

Former operations manager 22: You know, drilling people are usually the roughest, because of the kind of work. We would take the best one in human relations. We wouldn't ask the drill-school to produce so much, because it was teaching. We would take engineers (recent Venezuelan graduates from the Universidad del Zulia) and put them to work as laborers, carrying pipes (Interview 65.2/1-3).
If there were ten petroleum engineers from the same graduating class, five would go the usual road and five would be trained as tool-pushers, learning the whole operation and working as laborers for a month or so. Then they would go to the regular drills and spend two weeks there, and return at the next level, as helper. Eventually all of the drills were schools.

The young engineers reacted "wonderfully. We never thought the result would be so good." Working as drillers, as manual laborers rather than as engineers, they formed "a kind of brotherhood". Later, when the emergency passed, their skills were applied to engineering tasks, like selection of equipment.

Many observers authors attest to the wall in Venezuela between intellectual and manual enterprises: the architect who shuns the construction site, the university researcher who refuses to type his own drafts, the bureaucrat who simply lets the telephone ring on, unanswered, if the receptionist is sick. The experiment with the drill-school for tool-pushers came as a welcome surprise, then, which shows that the barriers between levels of manpower are not impermeable and that there are untapped learning and organizational resources. In short, this is an example of the kind of managerial autonomy and innovation that it might be hoped would result from nationalization.
In terms of the conceptual framework for this study, this is an adaptive response to the international market which had generated contradictory needs: the optimism required expansion, but the expansion created shortages in the factor markets, in the case, the markets for skilled labor. And the optimism had been an important ingredient in the decision to nationalize before 1983--but once nationalized, the industry had to compete with the multinationals for skilled labor. The response in this case was an innovation.

It would be interesting, but it is beyond the scope of this study, to discover more about the source of the idea. The former operations manager suggested it had already been tried in another company, a newer company than his own. It was suggested in informal conversations, but I could not check it out, that this newer company, less tied by tradition and systems, innovated more than the others. If so, this would suggest a pattern of adaptation from newer to older companies.

The dilemma of multiple and incompatible objectives from the state, typical of state-owned enterprises, showed up at this time. The state wanted the nationalized petroleum industry to expand quickly (for the market) and to buy Venezuelan inputs wherever possible (to enhance national business). This put industry managers in a bind. The former operations manager--and his complaints were echoed in other interviews--found it wasn't so easy to "buy Venezuelan", at least not
during the years of rapid expansion after nationalization, yet government was watching for it. Control and expansion were incompatible.

Former Operations Manager 22: Of course there has to be control. Efficiency and control can go together during normality. But you get stuck if it's previous control during expansion. ... Decree 1234 (to buy Venezuelan inputs) slowed everything. ... We couldn't buy coils because there was a man who made exhaust pipes and tubes for air conditioning. It isn't the same, though. So we had to wait and not buy coils until he would agree, or make them (Interview 65.1/10-11).

The Ministry of Hacienda was the controlling agent for Decree 1234, and the process was cumbersome. If steel sheets had to be imported to fix a barge, the manager had to have a letter from Sidor (the state-owned steel company) saying they didn't have it. But in this case Sidor didn't provide the letter, because they imported those sheets, and precious time was lost before they were finally provided.

Former Operations Manager 22: ... they put me toward the end of the line, because I didn't want many... All of this made the work complex. Another example: when I went to a foreign firm, it had to be associated with a Venezuelan firm, and that took time; it was a mess. You didn't have the same freedom you had before (Interview 65.1/10-11).

These examples, with their details, are convincing and also humorous, as state-owned enterprise (oil) is pitted
against state-owned enterprise (steel) in an effort to follow the state's injunction to its state-owned enterprises to be economically productive as business firms and to expand the nation's industrial base.

It must have been harrowing to be a manager charged with expanding quickly and with using Venezuelan inputs wherever possible—inputs that might not fit specifications, or might not be available in the quantity needed, or might not be ready in time, or might be assigned first to other users. Or might not work; another speaker recalled moments of exasperation at the Corporación Venezolana del Petróleo when the threads on Venezuelan-made pipes were defective (Interview 60).

In Chapter VII, below, a government planner tells what it was like on the other side of the fence, as he represented the national executive when the sectors who "sell Venezuelan" complained that the oil industry was not doing its part.

But the former operations manager found that the oil industry was in the worst of two worlds.

Former Operations Manager 22: You see, the Ministry of Public Works doesn't need a permit to throw down a highway... INOS doesn't need permits, nor Canalizaciones. They are the government. But we have to have all of the permits still.

We are a state-owned enterprise, but we aren't. It is in the worst of the worlds. You aren't a musiú (foreigner), but you
aren't a Venezuelan, either. The Colegio de Ingenieros causes problems, we are in the middle. Many people on the outside don't see that we are a nationalized enterprise. It is going to become more and more complex. What is your identity? You don't know (Interview 65.1/10-11).

Government control and the conflict of multiple objectives were even harder to bear because the speaker could recall what it was like to be a private enterprise that could buy anywhere in the world. The conflict of objectives overlapped with the sense of foreignness and suspicion with which other Venezuelans had often regarded the oil industry, so industry managers found they were neither fish nor fowl, neither musiú nor Venezuelan. Many people on the outside didn't perceive the nationalized industry as a Venezuelan enterprise, and this problem of the public image became a priority issue in the 1980s, one which came up over and over in the interviews.

But it was more than the public image. The industry people themselves were wondering who they were. In 1985 they were still not sure, and I argue that this became an organizational problem in adapting to the typical dilemmas of state-owned enterprises or in developing new solutions for managing them.
A retired oil company director, trained as a geologist, was still amazed at what he saw as a successful comeback in exploration after nationalization. His detailed account is presented in Annex VI-3.

The expanding international market and optimistic outlook meant that Venezuela should increase its proved reserves. The increasing prices meant that the Orinoco Oil Belt reserves, which had been studied in some measure before the 1970s, now looked more commercial.

When the transnational companies had stopped exploring in response to the Venezuelan government's policy of "no more concessions", in the early 1960s, they had dismantled the exploration teams. To start up again, the industry used a policy of upgrading managers quickly, of building Venezuelan expertise, of reinforcing organizational values and of using outside help only when necessary.

There were geologists "a dime a dozen", but the veterans had been out of exploring for decades and the younger people had had no direct experience. The industry responded by bringing up the inexperienced people to managerial positions in a very short time, "and it worked". Inertia was one ingredient for success, "a snowball rolling downhill"—the pressure from the state and the market to expand. But other organizational characteristics made it possible for exploration to make a comeback: "a lot of hard and long and instilled corporate discipline in the hands of people who had
essentially run or helped run the company, or become the top people, and they perpetrated the kinds of controls and morale that had always been used, and the bosses used it, too". These are organizational qualities, they are culture in the sense Schein proposes, they are rooted in the past and they suggest that not only did nationalization as a process continue for years after 1976; it had in important ways begun long before 1976. This interpretation echoes that of the former operations manager—and they are from different companies—who thought the motivation to work after nationalization was huge and who attributed it in large measure to the fact that the managers were the same as before nationalization, and "the discipline, the confidence" were there. Outside advice was important, but it was not at the core of the exploration comeback. And proven reserves grew from eighteen to twenty-nine billion barrels in traditional areas alone between 1976 and 1985; gas reserves also increased and the discoveries in the Orinoco Oil Belt were immense.

Major changes in the refining patterns were undertaken after nationalization, not to increase refining capacity but to deepen it and adapt it to the changing national and international markets. During the early 1970s, Venezuela sold crude and fuel oil, because that was the market available, "and someone had to supply it—unless you wanted to keep the oil in the ground, which might not have been a bad idea" (Interview 59.1/6). Then Venezuela's
economy began to pick up, so demand increased and the industry was, besides, producing more light and medium crudes, as a proportion of total production, than the reserve share in its reserves. Those were the incentives for the changes in the refining patterns. "That happened at the TIME of nationalization, but not because of it" (Interview 59.1/6).

PDVSA Director 1: When we produced more than three million barrels a day, it was okay. Light crudes went in and fuel oil came out, which went to the United States for the East Coast, and this was fine. We also produced a little gas for the local market.

What has changed is that we have added to this capacity secondary refining. It goes into a second process which produces not fuel oil but turns it into gasoline, naphtha, and so on. That capacity, which didn't exist, now is nine hundred thousand barrels a day. So we have spent a lot. But we have made the refineries more complex. Fuel oil in the States is now being used much less because of the substitution in the electric plants and in industry (Interview 38.1/5).

But the new refining capacity, designed to suit the market, had required government approval of large investment funds; financial autonomy was not absolute and so great an investment would not have been undertaken without explicit approval from the government. During the mid-1970s this was
congruent with the government's expansion strategy, and in 1977 the projects were begun. Since they were large and complex, in the nature of oil investments, they took five or six years to mature. And in 1979, while the refineries were still under way, the industry had an unpleasant shock: the newly-inaugurated government questioned the on-going projects. "Government approval" had applied to the incumbent government only. Now there was enormous pressure to cancel the projects. "The reasoning was, why make a project with Exxon? Also, it was going to be experimental, and why should we experiment?" (Interview 38.1/6). The PDVSA Director found that the pressures from the national environment were out of tune with the nature of decisions in the oil business--large, long-term investments--and with the optimistic oil market outlook of the late 1970s.

*PDVSA Director*: There are great economic and political pressures that don't understand that we can't change so fast, and that our reason for existing can't change so much; the pressures can become very strong. How do we maintain certain stability of action that doesn't put the long-range stability in jeopardy? (Interview 38.1/5).

In fact the refining projects went ahead, although he did not detail the process that led to reapproval of the projects; this man believed that if the industry hadn't gone ahead with this project, Venezuela would in the 1980s have had to import gasoline and still overproducing fuel oil. "I think it was
one of the best decisions that we have made" (Interview 38.1/6).

This illustration of part of the central dilemma--multiple and contradicting demands from the industry's environments--is well summed up in the sentence: "How do we maintain certain stability of action that doesn't put the long-range stability in jeopardy?" The dilemma is played out and discussed in Chapter VII, where this man's view is contrasted to that of a high-ranking government planner who thought that the oil industry had overestimated its own needs and ignored those of other national sectors.

There were also intracorporate difficulties as the organization began to manage the construction of the new projects. Before nationalization, the transnationals had contracted project management to major, traditional companies and had a wide experience in setting up teams, contracting, estimating costs and managing construction. Little of this experience had been bequeathed to the nationalized industry and Venezuelan engineering firms had little experience of such large jobs. Project control was therefore difficult. The industry responded by searching for companies like Pathfinder; there were some mistakes, especially in the estimates of time and cost. The final products, in one view, were quality installations, but they took longer than expected and they were more expensive. Above all the infrastructure—houses, commissaries, electricity—lagged behind the projects, a combination of
lack of experience and the government's efforts to control 
(Interview 65.1/9-10). My own opinion is that it was also a 
result of the fact that Venezuela in these years was booming 
and building everywhere. In the Guayana region, for example, 
the steel mill was trying to quadruple its capacity and a 
mammoth aluminum mill was under construction, and there were 
shortages of construction inputs of every kind, from cement 
to unskilled labor.

But of course, long-range maintenance, exploration, increased 
production potential and modified refining patterns made 
sense only as they enhanced the success of sales. Most of 
these were exports.

Exports--the early years

*Retired Oil Company Director S*: *...the crucial thing was the market. How strong, how weak, how strong and how weak. Particularly the main product leaving Venezuela, which was fuel oil (Interview 59.1/8).*

International sales was a challenge for the newly 
nationalized industry. In 1975 the first PDVSA Board 
appointed a commission to design and negotiate the commercial 
and technological agreements with the transnational 
companies, as part of the strategy of operational normality.

The group that worked on the commercial agreements included 
relative outsiders--government officials--and insiders-- 
Venezuelan traders from the transnational companies, in an
informal capacity. The officials included the Venezuelan governor in OPEC, the Vice-Minister of Mines, the Ministro Consejero (official in charge of the oil desk) at the Venezuelan Embassy in Washington, the Director of Petroleum Economics from the Ministry and a technical official from Petroleum Economics, who acted as secretary. These officials were joined by two former employees of Creole—one who was retired and another who was working for a private Venezuelan company, which gave him leave to cooperate with PDVSA during late 1975. In 1976, two experienced traders were added to the PDVSA Trading and Supply group, one from Lagoven (formerly from Creole) and the other from Maraven (formerly from Shell) (Interview 82.1/2-4,7-8). A third man, formerly in short-range planning in Mobil, went to PDVSA from LLanoven (Interview 83.1/1). During 1975, however, these three were still employees of the transnationals, so they could cooperate only informally with the commission (Interview 81.1/1).

The government negotiating team for the nationalization agreement—Valentín Hernández, Rafael Alfonzo Ravard and Julio César Arreaza—set the guidelines for this commission. Given the momentary softening of the market after 1974, this meant that export volumes should be assured, to keep the industry going, and that most exports should at first go out through the transnationals, largely Exxon and Shell. Here, as in all of its endeavors, the negotiating team looked for security, a "very reasonable approach" (Interview 59.1/3).
The commission worked in the Creole building, and the actual negotiations were held at the Ministry of Mines. Export volumes were negotiated directly with the transnational holding companies, and the goal was to have contracts or letters of intent ready for January 1, 1976. Mobil was the first to sign and Shell and Creole followed suit. PDVSA signed all the contracts for the industry and then assigned them to the companies. The contracts were signed for two years, and then for two more. In the early years, prices were discussed with the buyers a month or so in advance, but after 1979 PDVSA set its prices unilaterally three days in advance (Interview 82.1/6-8). Credit terms were adjusted according to the market.

Despite a slight drop in sales early in 1976, operational normality was achieved, although at first "we were drowning in oil. Luckily it was a cold winter and we could lower the inventories" (Interview 82.1/8).

Annex VI-4 presents a detailed account of the early years of international sales, based on data from interviews with a retired oil executive, two PDVSA Directors and two industry managers in supply and trading. The actions described were above all responses to the business environment. They were part of the search for stability of export volumes as the industry sought to achieve profitability in the longer run. But the industry's responses to the market were conditioned in some measure by the fact of being a state-owned enterprise
and, even more, by the intracorporate environment: the strength of organizational knowledge, the culture of rivalry and the variety of experiences provided by the several operators, the fact of no longer belonging to the transnational companies, and the specific nature of the new intracorporate structure. Two factors—the legal break with the major transnationals, and the vertically integrated, federative structure under a new holding company—were part of the nationalization process, but they are not identical to the fact of becoming a state-owned enterprise.

"Exports was new", said the retired oil company director. But on a closer look, this was not altogether true. Even in those Venezuelan concessionaires that had not exported directly, principal among them Creole, there were Venezuelan managers who had been on the international side of the business before nationalization, managers who stayed on to work for the nationalized industry. And Shell Venezuela had exported directly, with far fewer controls from Shell International than Creole had had from Exxon. The Corporación Venezolana del Petróleo had exported on a small scale, but no interviews were held with former CVP traders. So even though "exports was new", in comparison with exploration and production, there was export experience in the newly nationalized industry.

And the decision to sign commercial agreements with the transnational companies who had held concessions in Venezuela, a decision congruent with the strategy of
continuity in the service of change, seems to have served its purpose. Right from the beginning a steady flow of oil kept leaving Venezuela and payments were prompt. One ingredient of success appears to have been simplicity of destination and payment mechanism. Besides, the clients were good payers.

The negotiation and implementation of commercial agreements for the first years after nationalization were responses of the new state-owned enterprise, but I argue that they are not so much typical state-owned enterprise problems as they are problems of a new owner, now outside the major distribution network, with a monopoly on the petroleum reserves and industry inside Venezuela but with no alternative reserves or refineries abroad. A new, private independent company, for instance, might have faced similar distribution problems and might have responded in the same way. On the other hand, it is conceivable that the state-owned industry could explore and produce outside Venezuela's borders. As a state-owned enterprise it might find this politically hard to do—as Vernon says, it simply looks to the opposition like exporting capital and jobs—but it would not be impossible.

In the early years of international sales, the Venezuelan state, represented in the President of Venezuela and the Minister of Mines and other Ministry officials, backed the industry in the strategy of assuring export volumes. In the interviews cited above, the speakers did not refer to opposition from the state in this endeavor. There may have
been public and private criticism of the commercial agreements, but it did not interrupt proceedings.

Gradual diversification of clients was another response to the instability in the international market, and in fact the number of clients had doubled by 1985, so there was greater spread as less oil went out through the transnational networks. Yet diversification of clients was a qualified success, said the retired company director; some of the "new" clients had been final clients of the transnationals, so neither was this entirely new. It did, however, reduce the potential danger of losing a major client at one blow.

It is safe to say that a major reason for diversifying clients was that the industry was now a state-owned enterprise and now, as before nationalization, the major source of income for the Venezuelan government, a strategic industry. But again, the search to reduce vulnerability was not strictly a question of being a state-owned enterprise; it was also a matter of no longer belonging to the international network of the seven majors. This is a problem that may be common to petroleum state-owned enterprises when they are nationalized, but it arises above all from being dependent upon a limited set of reserves, from not belonging to the major, traditional transnational network and from providing a crucial part of government income. It can be qualified as an adaptive response that was successful. We do not know exactly what the affiliates did to achieve greater spread, to adapt; we do know that the arrangements of three sellers from one
holding company was unusually and that PDVSA stood back and allowed the companies to take initiatives.

The efforts to coordinate the affiliates' trading and supply activities and to build PDVSA's strength in this area were also industry responses to the world oil market, a "market of perceptions" where lack of coordination among sellers can create the sensation among buyers that the industry is in trouble, so it might do to wait and see before buying. But the need to coordinate arose from the new structure of the industry, a structure wherein former competitors were now parts of one corporation. This new structure was a part of the nationalization model that the Venezuelan state adopted, but it was not in essence a state-owned enterprise model. Other organizational structures were considered and could have been selected: horizontal integration, with one company for each of the major functions, or the creation of one large vertically integrated company. Even within the existing model, it would have been possible to center sales in PDVSA from the first. All of these choices would have required some kind of coordination, certainly, but the point is that the need to coordinate the PDVSA affiliates' trading and supply activities was not a state-owned enterprise issue but instead the response of a new owner with a specific organizational structure and a history of competition and rivalry that were hard to forget. Indeed, the strategy of continuity was reflected in the new structure, wherein the new subsidiaries were direct descendants of the former
concessionaires, and it implied that the separate operators might, at least for a time, retain older ways of behaving.

Coordinating the affiliates and building PDVSA were new tasks for the Venezuelan petroleum industry, but the transnational companies had faced similar tasks among countries, and managers with international experience had organizational experience to bring to bear on the new situation.

The international sales coordination in PDVSA was different from finance, corporate planning and human resources, as they are described in Chapter VIII, and it was built up differently. Exports was "more delicate" and more was at stake, perhaps, at least in the short term. The operators produced different products from one another and therefore dealt in different markets that might be more or less advantageous, so some companies might look more efficient than the others. And the initiative for exports was left in the affiliates from the beginning. All of this made PDVSA's job in this area especially difficult.

The idea was that PDVSA would let the operating affiliates buy and sell, which made them profit centers. This was an unusual model for a state-owned company and it was new, at least for Lagoven. PDVSA Director 2 did not know of "any oil enterprise, private or state, that works as we do--three sellers--that wouldn't happen." At first, PDVSA stayed in the background in the area of trading and supply and did not use its power--it had the last word, but it seldom used it.
Trading and supply activities started in the affiliates, and PDVSA served as arbiter and coordinator, watching over "the general interest", a concept inherited from Exxon. Sharing space on tankers, or sending one affiliate’s customer to another affiliate to take liftings and so release storage space—these might be PDVSA’s recommendations in favor of the general interest. PDVSA followed the Exxon tradition further and structured a committee to coordinate the affiliates’ initiatives.

In PDVSA Director 12’s view, however, communication among the affiliates required more than a structure; what was needed was a conscious organizational process. This started in the PDVSA sales coordination and it was a process of "sitting people down and discussing". It was hard, because the operators wanted to keep on doing as they had always done. The relation among PDVSA and the affiliates or subsidiaries was "an interactive process" and company trading and supply managers communicated directly, sometimes "surprisingly well".

Building PDVSA without weakening the affiliates was certainly a response to the new organizational structure, to the need imposed by the organizational model of several vertically integrated companies under a new holding company. And the evidence suggests that indeed PDVSA got stronger over time in the area of supply and trading. But PDVSA Director 2 and the retired company director both thought that PDVSA had waited
too long to exercise its power. For example, the subsidiaries would not standardize shipping contracts or pipelines until they were convinced there was no more money. Expenses went up and resulted in criticism of the industry from the Venezuelan public, the Ministry and the Congress. There was a need to divide the market, and it took too long.

But PDVSA Director 12 disagreed. He thought that PDVSA could not have imposed its potential strength any sooner. It isn't easy just to "be participative". At first, he recalled, the operating affiliates used to go over the head of the PDVSA coordinator to the President of PDVSA with any complaint. PDVSA had to build its strength slowly, through a process of "constantly discussing and coming to agreements. Sometimes you get mad and fight but mostly it has worked, with ups and downs." He thought this was not learning, but adaptation to a changing world.

In any case, PDVSA's adaptive response—even the two critics did not object to the general direction of the response but to its speed—was not typical state-owned enterprise behavior but the behavior of a newly structured organization taking into account its own history or culture of rivalry and reliable supply.

Transfer pricing was also a requirement of the new organizational arrangements—whereby several operators sold their production to the three exporting operators—rather than a response to the fact that the industry was now a state-
owned enterprise or that the market was increasingly uncertain. Transfer pricing was a problem that each of the transnationals had faced among affiliates in different countries, but it was new for the Venezuelan petroleum industry. And the decision to publish only a consolidated PDVSA financial statement, but no affiliate or subsidiary accounts, was also part of the response to the new structure, a way of avoiding unhealthy competition among the affiliates. It may have eliminated one source of rivalry, but the evidence shows that rivalry persisted and it was hard to get the companies to share pipelines or tanker space, for instance. This too is an organizational or intracorporate difficulty, not a typical state-owned enterprise problem.

Increased documentation for the government was a problem common to all of the affiliates, and this, of all the actions described with reference to the first years of exports, was a typical state-owned enterprise problem, a problem of control and autonomy and of being accountable to multiple and diffuse decision centers in the government: Contraloría, the Ministry of Mines, Hacienda, Salvaguarda, "and anyone else who asked." Yet even this was not entirely new: Creole, at least, had had to report in detail to Exxon. Shell had been "more maverick", while the Corporación Venezolana del Petróleo had certainly had experience of reporting to the Venezuelan state.

In the first years of nationalization, then, the central dilemma of competing demands from the different environments
was predominantly between the market and the intracorporate environment, which had to undertake new tasks—direct sales and the search for new clients, communication and coordination among sister companies on Venezuelan soil—while it was still inhibited from cooperation by the cultural history of rivalry, but also beneficiary of the variety of experiences provided by the several affiliates—trading in Shell, committees and the idea of the general interest from Exxon, and so on. In these years the state does not appear to have posed major problems in the area of international sales, beyond asking for documentation; in the early 1980s, however, when the industry began to implement a strategy of international integration downstream, it met serious opposition from sectors of the national environment.

In the 1970s, the new responses to the market started from the very top, when the three-man negotiating team for nationalization issued guidelines to draw up and sign commercial agreements. These were designed in 1975 by a relatively small group, all of whom had been in the oil sector, some in the government and others who were still in the service of the concessionaires when they provided informal advice on the negotiations. Once the industry was structured as a state-owned enterprise, several of the men who had worked on the commercial agreements were placed in key posts in trading and supply, in PDVSA and the affiliates. It is not clear where the idea came from to leave sales in the affiliates—the Commission's report had recommended a
centralized sales enterprise—but the evidence implies that PDVSA did not oppose it but instead worked to build its own strength over time while enhancing where possible communication and participation among the affiliates. The question of where to place international marketing was still alive in 1985, when "Some people think it should be centralized. Others disagree. This has to be looked at again."

Exports after 1980—the Veba case

Around 1980 the Venezuelan petroleum industry began to explore a new international marketing strategy, the strategy of vertical integration, downstream. The idea was to buy refineries abroad, on a joint venture basis with foreign companies, in an effort to assure foreign markets for Venezuela's crudes and to acquire international technology. The strategy faced serious opposition in the Congress and the press; many people saw it as a return to domination by foreign companies.

In 1985 the story of this effort, "the Veba case", was presented by a PDVSA Director to a group of industry managers as part of a seminar on analysis of the industry's environment, and after the presentation the managers discussed the case. The presentation and the discussion are presented in Annex VI-4, in detail.
The Veba case illustrates industry's central dilemma after nationalization, of trying to respond to conflicting demands from its environments. In the Veba case the conflict was between the international business environment, whose uncertainty imposed the need for risk-sharing closer to the final consumer, and the national political environment, which wanted to keep jobs and capital on national territory. And when the industry responded to the market by taking steps toward joint ventures with foreign refineries, it failed to estimate the resistance of the new owner to the strategy and was not able to convince large sectors of the public that the industry was proceeding in the nation's best interests. Part of that failure, I argue, was owing to ignorance about the variety and extent of national political life and this was a specific characteristic of the intracorporate environment of the nationalized industry, a legacy from the past of private-ness.

So the Veba case illustrates the central dilemma of the Venezuelan petroleum industry after nationalization, the dilemma of how to respond to diverging pulls from the organization's different environments. The case supports the notion that the central dilemma is in great measure (but not entirely) a dilemma about becoming a state-owned enterprise. Specifically, the Veba case illustrates the dilemma of state control and industry autonomy; from the point of view of the industry management, it was a test of business autonomy.
But the case also shows that there were organizational, political and economic circumstances that shaped the dynamics and outcomes of the Veba contract. It also raises some unanswered questions and sheds light on several related issues. The Veba case, as it is described in Annex VI-5 and summarized in this chapter, says little about the history of rivalry or the new structure of the third environment, the intracorporate environment, but it does demonstrate the managers’ difficulty in coming to terms with the organization’s status as a state-owned enterprise and, therefore, their difficulty in managing characteristic state-owned enterprise dilemmas. This problem arose directly from the industry’s history as a private business and it was reinforced by the early instructions from the state which were, in effect, to continue to behave as in the past.

To summarize the case, around 1980 the industry foresaw the need to stabilize demand downstream, by establishing its own refining capacity overseas, which would also enhance the technological capacity of the industry. In the eyes of industry managers, the Veba contract was perfectly sensible strategic business behavior, as it contributed to reduce the effects of market uncertainty and so helped to solve the problem of heavy crudes. The negotiations were, in this view, prudent and successful, something the organization could be proud of, something that benefitted the nation.

In contrast, many politicians and journalists regarded the Veba contract as a potential loss of national sovereignty,
since it placed a major investment of national capital far outside Venezuela’s territory and since it required joint control with foreign capital. It looked like a step backwards from the nationalization that had been so long awaited, a step that seemed to undermine the national strategy of state capitalism and to offend national pride. The contract implied exporting jobs and capital and it might reduce the chances for other Venezuelan industries to sell equipment to the oil industry. The politicians' irritation was exacerbated because the Congress had not been taken into account in the decision to sign the Veba contract. And Congress began to question, investigate and threaten the industry.

The industry responded to the Congress’s objections to the Veba contract by holding fast to the strategy and the decision on several grounds—that it was a wise commercial decision, that it had been approved by the Attorney General, and that it was being administered well. Nonetheless, PDVSA didn’t sign any more joint ventures with foreign companies between April of 1983 and late 1985. The data collected as part of the present study imply that PDVSA paused largely because of the criticisms from Congress and the press. The negative reactions impressed potential partners, too, and at least one possible joint venture failed as a result. PDVSA in these years kept on laying the groundwork for new agreements but it did not sign them.
The group of industry managers that I observed, as they looked back in 1985, thought that the industry had made an organizational error in one aspect of managing the Veba contract: it did not, they found, achieve timely and appropriate communication with important sectors of the national environment. What cannot be confirmed from these data—neither can it be clearly disconfirmed—is whether the industry learned to communicate more effectively with the national environment as a result of the attacks on the Veba agreement that began in May 1983.

The evidence about the negotiations says that communication about the Veba case outside the industry started in 1983 and that it was channeled through the Minister of Energy and Mines. The Minister took as his own prerogative and responsibility all communication regarding so unique and important an arrangement. He spoke with the Attorney General of Venezuela and, discreetly, with the President of Venezuela and with selected members of Congress and the major political parties, to inform them about the progress of the negotiations.

After the agreement was signed, the newspapers printed frequent negative reactions to the Veba case, but there are few declarations from the industry itself in defense of PDVSA’s reasoning, except when President Rafael Alfonzo Ravard was called to Congress. Later on, however, there were television appearances and newspaper declarations by respected national oil experts, many of whom were not, or
were no longer, industry executives. Humberto Calderón Berti and José Ignacio Moreno León (former Ministers of Mines), Guillermo Rodríguez Eraso (former President of Lagoven), Alberto Quirós Corradi (former President of Maraven), and Rafael Tudela (private entrepreneur in the oil sector) are examples. The data do not say whether or not these appearances were part of an industry communication strategy, or if they were the idea of one or two industry people, or—more probably—whether they resulted from the informal network of oil sector people inside and outside the industry who knew and trusted one another and believed it was important to speak out. In other words, the data do not show whether the televised and printed opinions of national experts in defense of the Veba agreement reflected a change in organizational behavior of the petroleum industry. It is at least safe to assume that these people would not have taken a public stance about the internationalization strategy if industry leaders had seriously opposed their doing so. Neither are there data to show how the industry management, after the contract was signed, communicated with representatives of the major political parties and with the President of Venezuela; again, it is safe to assume that there was at the very least informal communication of some kind.

Late in 1985 and early in 1986, the international oil market got weaker and weaker. The average world price per barrel collapsed from over $25 to $15, as world demand declined and
as non-OPEC production increased. In Venezuela, where oil revenues provide most of government income and foreign exchange and where foreign debt commitments were substantial, the drop in prices and the danger of losing export volumes seriously threatened the economy and the government's financial strategy. And as prices fell, overt objections from the national environment--objections to the Veba contract in particular, and in general to the internationalization strategy that the petroleum industry proposed--lost their force and subsided almost entirely.

In 1985, greater industry autonomy with respect to marketing was evidenced when the industry announced that it was going ahead with joint ventures similar to the Veba agreement, and as the PDVSA Board of Directors was ratified for another term. But what is suggested is that the regained autonomy did not result so much from PDVSA's organizational behavior toward the national environment, nor yet entirely from the interventions of other national figures, as it did from the crisis in the market. The outcome of the Veba case, then, as part of the strategy of internationalization of the Venezuelan petroleum industry, seems to be that it was above all the market which proved the industry right.

Another way to look at the adaptation is to distinguish between the process and the substance. The process, the way the industry handled (or mishandled) its interface with the political environment can be interpreted as a result of its
institutional history of isolation and insulation from the rest of Venezuela. The substance—the politicians’ priority was sovereignty, jobs and capital at home, and the business environment’s priority was assurance of access to an uncertain market—highlights the dilemma of conflicting, legitimate priorities across two of the environments.

In any case, by 1986 the Veba agreement of 1983 had become simply the first painful step toward implementing the strategy of vertical integration overseas. The industry had extended the contract to cover half ownership in all of Veba Oel’s operations in Germany, which included two new refineries, petrochemical installations and transcontinental pipelines, with the possibility of increasing to 150,000 barrels the daily shipments from Venezuela to the German market. And PDVSA’s President announced in February of 1986 that the industry was also drawing up an agreement with a Swedish firm, Nynas Petroleum, to develop asphalt and lubricants from Venezuelan heavy crudes for the European market. PDVSA, he said, was completing similar joint ventures with two North American firms. The one with Steuart Petroleum Company included the possibility of assuring 45,000 barrels a day of refined products from Venezuela to the Eastern seaboard of the United States. The other was with Southland Corporation, to acquire half of its subsidiary, the Citgo Petroleum Company, and to assure exports of 130,000 barrels a day of crudes and products from Venezuela, with the option to increase the volume to 200,000 barrels a day.
The Veba case opens several other issues.

The case sounds like a story of politicization of the industry, but not just as managers had feared it during the years before and after nationalization, which was by political appointments to the industry management. Instead, the case suggests that politicians could bring a major business strategy to a halt by questioning, investigating and threatening the industry from outside it. It is more a case of the-industry-in-politics than it is of politics-in-the-industry. And this raises the question of whether or not political buffers, what Kelly de Escobar calls commissars, should be incorporated into the organization design; the PDVSA Director said he had broached this issue with the PDVSA Board, which suggests an instance of organizational inquiry.

As they reflected on the question of communication in the Veba case, the managers surfaced a different kind of issue, a deeper question, and it was this: who are we, as an organization? Ten years after nationalization, the answer was still not self-evident. In terms of the organization, how it perceived itself, how the national environment perceived it, what its action strategy was to be and how it was to adapt its internal behavior to a course of action -- in these terms, the answer was not clear. These managers found, much as the former operations manager had found when he tried to buy steel sheeting from Sidor in 1976, that belonging to a private industry that had been nationalized
was the worst of worlds, "What is your identity? You don't know". In 1985 the term "state-owned enterprise" meant, for the oilmen, several things they did not want to be: political (along the lines of national politics), inefficient and unmotivated. They had not found a way to conceptualize a different kind of state-owned enterprise.

One way to see how the Veba case reflects a state-owned enterprise dilemma is by doing a thought experiment. If, in 1980 or so, the Venezuelan petroleum industry had still been part of the transnational network, the issue of where to invest industry capital would not have arisen in this form. The Venezuelan state could not have forbidden the transnational corporations to invest overseas; it could not even tell them to invest in Venezuela (except by making it economically attractive). Under the concessionaire regime, the state could only tell the industry not to invest in Venezuela--this was the sense of the no more concessions strategy. In 1956 and 1957, when Dictator Pérez Jiménez granted the first new concessions to foreign companies since 1943, he was criticized for letting more foreign capital into the Venezuela. In 1983 the nationalized industry was criticized for signing the Veba agreement because it meant exporting national capital and, it was feared, jeopardizing national autonomy.

And this raises questions about the meaning of nationalism itself--how closely it is tied to territoriality, and how far
it is possible retain control or the illusion of control over state industries (by ownership and by keeping all capital and jobs here), when the international oil market itself is largely out of Venezuela's control. State ownership, in other words, cannot of itself assure control of the industry's success (just as it need not promise failure). Success depends, as this case suggests, on effective marketing of Venezuelan oil overseas. This issue is related to Venezuela's role in OPEC, but that goes beyond the scope of the present study.

The issue of the organization's identity went beyond the public-private dimension. If vertical international integration were implemented on a larger scale, PDVSA would become an international organization in more than the sales function. It would possess and need to manage operations abroad. For ten years after nationalization, the industry had circumscribed all of its activities except sales and some purchasing to the national territory. By 1985, half of the total work force and more than half of the managers had been hired into an oil industry that operated only in Venezuela. And the change had begun to show in subtle ways—the younger managers, for example, might not speak fluent English—superficial signs that nonetheless indicated deeper change, in this example the diminished contact with the international oil world.

What would it mean for the industry organization if it were to become an international industry again? It would not be
the same kind of international industry that it was before 1975. The continuity had been broken and the partners would be different. The structure of the oil market was different. A new kind of organization would have to develop and undoubtedly, as the politicians pointed out, a major part of the job would be controlling the interests in joint ventures far from home.

What the managers’ discussion indicates is that the source of the error in communications was an organizational belief—that the oil industry was not really a state-owned enterprise—and a related assumption—that if it tried to behave like one, it could not be efficient. If this assumption and this belief persisted, they would impede the industry from designing alternative ways of handling similar dilemmas in the future. Some of the managers who discussed the Veba case raised this point, and this can be qualified as an instance of organization inquiry into the problem.

Finally, both the Veba case and the planning case, presented in Chapter VII, show how the several parts of the Venezuelan state emerged after nationalization. The Congress, the Ministry of Mines, the President of Venezuela, the Attorney General, the Banco Central de Venezuela and Cordiplán all played parts, and their roles changed over time. But the two cases are different. The behavior of the state in the Veba case—with the politicians demanding more control and then backing off as market forecasts and prices plummeted—
contrasts to the behavior of the state in 1982. At that
time, it looked as though industry bounty induced the state
(represented in the Banco Central de Venezuela through the
Ministry of Energy and Mines and Cordiplan, and backed by the
President of Venezuela) to take closer control of the
industry's immense dollar reserves, by bringing them back
from foreign banks and despositing them, albeit earmarked, in
the Banco Central de Venezuela.

I argue that it is necessary to understand not only the
shifting nature of the environments, but also the specific
organizational contexts of the many parts of the state, and
of the industry itself, in order to explain how each one
behaves and to interpret the outcomes of interaction among
them, of their negotiations and their common endeavors. I
explore this issue in more detail in Chapter VII.
VII. RESPONDING TO THE CHANGING POLITICAL AND ECONOMIC ENVIRONMENT IN VENEZUELA: THE PLANNING CASE

Before nationalization, the relations between the transnational concessionaires and the Venezuelan government took the form of a "government-industry game" a constant struggle to see which side could control the other for the longer period of time. It culminated, said PDVSA Director 5, in nationalization. But the evidence shows that after nationalization the game did not disappear, but some of the terms had changed, and so had the market and the national environment. This chapter focuses on the process by which the government and the newly nationalized industry engaged each other, struggled and tried to come to grips with their new relationship as owner and state-owned enterprise during the elaboration of the Sixth National Plan. By looking at the issue of control and autonomy through the lens of organizational adaptation theory, the dynamics of the process of mutual adaptation can be traced around the design of the energy investment plan in the early 1980s, years of great market uncertainty and fiscal shortages, when a sequence of events led the state to insist that the oil industry deposit its petrodollars in the Central Bank of Venezuela. The analysis of this story also makes it clear that the need for organizational inquiry into the change process was just as important for the state as for the industry as they responded to the turbulent environments and to each other in an effort to achieve a satisfactory balance between control and autonomy.
To set the stage for that story, I first analyze the changing nature of development planning in Venezuela in the 1970s and rearrangements in the institutional planning framework of the Ministry of Energy and Mines, Cordiplán and the oil industry. Next I show how a Cordiplán planner and an oilman perceived each other and how they meant quite different things when they talked about planning. All of this is the groundwork for a story about drawing up the energy sector of the Sixth Plan, in alternative interpretations of the Cordiplán planner and several oil industry representatives. The discussion of the story emphasizes the organizational problems of mutual perceptions and adaptation between the oil industry and the Venezuelan state after nationalization.

Changes in national planning in the 1970s

National development planning, new to many OPEC countries, is not new in Venezuela. Every administration since the beginning of democratic government in 1959 has drawn up a comprehensive, indicative national development plan to provide strategic guidelines for major economic and social decisions. The plans are not binding—they are not tied to the national budget—but they do offer a general framework of priorities within which to debate, coordinate and negotiate national investment decisions, by sector and by region, and for guiding private investment. The sectoral Ministers--energy, education, defense, health and so on--prepare and
execute their respective budgets, which are presented to Congress by the Minister of Finance.

Cordiplán was designed as an auxiliary office for the President of the Republic. The Minister of Cordiplán is appointed by the President and he attends cabinet meetings as one of the President’s closest economic and social policy advisors. The post must therefore be seen as both a technical and a political one; in fact, most of the Chiefs of Cordiplán have enjoyed outstanding professional prestige.

The Sixth National Plan (1981-1985) was drawn up and revised under President Luis Herrera Campúns, during 1979, 1980 and 1981; revisions continued through 1983 and early 1984. As the government and oil sector planners worked on the energy sector of the plan, they faced important differences with respect to the first four national development plans (1960-1964, 1963-1966, 1965-1968, 1970-1974). Some of these differences may have shown up during the Fifth Plan, but there was little reference to them in these interviews. The Fifth Plan (1975-1980), drawn up and carried out under President Carlos Andrés Pérez, coincided with the impact of the first oil shock, and it underwent successive adjustments as income increased and as the government nationalized the iron ore and oil industries. Through 1978 or so, "Expand" was the strategy, both in the oil industry and in other major national programs, such as the Guayana industrial complex. In those first years of the oil bonanza, the budgets grew so fast that some government development agencies could not
spend them all. But by 1979 several important differences became evident, differences between planning before the oil industry was nationalized and planning afterwards.

First of all, the nationalized oil industry had a longer future than it had had under the system of concessions when, between 1960 and 1975, the industry had contracted as the transnational companies prepared to leave by 1983 or sooner. The nationalized industry needed to invest heavily for the future; the contrast between these years of gearing up and the previous years of scarcity is illustrated in Chapter VI.

A second difference was crucial for those oilmen who had worked in international holdings: planning horizons were longer now, but they were limited to Venezuela’s own hydrocarbon resources and to specific knowledge and effective strategies for marketing Venezuela’s oil abroad.

But by the same token, and in the third place, the nationalized industry could make its opinion felt in the Venezuelan political economy more effectively than the transnationals had been able to do.

**PDVSA Director 1:** Well, you see, the big difference is that we have only Venezuela to look at. We can’t say, okay, look to another country. (A transnational company) has alternatives. They have different political problems from PDVSA, because an international company has much less political influence on the oil policy in the different
countries whereas PDVSA has more. What the industry thinks, I mean, is taken into account here, at least to establish policy, if not to change it. There may be some doubts, but they do hear us. There is a more intense dialogue than there used to be. Before, there must have been lobbying at certain levels, but without real political power. So we have more power now. ...but all we can look at is Venezuela: our kind of oil, our own reserves, our own government (Interview 38.1/3).

A fourth difference between national development planning in the late 1970s and early 1980s and planning before 1976 had to do with the changing oil market, described in Chapter IV. Prices were much higher than ever before and income was much greater, but the outlook was increasingly uncertain and by 1980, OPEC was contemplating quotas to limit production (Interview 14.5/5). The growing uncertainty required a new kind of thinking, of being prepared for ups and downs, and neither the government nor the oil industry was ready for it.

In the fifth place, now that the Venezuelan state owned the industry, oil competed for investment funds with other sectors of the national government—-at least in theory. But in fact, so long as the petroleum industry produced and managed its own investment funds, the other sectors did not have access to them. And by 1979 many other major national projects were under way or awaiting approval, and investment funds were relatively scarce.
Venezuelan ownership of its oil industry led to a critical sixth difference in national planning, which was described by a former Planning Minister, later a Director of PDVSA. Before nationalization and even as late as 1980, oil was just a "reference sector" (albeit a vital one) of the national plan. Oil revenues provided the bulk of the funds for the national plans, and discussions between Cordiplán and the oil sector representatives centered on how much income there would be. But oil had not been a sector to be planned within the framework of the national plan (Cordiplán Coloquio 1983). The Corporación Venezolana del Petróleo and the Ministry of Mines and Hydrocarbons had done some long-range planning before nationalization, particularly with respect to the development of the Orinoco Oil Belt and to the use of gas in Venezuela, but before 1976, investment planning for the oil sector was largely a function of the transnational holding companies, subject to prior approval by the Ministry of Mines and Hydrocarbons after 1971, according to Decree 832. So after 1976, it took a while to design major investment projects and even longer for the state to come to terms with the fact of being an oil-producing and oil-selling state.

But now this is an oil-producing state, and it is very important, more than a single sector is in any other Latin American state. We must also be planning the oil sector, and it is an extremely variable sector. But this is not easy, and you must look for understanding (compenetración) between the oil and the planning sectors (Cordiplán Coloquio 1983).
These differences set the stage for a new kind of relationship between the petroleum industry and the state, a new basis for the old "government-industry game". What emerges from the analysis of the interviews that referred to the planning process is a set of contrasting perceptions about the organizational roles of the Ministry of Energy and Mines, Cordiplán and PDVSA as they drew up the energy sector of the Sixth Plan. I argue that the different perceptions are owing in large measure to the different contexts in which the speakers, acting as agents of their respective organizations, frame their perceptions. That is, they reflect different ways of seeing that grow out of the organizational backgrounds of the speakers.

Some of the interorganizational differences dated back to the years before nationalization, but not all of them. Nationalization changed the nature of the relations among the components of the oil industry's environment and increased the need for interaction among the national organizations concerned with petroleum planning and production. But the changing structure and increased uncertainty of the international petroleum market in the 1970s and early 1980s was a decisive environmental factor also. The different perceptions lead to problems of communication that can affect the outcomes of such interorganizational endeavors as investment allocation and financial control. Because oil is so important to the Venezuelan economy, the results of the difficulties in communications can have far-reaching effects.
The Ministry, the industry and Cordiplán

Interviews were held with four former high-level officials of the Ministry of Energy and Mines, one man who is now in a directive position at the Ministry and three experienced Ministry professionals from the managerial and technical levels. Several former PDVSA executives also referred to the Ministry's role in guiding and controlling the industry, and so did the Cordiplán planner.

The issue of the respective roles of the Ministry and the industry in the national planning process is part of a larger question about the evolving nature of the role of the Ministry after nationalization of the Venezuelan petroleum industry. The review of oil and oil policy in Venezuelan history in Chapter III provides the background for interpreting organizational changes in the Ministry after 1976. It shows that the decision to nationalize the petroleum industry in Venezuela was in large measure a political decision, with historical and ideological roots that dated back to the early 1930s and 1940s. The decision was congruent with a strategy of state capitalism, but it was made only when economic, political and technical factors made it a viable project. The political project was completed with nationalization in 1976, when the Venezuelan petroleum industry was owned and managed by Venezuelans.

This was a crucial moment for the Ministry, especially in the light of the creation of PDVSA, sole owner of all of the
shares of the new affiliates. A former high-level Ministry Official (4) described some of the changes. The Ministry was now to formulate long-term strategy and dictate policy, no longer policy to control foreign concessionaires but policy to guide the state-owned petroleum industry into the future as a tool for national development (Interview 85.1/6). So the Ministry was to replace certain former holding company functions—design of long-term strategy and policy guidelines—but these were to be framed in terms of national development goals. PDVSA was to handle holding company functions of coordination, supervision and control of the industry.

A change of mentality was required for the Ministry to develop policy, strategies and guidelines. The Ministry had been used to controlling and now more vision was needed. Former Ministry Official 4 thought the Ministry had achieved this change "pretty well" (Interview 85.1/10).

And the Ministry was still to fulfill those former legal obligations that did not expressly or tacitly conflict with the nationalization law. That is, the Ministry had a set of tasks that were independent of who the industry was, whether Exxon or PDVSA. For instance, it must still approve the location of wells and, together with the companies, set royalties (Interview 14.5/4).

And the Minister now had two distinct roles. As chief of the Ministry he was policy leader and maximum representative and authority of the Ministry. In this role he exercised
administrative control over the industry. This was not radically different from before nationalization. But policy decisions from the Ministry were now to be adopted by the PDVSA Stockholders' Meeting (Asamblea de Accionistas), where the Minister himself represented the Venezuelan state, sole stockholder of PDVSA (PDVSA n.d. and Viloria 1983). In this second role the Minister was in fact part of PDVSA (Interview 14.2/3a), and this was new. There is little evidence on the dynamics and outcomes of the Asamblea and how it fits into the national political framework, but the evidence does show that there has been no easy formula for distinguishing the Ministry functions from those of PDVSA. The issues are important: policy versus control; degrees and areas of control; investment planning and budget approval; the ambivalent or combined nature of the nationalized oil industry, with both private and public characteristics; agenda-setting, attendance of other Ministers and minute-writing for the Stockholders' Meetings (Interview 75.1/7); pricing; and representation of the oil sector before the Congress and the Cabinet (Interview 44.1/5).

To resolve these issues, the two organizations had to feel their way, negotiate and experiment in order to specify, or induce the national executive to specify, their respective roles and the boundaries that limited them. There were at times bad feelings. The Ministry had been disappointed at the small role it played in the organization of the newly-nationalized industry, in particular of PDVSA. This was
decided so because of the historical relationship of conflict between the Ministry and the transnational companies. Ministry people, angry at being pushed aside after 1976, took malicious pleasure in watching Venezuelan petroleros become employees of a state-owned enterprise:

Ministry Official 5: Before nationalization some of them said, "I'm not going to work for a state-owned enterprise. I'll plant potatoes first". Then you see them afterwards. "Hey, why aren't you out planting potatoes?" And you know why not? Because they kept their exact same working conditions. Nothing changed. It was so gentle that you couldn't tell if it was nationalized or not (Interview 78.1/5).

Personnel from the Corporación Venezolana del Petróleo were perhaps even more distressed than Ministry staff at not playing a leadership role in the organization of the nationalized industry. In Chapter V, a high Ministry official explained that CVP did not have enough ascendance over the transnationals to exercise real industry leadership. CVP people did, however, work on the commissions that were formed to begin coordinating the formerly independent companies into a vertically integrated, federative state-owned industry (Interview 78.2/5).

Despite some rivalry and bad feeling, there were, besides the formal links between the Ministry and PDVSA, informal relations that were crucial for the effective development and
implementation of petroleum policy. Chief among them was the group of people who had worked in the oil sector, both the Ministry and the industry, for twenty or thirty years—"four or five generations of oil people...since 1945, and they all fit in one room" (Interview 23.1/4). Rivals or not, they knew one another from college days or from working together on projects in the past; some were members of the same family. Thanks to this common history, they had developed relations of continuity and trust (Interviews 79.1/5 and 23.1/4).

Oilmen and Ministry staff both reflected a sense of pride in having risen together to the challenge of nationalization, even when they had disagreed about its nature and timeliness. This loose network made it possible for the Ministry and PDVSA to undertake some joint endeavors successfully; key among them was the elaboration of the annual guidelines for the industry. Both industry and Ministry speakers described the process as an interactive and effective one (Interviews 14.2/3a, 85.1/9-10 and 2a, 41.1/3 and 75.1/7).

A copy of the guidelines was not made available for this study—three PDVSA Directors simply said, "No"—but a former Ministry official described them. There are a hundred or so, usually written in conceptual terms, as for example, "Explore for reserves of natural gas." Then PDVSA translates each guideline into specific assignments for the appropriate operators, according to their respective possibilities. The operators present the corresponding budgets to PDVSA, which
sees if they adjust to the Ministry guidelines. In one of the two ordinary annual Stockholders’ Meetings, PDVSA presents a consolidated budget to the Minister and he, as President of the Meeting, approves or does not approve it. He can ask to see individual company budgets (Interview 85.1/11-12).

Each year PDVSA received a draft of the guidelines and made its recommendations, which were usually followed by the Ministry, and PDVSA Director 4 “hoped it stayed that way” (Interview 41.1/3). The review of the draft of the guidelines was a key element in the relations between the Ministry and the industry after nationalization. It shows how important discretion and care were in achieving interorganizational cooperation. That is, the Minister might at his discretion choose to ask for PDVSA’s opinion of the guidelines; this way the industry would be more committed to them. PDVSA in turn took care not to presume that the review of the guidelines was its right, and so it sought to preserve this informal and, by most accounts, effective coordinating mechanism (Interview 41.1/3). Similar discretion and care were used to protect industry access to the PDVSA dollar reserves once they were placed in the Central Bank in 1982, as described below (Interview 56.3/1).

The 1984 consolidated budget for PDVSA was approved late in December 1983, just a month after the industry had received the guidelines. Before nationalization, the Venezuelan
concessionaires could expect to have budget guidelines as early as March of the preceding year. Representatives would go to company headquarters in April or May and in June there would be a "premises meeting" in Caracas, with people from the home office. It would all be approved by October.

The fact that Ministry guidelines were not received until November, for a budget that started to run in January, reinforced the need to strengthen the informal links with the Ministry, so PDVSA could work with tentative guidelines while it waited for formal notification. Informal contacts had at times been used with the multinationals, but now PDVSA executives could contact Ministry officials personally or by phone at any time. The relative stability of the Directors of Hydrocarbons of the Ministry—only seven in its history—eased the of informal channels (Interview 41.1/4).

Industry managers also used informal tests to validate the guidelines. One test was whether or not the conceptual guidelines from the Ministry were translated into budget allotments by PDVSA (Interview 48.1/9). Another had to do with the political nature of the new owner. Early in 1984, when the government administration changed from Copei to Acción Democrática, industry guidelines were already in place, but several managers said they were not taking action until they discovered if the new administration would validate the guidelines. The notable example was downstream internationalization (Interview 80.1).
Yet a highly experienced Ministry official, who had worked for a time in the industry, believed that the Ministry did not really set policy, and he referred precisely to internationalization. "What is policy-making? Policy is defined by the facts" (Interview 79.2/2). He found that the Ministry was really limited to gathering information to justify policy that had already been initiated in PDVSA. PDVSA began to act, as in the case of internationalization of the industry, and the Ministry then formalized PDVSA's actions by including it in the annual guidelines. PDVSA had been able to do this, he said, because it had the power and the influence with the President of the Republic. "So you end up writing the guidelines in order to justify them, to back up the facts... 'If the industry says it, that is how it should be.' Then, what am I doing here?" (Interview 79.2/3).

This sounds like a new version of the old government-industry game, transported into the years after nationalization. The data are not sufficient to confirm or disconfirm this official's appreciation with rigor, but they do suggest that the respective roles of the different national actors varied at different moments, and on different matters, according to shifts in and among the environments. There may be issues, for example, where the President of Venezuela and the Cabinet, together with representatives from the major political parties, make a decision and where the Minister of Mines is heard as the most knowledgeable and influential person.
Two former high-level Ministry officials who had worked on the Sixth Plan said that petroleum sector planning was accomplished within the sector itself: the Ministry, PDVSA and the affiliates. The Ministry guidelines and the industry budgets were the planning mechanisms and Cordiplán’s role was minimal. One man said—but not until I asked him—that the energy sector of the Sixth Plan could not have been drawn up without Cordiplán but he described its role as a general one: "to provide a vision from above" (Interview 75.1/9). The other man also had to be asked, and he said that Cordiplán was "unrealistic" (Interview 85.1/9). His sketch of the actors and the interactions that led to formulation and approval of the oil sector’s current and investment budgets did not include Cordiplán at all (Figure 6).

Figure 6, which emphasizes a top-down process with interaction between PDVSA and the Ministry, contrasts to the above description of the Ministry official, who insisted that the Ministry was not an initiator in policy design. Later in this chapter I will contrast Figure 6 to the version of the planning process as it was described by a government planner. He saw a role for Cordiplán (though he believed it was insufficient) and he also said that the Minister had an important political and planning function: to protect PDVSA from the rest of the state by convincing the other sectors of the need for international vertical integration and of the firm intention of the industry to buy Venezuelan products and
of the firm intention of the industry to buy Venezuelan products and to integrate itself into the rest of the economy. In short, the Minister of Energy and Mines, as a powerful member of the President's cabinet with a strong political commitment, in charge of the sector that generates the majority of government income, could "sell" the oil plan to the rest of the government (Interview 69.2/6).
But if the industry had financial autonomy, how much did the industry's oil plan have to be sold? In what sense can it be said that the nationalized petroleum industry competed with other national sectors for scarce investment funds? That is, if the oil sector had been assigned less investment funds for the Sixth National Plan, would the other sectors therefore have been assigned more? These questions must be explored in order to understand the nature of the relations among the oil industry, the Ministry and the rest of the government, whose spokesman was Cordiplán.

Before nationalization, the industry was taxed, and by the end of the regime of concessions to foreign companies, income tax and royalties amounted to over eighty percent of profits. The taxes provided foreign exchange for the national development plans but not for the industry itself, since its investment projects were financed by the respective transnational holding companies, except for the Corporación Venezolana del Petróleo, whose investments were a small part of the total.

After nationalization, the Venezuelan state, as owner of the petroleum industry, had to finance industry investments. A fiscal arrangement was designed to assure financial autonomy for the industry. The nationalized industry would be taxed as the transnational companies had been, but since the industry needed more investment funds to face the expected challenges of the future, the income tax and the royalty rates were lowered. In the late seventies and early
eighties, taxes were nearer to sixty than eighty percent of profits, as the industry retained greater reserves for investments (Interview 75.1/9 and Pulido Mora 1983). Until 1982, the reserves were kept under the direct control of the industry and then, after a series of events that are described below, they were removed to the Banco Central de Venezuela. There they were still earmarked for the petroleum industry (Interview 56.3/1).

But the industry did not have complete autonomy to invest. Actual use of the investment funds was approved through the consolidated budget, following Ministry guidelines and subject to approval by the Minister at the Stockholders' Meeting. The guidelines were annual ones, but they were often repeated in time, and once major investments were built into the budget for the first year, they could not be stopped until the project was done. (Later in this chapter, however, PDVSA Director 1 is quoted as saying the major, on-going refining projects were at least questioned, though not not stopped, in 1979.) The guideline and budget mechanism was designed to keep the industry independent of the Ley de Hacienda (Interview 77.1/13). At least through 1985 no change had been seriously proposed such that the oil industry would have to compete directly with other sectors for investment funds, but the other sectors could (and did) pressure through the mechanisms the government could use to increase its share of the oil revenues (Interview 75.1/9). They were four: one, increase the export value, which is the
basis for the industry income tax and is determined by a committee with representatives from the Ministries of Mines and Finance; two, increase the royalty, which is set jointly by the Ministry of Energy and Mines and the companies; three, change the tax rate, which is set by law in Congress; and four, change the oil dollar/bolívar exchange rate, which is set by the Banco Central de Venezuela (Interview 14.5/4).

If the industry should want major funding for a specific project, it could try to get a public loan through Congress. Since oil dollars were to go from 6 to 7.50 bolívares in 1986, a loan was not, in 1985, expected to be needed in the near future (Interview 75.1/9).

The changing institutional framework among the Ministry of Energy and Mines, Cordiplán and the nationalized industry contributed to shape the relations between the industry and the state after nationalization, in particular the outcomes of the national energy plan. But the perceptions of the oil industry and the state with respect to each other and with respect to the nature of planning itself were at least as important. In the next section "the state" is represented by Cordiplán. The Ministry is of course part of the state, but the Ministry was more knowledgeable of the oil industry than were other government organizations while Cordiplán, as I propose to show below, was a relative stranger to the newly nationalized organization.
Planners and oilmen: contrasting views of planning

An oil company director and a government planner identified differences between the ways national planners and oilmen think about planning in Venezuela. Selections from those two interviews, presented in Annex VII-1, are compared and contrasted here to illustrate organizational differences of perception about the planning process and about one another. I argue that the government planner, a top official from Cordiplán at that time, was more typical of the rest of the Venezuelan state than were the officials from the Ministry of Mines, so by inference this section throws light on the organizational differences between oilmen and policy-makers. The differences indicate that the intracorporate environment of each organization—the industry and the parts of the state—is unique in its structure, history, culture and relations with the other organizations; the internal environments also change over time. Therefore, the outcomes of common endeavors are the product of a constellation of organizational and interorganizational factors, and mutual adaptation between the state-owned enterprise and the state itself is a complex and dynamic process that can be understood only if these factors are studied carefully. From the point of view of industry managers and public officials, they must be prepared to respond to each organization differently and to examine the dynamics of the dialogue between them, as they search for effective mutual adaptation.
Several interesting and intangible issues of organizational behavior emerge from comparing and contrasting the selections from these two interviews, issues of attitudes and the psychological basis for looking at the future; issues of communication, language and style; issues of control and distrust. I think that if we probe these issues—intangible, subtle and hard to define as they are—we will understand more about the planning process itself and some of the outcomes of that process (investment allocation, for example, and financial control).

When the oil company director talked about differences in attitude and approach to planning, he implied that an oilman believes he can't prepare himself for change because the future is too much out of control (a strategic approach, based on a psychological difference, not a methodological one). Planners, he said, "Cordiplán, I mean, and so on," all take a mechanical approach; they think in terms of "variables, lists".

Two planning experiments that the oil company carried out in the late 1970s were attempts to look toward the year 2000. One approach was called an "oilman's approach", not because it was strategic but because it started with an extrapolation of oil market behavior and proceeded from there to deduce exploration and investment needs for the oil sector. The "planner approach" began with target GNP and went on to deduce the foreign exchange gap. Interesting as they were,
both experiments were pure extrapolation, and the oil company director worried that in fact so few Venezuelan oilmen think in the long term or demonstrate a corporate vision of the oil industry, both of which are requisites for devising strategy. The long term view and the corporate vision are lacking for several reasons: after 1976, attention was focused on immediate decisions for expansion (in fact this does make assumptions about the long range, but he did not say this); long-term and corporate thinking were done in the past by the transnational holdings overseas; Venezuelan oil industry executives had failed to perceive how deep the changes induced by nationalization would be; and the first leaders of PDVSA were familiar with the national political economic context, but not with oil.

The Cordiplán planner spoke of differences in communication, style and language. Venezuelan oilmen have languages and styles that are different from those of the environment. He illustrated the differences in style: oilmen often irritate other highly placed public sector officials with their carefully prepared, simple presentations, made with "the ever-present overhead projectors" and "paraphernalia". The government planner admitted that the "petroleros" probably go to a lot of trouble to make such presentations clear, but they go too far and create a sensation that they feel superior to the public officials. This example, like the repeated references by oilmen to lack of punctuality in government offices, or to messengers standing in the halls,
is not superficial, or it is only the superficial reflection of an underlying feeling of mutual suspicion, a conviction that the other organization does not share the values precious to one's own.

The planner also spoke of lack of information: information on volume and prices changes every week, every day. How come? Was it the market? Was it habit? Was it a problem of communication, or was it distrust? He implied a problem of control: "We didn't get what we wanted."

And both the government planner and the oil company director spoke of a difference in the kind of planning base: strategic or dynamic. In Chapter VI, the managers discussed different meanings of time when they referred to the Veba case—market time, political time—and PDVSA Director 1 also spoke about this complex issue of time as follows:

**PDVSA Director 1**: The actual time isn't so important. If we said twenty years, for example, it would be somewhat artificial. Our experience makes it difficult to do this. We talk instead about problems and opportunities, of changes. We develop scenarios. But the scenarios do help us with the middle range, which in this industry in six years, the first year is the budget and the rest is the plan (Interview 38.1/2).

The data do not permit us to say that there is a clear line between the ways oilmen and government planners in fact look at the future, but they do suggest an espoused typology of
differences between the two organizations that may be useful to analyze their observed behavior and attitudes and to detect changes over time.

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>OILMAN WAY</th>
<th>PLANNER WAY</th>
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</thead>
<tbody>
<tr>
<td>Purpose of planning</td>
<td>Practical, operational implications. Plan is attached to budget.</td>
<td>Foment nation-wide debate and discover incongruencies among sectors. Plan is not tied to budget.</td>
</tr>
<tr>
<td>Most relevant</td>
<td>International business world</td>
<td>National political and economic environment</td>
</tr>
<tr>
<td>environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward future</td>
<td>I cannot control it so take a contingency approach; discontinuities expected.</td>
<td>I want it to be like this so take a more normative approach; gradual change expected.</td>
</tr>
<tr>
<td>Starting point</td>
<td>Oil market, leading to exploration and production potential needs. Expansive.</td>
<td>Target GNP growth, to foreign exchange and oil production needs. Conservative.</td>
</tr>
<tr>
<td>Time-investment</td>
<td>Quarterly or monthly pictures.</td>
<td>Five-year pictures.</td>
</tr>
<tr>
<td>Investment</td>
<td>Five to ten years.</td>
<td>Five to twenty years.</td>
</tr>
<tr>
<td>Communication, style,</td>
<td>Formal, on time, well prepared, English</td>
<td>Informal, more impromptu two-way discussion expected,</td>
</tr>
<tr>
<td>language</td>
<td>frequent, teamwork, one-way communication.</td>
<td>often late, informality in oral presentation.</td>
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The proposed typology helps to show the need for a clearer definition of important planning concepts, like the notions of strategic approach, style, and data base.
The issues that the oil company director and the government planner address are organizational in at least two senses. First, they reflect more than the individual differences between the two speakers. The speakers are two individuals, but they act as agents for their respective organizations and they think in ways that reflect patterns of thinking in the respective organizations where they work.

Both the government planner and the oil company director were recognized leaders in their organizations. The planner had been associated with Cordiplán for over twenty years, and the oil company director had been in the Venezuelan petroleum industry for thirty. But besides that, representatives from other sectors of the Venezuelan government also expressed confusion at the idea of constantly changing income estimates or of a dynamic base, and irritation at the carefully prepared oral presentations and other stylistic differences, like the Venezuelan oilmen's frequent use of English. On the other hand, the interviews that were carried out with the other oil executives suggest that this oil company director represented a more general industry point of view, especially as he perceived that the public administration behaved differently, was to him more "mechanical" than the industry, thought in terms first of GNP and then of oil revenues, and he did not understand it.

The company director was not always speaking for the organization. When he spoke of the future, he said that very
few people in the industry looked far ahead, few people had
corporate vision, and many had not realized the depth of the
change implied by nationalization.

What helps to compare and contrast these two people is that
they were both puzzling about the differences between them.
The oil company director had invited the Cordiplán planners
to visit the oil company to see how the planning exercise was
carried out there, and it was then that the government
planning group began to understand how the oilmen worked.

They both spoke of "we" and "they", and this perspective was
not introduced by the interviewer. The oilman said, "we
identified the gap"; "we failed dismally"; and "They all talk
about variables, lists—Cordiplán, I mean and so on. They
all seem to do that". The planner said, "The oilmen have
languages and styles that are different..."; "They work with
a dynamic basis", whereas, "We work on a five-year
perspective. ...We never understood this until much later.
They thought we worked like them."

So I argue that, in a first sense, the issues that these
speakers uncover are organizational in that they reflect more
than the two individuals' ideas: they reflect important
facets and perspectives of the specific organizations that
the speakers represent.

The issues are organizational in another sense: they refer
to organizational questions that can be distinguished (but
perhaps not separated) from the political, legal, economic
and technical realities that also shape the organizational behavior and outcomes of the Venezuelan petroleum industry and Cordiplán. These other realities are discussed more fully at the end of this chapter, but first, a vignette of the elaboration of the Sixth National Plan shows how the organizational issues were played out during the early 1980s.

*Planners and Oilmen during the Elaboration of the Sixth National Plan*

Before nationalization, the transnational companies' subsidiaries in Venezuela had competed with other subsidiaries the world over for investment funds. But with nationalization, the forum changed, the competitors for scarce funds changed, and the nature of the argument therefore changed. Investment choices among subsidiaries of the transnational holding companies were based largely on who had the best oil-finding prospects and how the market could be served better, a Business Is Business criterion that probably included a country risk analysis—a PDVSA Director said, for example, that the transnational companies were not indifferent to political factors and needs in Venezuela and that they operated within certain margins for that reason (Interview 14.7/1).

Priorities among subsidiaries in different countries were based not on who needed what but on who produced most and what he needed to keep on producing just as much or more. When Creole represented sixty percent of Standard Oil of
New Jersey’s operations, Creole’s needs were fulfilled on a priority basis. The same was true for Shell of Venezuela with respect to the Royal Dutch/Shell Group; its activities were reviewed daily by the Shell Group Board while Shell Philippines, for example, was reviewed about once every quarter of the year (Interview 60).

Investment criteria in a major transnational holding company, then, were "bottom line considerations! Profit! Where it was best and most convenient for the people who were putting up the money" (Interview 59.1/7).

Did this change with nationalization, when the Venezuelan state became the owner of the industry? An industry planning manager answered that the government had told the industry what to do ever since the early 1970s and that the industry simply followed orders (Interview 54.1/6). His view espoused the "good soldier" epithet that oilmen often used to describe the industry’s posture toward the owner. But most of the interviews that referred to the national planning processes suggested that the industry in fact took a proactive stance in the planning process after nationalization.

At the same time, as specified in Chapter V, the state had defined two new objectives for the nationalized industry besides profit (to buy Venezuelan products and contribute to regional growth around industry installations) and had reiterated two old ones (to supply the domestic hydrocarbons market and to provide foreign exchange for national
development). The interviews provided little evidence about how the industry took these four objectives into account for investment planning; what is implied is that the purchase of Venezuelan products increased slowly and only as the state insisted, while regional development programs were undertaken in some measure, particularly training of municipal councils.

An illuminating view of the industry's proactive stance in the planning process, and of the other sectors' reactions, was offered by the government planner. He told a vivid and coherent story of the process of drawing up the energy part of the Sixth National Plan, during 1980 and 1981, and of revising it in the following years. As he went along, he inferred components of an action strategy on the part of the oilmen as they worked on the Plan. His story, with alternative interpretations from four industry speakers, is presented in Annex VII-2.

The planner inferred a proactive negotiating strategy on the part of the oil industry during the elaboration of the Plan: only one or two top industry representatives communicated with the government; the industry planners reflected maturity and teamwork and met all of the formal requirements (chronograms and so on) very well; they presented a coherent argument, based on the need for increased production potential and on profitability; they used the OPEC information base for market forecasts and kept a reserve of market information; they limited detail on investment allocation; they framed the need for self-financing no
indebtedness in terms of national financial security. They agreed to buy industry inputs from Venezuelan suppliers.

Two things are remarkable about the way the industry speakers referred to the elaboration of the Sixth National Plan. First of all, the facts they cited were not different from those to which the planner referred--facts about the information base, the industry rationale for investing in oil, the difficulties of buying Venezuelan, self-financing and no indebtedness, and so on. And second, the facts were framed in very different contexts. The international business environment--markets, OPEC, the Middle East, long-term production potential--made up the relevant context for PDVSA Director l's reflections, whereas the government planner referred above all to "the other sectors"--metallurgy, education, the waterworks. And they were sectors with emotions, who "felt abandoned", were "very, very resentful". The government planner and the oilmen seldom contradicted each other because they were thinking in different worlds and constructing different meanings from the facts.

It is safe to assume that both the government planner and the PDVSA Directors wanted increased oil revenues for the Sixth Plan. For the planner, however, the big risks were overinvesting in oil, to the detriment of other (and vociferous) sectors, and overcommitting the government altogether and so having to make painful cuts in all the
sectors—beginning projects and having to interrupt them, raising hopes and then dashing them. He did not, in his interview, express concern about not being able to respond to an increase in oil demand. He did not question profitability; he did not even mention it. He talked about greater certainty of income. And so he insisted on a conservative estimate, the "Low Case".

For the PDVSA Director I, the big risk was not being able to meet a sudden rebound in demand, not having the money when it was needed. He did not speak, in this interview, of the other national sectors. He wanted greater certainty of investment funds for sustained production potential and deeper refining patterns.

But more was at work here than the different perceptions of the risks. The planner was irritated by organizational behavior he observed. He could not get an answer about the market nor details on investment allocation. The industry refused to go into debt, that is, it "wanted to play by different rules from everyone else". The industry was cautious about who spoke to planners and then it tried to complicate the methodology for the forecasts. When the market got weak, industry representatives said everyone had known it would happen. Could the planner believe them? Could he control them? These questions seem to be at the heart of his recollections.
Oil industry executives also broached issues of distrust and control in their interviews. They addressed the issue of increased control—or at least increased questioning—from the state or, put another way, the issue of fewer degrees of freedom for the industry. They spoke of the Law to Safeguard National Patrimony, of excessive requests for information from the Ministry of Energy and Mines, of overt criticism from the press and Congress, of the planning process and of the transfer of petrodollars to the Banco Central. PDVSA Director 3 went a step further and described a resulting change in organizational behavior: after the funds were transferred, "permanent dialogue with the national government" had been necessary, to maintain a flow of funds that allows a corporate planning process. And so far the dialogue had provided good results. These are issues of organizational attitude and adaptive behavior to changes in the environment.

Thanks in part to the successful interventions of the Minister of Energy and Mines, the energy plan was approved late in 1981. Nonetheless, the planner saw a chain of dissatisfactions, a spiral of tension among the other national sectors. The financial problems of the national government persisted and were soon aggravated by international events. The Mexican government devalued the peso. Venezuela’s relations with the United Kingdom were strained, owing to the Falkland Islands crisis, and there was no more access to jumbo loans. During 1981 and 1982, the
President of PDVSA resisted pressure from the national government to provide cash; in September of 1982 authorization was granted to move PDVSA's reserves to the Central Bank. Industry executives discovered that they had few allies to defend them at this time, but in 1983—after the massive dollar flight and subsequent devaluation of the bolivar—the transfer of funds became a political issue in the national presidential campaign.

This chapter shows how the government and the industry, during the elaboration of the Sixth National Plan, engaged each other, struggled and tried to come to grips with their new relationship, as owner and state-owned enterprise, respectively. What emerges is a modified version of the old "government-industry game". In this case the issue is not a case of a better deal with the government, in the form of concessions and prime locations for gas stations, although those issues were still alive and are vital, as I will show in Chapter VIII. The issue here, however, was a new one: investment funds for industry expansion.

The new game, although still largely circumscribed to the oil sector, was played within a larger forum, the context of development planning for all the sectors. And although it looked at first as though the oil sector had "won", in the sense that the energy plan went ahead, it was in another sense a pyrrhic victory, earned at the cost of anger and bad will in other sectors of the nation.
The changes in development planning after the state nationalized the petroleum industry set the stage for a new kind of relationship between the petroleum industry and the state. After nationalization, heavy investments in oil were needed to recover from years of contraction and, as it was believed, to prepare the industry for increased demand. Oil planning horizons were now limited to Venezuela’s own hydrocarbon resources and to the implementation of effective marketing strategies. The new state-owned industry could make itself heard with national policy-makers more than the transnational corporations had been able to do. Oil prices and fiscal revenues were high, and so were expectations in all of the government sectors, but the market outlook was uncertain, and by 1980 OPEC was contemplating country quotas to keep the prices up. And now the Venezuelan state was responsible for preparing the investment plan for the oil sector and for framing it in the context of the national development plan.

The data refer to the Sixth National Plan (1981-1985). The Fifth Plan (1976-1980) covered the period of astonishing oil revenues and expansion of investment in every sector of national life; often specific projects led the plan and in several instances the responsible agencies could not spend their budget allotments. The Sixth Plan was undertaken in 1979 under a new government, Copei, and at a time of fiscal crisis and growing uncertainty. The Seventh Plan, whose first version was drawn up in 1984 under a newly elected
Acción Democrática government, was not adopted in its initial form; there were internal policy conflicts, and the government's debt crisis and the drop in oil prices late in 1985 resulted in the administration adopting short-term plans for the second half of the nineteen-eighties. For these reasons, and because it would have taken too much time to interview new Cordiplán people, this study has no direct evidence on organizational change in Cordiplán after the Sixth Plan. The number of people who left when the draft plan was not approved suggests that knowledge may well have been lost.

The most important discovery from the interview data presented in this chapter, I think, is that there were organizational problems of mutual understanding and adaptation between the oil industry and the Venezuelan state. (In a formal sense the oil industry, as a state-owned enterprise, is also part of the state, but for the purposes of this study it is more useful to consider it as a different organization with important links to the state.) It was not simply that the industry was responding to changes in its national environment (and the market and its intracorporate environment); the national environment was also responding to changes in the petroleum industry, to the uncertainties of the oil market and to the fact of being owner of the nation's major industry. The industry-government game had become more complex and the players were not well prepared to play it under the new conditions.
One speaker said that, owing to nationalization, the Venezuelan state was now an oil-producing and oil-selling state. But I think that both the planning case and the Veba case illustrate that, although the Venezuelan state now owned an oil industry, it is not altogether true, or it is true only in a very legalistic sense, to say that the state was now an oil-producing and oil-selling state. In organizational terms—ways of perceiving, acting, framing problems, setting priorities—these data show that it was not true, and that was part of the difficulty of the relations between the industry and the state.

What first becomes clear from the above analysis is that "the state" is a very general concept, too general to be useful in terms of understanding organizational change. The state is better understood, I argue, as what Warren calls a field of organizations that includes, in this case, the Ministry of Energy and Mines, Cordiplán, other sectors (such as the education, water and the state-owned metal and metallurgy industries) and the Banco Central de Venezuela. The President of Venezuela also appeared in the above vignette, not only as he was represented by Cordiplán but also directly, when he heard the points of view of the Banco Central and PDVSA on the proposed transfer of the oil dollar reserves. In the Veba case, the Congress and the Attorney General were also protagonists of the state. The political parties would certainly have to be contemplated in a complete vision of the Venezuelan state.
It is true that all of these organizations depended, and still depend, in different degrees upon oil revenues and that the oil industry is clearly in the hands of the Venezuelan government and Venezuelan management. But most of the organizations that make up the state cannot be qualified as oil-producing and oil-selling organizations.

Of the three organizations studied in this chapter—the Ministry of Energy and Mines, PDVSA and Cordiplán—it was the Ministry which has been close to the industry for fifty years. Yet a former Ministry official admitted that after nationalization it had been hard for the Ministry to move from an attitude of controlling the industry to one of designing petroleum strategy and policy. Owing in part to a network of people in "the oil sector", who had known one another for years and some of whom had worked both in the industry and in the Ministry, these two organizations were able to make effective use of informal communications channels to elaborate the annual guidelines for the budget cycle.

Cordiplán had far less experience of the oil industry than the Ministry had, and the government planner may represent not only his own organization but attitudes and difficulties in other state organizations with respect to the oil industry. Cordiplán was a newcomer to the oil planning process, and it was hard going and quite a different experience from planning for other major national projects,
such as the Guayana development project. In the case of
Guayana, the central government—usually represented by
Cordiplán—initiated at times, intervened, examined the
plans, instituted program budgeting, asked for presentations,
studied the financing alternatives. It was a more
interactive process, with a greater role for Cordiplán and
the respective sectoral representatives. The above accounts
of oil sector planning after nationalization of the industry
indicate that it was a qualitatively different experience for
Cordiplán to plan for a refinery in Amuay as compared with
Guri Dam, for instance, for Nargas as compared with Sidor,
for the criogénica as compared with the aluminum industry.

When Cordiplán wanted to get more detail on oil industry
investment allocation for large projects, which it failed to
do, it was not clear how the information was to be used by
Cordiplán nor whether the Ministry of Mines had access to it.
Clearly PDVSA saw no benefits in providing it and may have perceived it as potentially damaging.

And after nationalization, Cordiplán faced another important
question: how much would be invested in oil by the new
owner, the Venezuelan state, and how would that affect
investments in the other national sectors? So the government
planner raised an issue of competition for scarce investment
resources between the oil sector and the other sectors of the
Plan—education, metallurgy, public works, defense,
agriculture, and so on. He said, "If oil got investment
resources, education didn’t." Yet as two former officials of the Ministry of Mines described the mechanism for developing the energy plan, the petroleum industry investment plan was drawn up practically independently of Cordiplán and the other sectors. This was possible in large part because of the notion and fact of financial autonomy, and the investments were built into the Ministry’s guidelines for the industry. Petroleum industry dividends, after taxes, stayed in the industry (later in the Central Bank, in a trust fund designated for oil industry use). This meant that even if industry funds were not approved for maintaining production potential at 2.8 million barrels a day, for example, they would not therefore be available for education or health but instead for other projects within the industry, such as developing the Orinoco Oil Belt at some later date.

So in macroeconomic terms all state investments came from a common pot, but in the actual planning process leading to the Sixth National Plan, it wasn’t so. Not that the other sectors didn’t pressure for access to more oil revenues—the planner’s story indicates that they did, and loudly. Both former Ministry officials agreed, but they said that the pressure was channeled through the four mechanisms the government can use to increase its share of the oil revenues: an increase in the export value (decided by the Ministries of Mines and Hacienda); increased royalties (Mines and the industry); a change in the tax rate (Congress); and a change in the exchange rate for oil dollars (Central Bank).
Nonetheless, throughout 1980 and 1981, Cordiplán still had to deal with the complaints of the other national sectors who wanted a bigger share of oil revenues for the Sixth Plan. The government planner named metallurgy, water, education, "all the sectors", though he did not specify the projects or financial needs of those sectors, beyond a passing reference to needs for foreign credit and emphasis on metallurgy’s disappointment that the industry had not lived up to expectations on buying Venezuelan inputs.

In 1982, the central government (Cordiplán and the Central Bank) approached the industry for cash loans, as fiscal revenues diminished with the weakening oil market, while early payments on mounting public foreign debts came due. PDVSA refused to provide the loans, on the grounds that they would constitute a transfer payment. The Minister of Mines defended the industry for a time, but finally he withdrew his opposition to the move.

The events culminated in the reserves being moved to the Central Bank in September 1982, where they were earmarked for industry use but where an equivalent amount was made available to private purchasers who expatriated four and a half billion dollars in four and a half months, until the government devaluated the bolivar in February of 1983. Several oilmen, looking back at these months, remarked that almost no national group came forward to defend the industry at that time. It had been a bitter surprise. Much of that
surprise, I think, can be explained by the different backgrounds and ways of seeing of the oil industry and the state organizations with respect to one another, as they are illustrated in this chapter.

I argue above that the oil company director and the government planner showed very different perceptions of planning, and that these perceptions have organizational roots. This means that the two speakers reflected more than individual differences; when they said, "we" and "they", as they talked about their respective organizations, they represented their organizations, or acted as agents for them.

The issues are organizational in another sense: they refer to organizational questions that can be distinguished (but perhaps not separated) from the political, legal, economic and technical realities that also shape the organizational behavior and outcomes of the Venezuelan petroleum industry and Cordiplán. It is worth reviewing those realities here. In brief, it is an economic reality that the oil market is inherently unstable and that it has become less predictable since the early 1970s, so it is harder to predict oil revenues now than it used to be. And the OPEC quotas, part of the search for artificial stability to replace the price arrangements among the seven major transnational companies, also introduce a new constraint on producer nations. It is also true that oil production cannot be increased from one day to another, because oil investments are large and take years to mature.
The Venezuelan industry has been nationalized and the state is owner, an important legal reality which implies greater state control but also, in the eyes of some oilmen, a better chance for the industry to influence oil policy. And oil revenues still provide most of Venezuela's foreign exchange and about two thirds of government income, and the foreign debt did create extraordinary pressures on the oil industry to supply cash to the government during the early 1980s. Venezuelan politics are highly polarized, so that oil policy can easily become a political issue--given the size and weight of the revenues, how could it be otherwise? And Cordiplán does operate in that national political forum and must achieve some political balance among the sectors of the government.

But the results of the present study show that, besides these important realities, there were differences in behavior and perception that grew out of the different histories and specific organizational conditions of the petroleum industry and parts of the public administration. These organizational differences affected the nature and outcomes of some interorganizational endeavors. And interorganizational endeavors became more important after nationalization, because petroleum investment decisions and petroleum marketing strategies were made within Venezuela, not only in the context of the international business environment but also in the context of the national political economic
environment. To make the situation even more complex, both of these environments changed between 1976 and 1985.

There was a problem of mutual perceptions. To understand it better, a closer analysis of the sources of the organizational differences (and of the interorganizational dynamics) is needed. In the case of the oil industry and Cordiplán, for instance, such an analysis might begin with the sources of organizational differences.

The organizations have different histories and experiences. Even the lengths are different, 70 years of the oil industry versus 25 years of Cordiplán, as well as the very reasons for being created, the actors themselves and the processes. The oil industry was a large and powerful business, while Cordiplán was a small advisory office to the President of Venezuela. Oil industry salaries were much higher than those of the public administration and the industry prided itself on longevity and merit promotions. Public administration employees, even those without a party commitment, could expect to be changed at least every five years and maybe more often, as power shifted.

Oil industry employees had lived and worked in many parts of Venezuela (and in other countries) but separately from the rest of the Venezuelan economy and political framework: schools, living units, clubs, commissary were all separate. English was a language of trust among managers in the oil industry, a fact which relected the industry's international
history and the frequency with which industry employees had been educated in the United States and Britain. English—or any other foreign language spoken by Venezuelans in Venezuela—produced anger in Cordiplán and in other parts of the public administration.

The organizational missions and kinds of work were different. Cordiplán represented the President of the Republic and in this way its mission was both political and technical. The oil industry, while it was an essential component of the national political framework, was at most levels expected to focus on profit and efficiency and to avoid party politics. And in order to achieve its goals, to make a profit, it had to move effectively in an international, highly competitive oil market. Cordiplán also moved in a competitive environment, made up of a host of articulate national actors.

The organizations recruited managers from different professions, and for very different kinds of work—drilling and selling of oil versus the "softer" or more vague job of preparing national and regional development plans. There was in Cordiplán a more informal style of management and communication, while oil industry management was more enclosed, systematized and hierarchical.

The oil industry actually supervised and controlled the execution of its plans, and the investments were enormous. Cordiplán had no power to control implementation of the
national development plans and had therefore to rely on negotiation and convincing.

The differences sketched above produced, inevitably, different organizational attitudes and perceptions, and these made mutual adaptation even harder. The unique history, experience, mission and kind of work meant that the petroleum industry had inherited a situation of relative privilege in Venezuela, of little need to interact with other sectors except at the very highest levels, of being an orderly and efficient exception in a country that often describes itself as being disorderly. Industry managers who were interviewed often expressed a fear of being "contaminated" by the national environment now that the oil industry was a state-owned enterprise. And the awareness of Venezuela's great dependence on oil revenues could lead easily to a sensation that what is good for oil is good for the country—or, as one oilman said, that when the oil industry catches a cold, the rest of the country gets pneumonia. But that stance, I believe, ignores the complexity of Venezuelan society and underestimates the importance of other sectors in national political life.

Cordiplán, in turn, drew on a history of negotiating and balancing the needs of national actors, many of whom were in charge of providing services to the electorate and all of whom want increased access to government revenues. Oil revenues had traditionally been an input on which to base the
national plan, that is, oil was a "reference sector", and a reliable one. Now that it was also a sector whose investments were to be financed by the Venezuelan state, in the framework of the national development plan, Cordiplán had little relevant background and had in fact to be guided by the Ministry of Energy and Mines and the oil industry itself. At the same time, oil revenues were harder to predict.

The respective positions of Cordiplán, the Ministry and the oil industry, as evidenced during the elaboration of the Sixth National Plan, reflected different perceptions or "ways of seeing" that were the result of multiple organizational factors and interests. The relationship between the Ministry of Energy and Mines and the oil industry had a longer history and its changes since nationalization were especially interesting in the light of organizational adaptation, or mutual interorganizational adaptation, to the fact of nationalization and the increasing uncertainty of the oil market.

What emerges from the above analysis is the relation among organizational background, ways of seeing, communication and the outcomes of interorganizational endeavors. These relations showed up in the planning process. There were both successes and failures. The joint elaboration of guidelines, between the Ministry and the industry, made effective use of informal networks of trust and common experiences and appear to have been an important success. Cordiplán and one oil company began to understand one another's respective
approaches to planning in the early 1980s (but the change of administration in 1984 resulted in new appointments in Cordiplán and it is possible that much of the learning had not been incorporated into the organization itself).

But the industry failed to perceive the "spiral of tension" that culminated in the oil dollars being moved to the Central Bank, and industry managers were astonished and dismayed to find that at that crucial moment no allies came forward to defend it—not even its own union representatives. And both the industry and the state (in this case, Cordiplán) were still coming to terms with the implications of uncertainty in the oil market.

These organizational and interorganizational issues were accentuated by nationalization and they were at the intersection of oil business issues, national environment issues and institutional or intracorporate issues. And they were issues that could make a difference in the organizational outcomes—investment allocation and financial control were two of them. The above vignette suggests that when perceptions and contexts are very different, communications on crucial issues can easily break down. With a break in communication and in trust on both sides, errors—in the general sense of unwelcome outcomes—can be expected, but the exact nature of the errors is hard to predict. The impression from this story is that as organizational communications broke down, decisions did not follow a
carefully designed national financial strategy and, in the longer run, all of the participants were dissatisfied with the outcomes.

The relations between the state and the nationalized industry were far more complex and tighter than they had been under the concessionaire regime. The old "government-industry game" had been transformed into something more important: the need to work jointly on the conceptualization and design of long-term strategies for Venezuela's future which for years to come will lean heavily on oil revenues and which, if those revenues are to be invested effectively, require far more of a common base of understanding than was evidenced in these interviews. Many of the joint endeavors that were successful owed part of their success to the effective use of informal channels of communication and decision. But it is not at all clear whether those channels are adequate for mutual reflection on the longer term needs of the country and the oil industry, nor whether the network of trust has extended to the new units of the government that now have a role in controlling some aspect of the industry's activities, or to the younger generations of politicians, bureaucrats and oilmen.
VIII. RESPONDER TO THE CHANGING INTRACORPORATE ENVIRONMENT

Nationalized enterprises are assumed, in this study, to be a distinguishable subset of state-owned enterprises because of their organizational history and culture of behaving as private firms. The literature on state-owned enterprises focuses on the dilemma of control and autonomy as the enterprise responds to the pulls from the state and the market. The present study examines, besides, the nature and requirements of the internal or intracorporate environment of the nationalized enterprise—an environment shaped by a history of behaving with considerable autonomy of action, by accumulated knowledge about the business, and by a particular organizational structure and strategy.

With respect to the case of the nationalized Venezuelan petroleum industry, Chapter VI centers on the organization’s responses to the international business market, as the industry geared up for expansion during the optimistic late 1970s and as it then undertook a new strategy of downstream internationalization with non-traditional partners to assure markets for its heavy crudes in the uncertain 1980s. During the 1970s, most of the contradictory demands were between the needs of the market and the needs of the newly nationalized and restructured organization; the state acted above all as facilitator. The industry at this time had to overcome a culture of scarcity, internal rivalry among the former concessionaires, and dependence on the transnational distribution networks. At the same time, it made good use of

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its knowledge of the oil business and its cultural traits of corporate discipline, teamwork and morale to rebuild exploration teams, build up production potential and undertake major projects, especially to deepen the refining patterns. There were instances of organizational innovation, in response to the threat of erosion of the working conditions and system of merit promotions (the case of Agropet) and in response to the shortage of skilled labor (the drill school for tool-pushers.)

During the 1980s, the Veba contract, another innovative industry response to middle range uncertainty in the oil market, was successful in business terms but not in terms of the national political environment, which brought the whole strategy to a halt until the market weakened so severely that it looked, even to its opponents, like an inevitable step. The industry discovered in those years that it had few allies in the national environment and that it was not prepared to communicate effectively with the various parts of the state which could support its actions, or call them into question; part of the difficulty, I argue, was an identity crisis—managers were not, even in 1985, sure whether they were a part of a private or a public enterprise, and this hampered them from dealing with typical state-owned enterprise dilemmas. The source of the problem was historical, and it was reinforced by the state's injunction to continue to act as though private in many ways—paying taxes to the treasury is the most evident one.
Chapter VII analyzes the industry's interactions with Cordiplán and the Ministry of Energy and Mines, as they drew up the energy investment plan for the Sixth National Plan. The chapter concludes that nationalization, and specifically the creation of PDVSA, resulted in shifts in the relations between the Ministry and the industry. It further concludes that the distinct organizational histories and missions of the industry and of the state—in this case, Cordiplán—had created different perceptions and communication problems that contributed, in the early 1980s, to interorganizational outcomes that were not entirely satisfactory to anyone. The old government-industry game had become not only more complex but, since it now included the issue of oil investments, far more crucial for the nation's future, and the players were not well prepared to understand fully its new quality nor to analyze the nature of the dialogue between them.

Chapter VIII focuses more closely on the responses of the organization to its own changing intracorporate environment between 1976 and 1985. These dynamics can explain many of the difficulties in dealing with the market and the state, and some of the successes. The major internal changes which required management's attention and which at times were contradictory to the requirements of the market and the national environment were detailed in Chapter IV: the transnational holding companies left and PDVSA was created, a new federative structure was adopted and then adjusted and
there was a change in scale, as industry investments and work force expanded greatly and then, after 1982, stabilized.

The chapter is organized around the story of building PDVSA and its relations with its affiliates. The creation and development of PDVSA can be attributed to the nationalization of the Venezuelan petroleum industry and to the need to fill some of the vacuums left by the multinational holding companies, especially international sales, finance, corporate planning, human resource development and research. Yet PDVSA, as a new layer between the Ministry and the operating affiliates, was a deliberate choice. At least two other options were considered: the Ministry of Energy and Mines and the existing state-owned company, the Corporación Venezolana del Petróleo.

The process of building PDVSA was unusual because the affiliates already existed, they were strong and they were used to dealing with the Ministry of Mines directly. Most of them had a long history in Venezuela and several had been major producers within the international oil industry.

Amuay, for example, was one of the biggest refineries in the world. Shell Venezuela once produced more income than any other subsidiary of Shell International, and Creole was for years Exxon’s major producer. Before nationalization, the affiliates had competed daily with one another for international sales and for the best possible deal with the Venezuelan government. Now they were to act as parts of one national corporation, under a single, incipient state-owned
holding company which was at first directed by relative outsiders to the oil industry itself.

During the interviews, two images were often used to describe the process of building PDVSA: columns building the roof over their own heads, and daughters educating their mother. But those daughters did not know each other well and were suspicious of one another. Besides, even though they knew their own needs and activities for operating the industry, and carried the industry into the nationalization period without interrupting sales or production, they had had little experience in guiding, designing corporate strategies, dictating policy and controlling the affiliates—and doing all this without operating directly. In 1985 the lack of the strategic vision was evident, and while there was a greater integration of the parts, the corporate view did not always prevail over the sense of belonging to one unit or another, and there was a fight for survival among the three smaller operators which, in 1986, were in fact compressed into two.

The analysis shows that in general PDVSA grew and became stronger over time, but that the various holding company functions developed unevenly and differently from one another. The evidence also shows that the organizational "vacuums" left by the multinational companies were not total; in each new function there was some past experience to go on. It often came, not from the "daughters", but from Venezuelans who had worked overseas with one or another of the
transnational holding companies, or from others in the Hydrocarbons Division of the Ministry of Mines—since PDVSA was closer to the industry than the Ministry was, and offered much better salaries, there was an inevitable flow of qualified people from the Ministry to PDVSA. It is also clear from the interviews that there was a constant state of tension between PDVSA and its affiliates, a situation of mutual adjusting and negotiating, so that the process of integrating the affiliates and of strengthening PDVSA was not simply a sequence of rational steps but, at least in some cases, a question of the affiliates holding onto their power until the environment—notably retrenchment, in the 1980s—made it essential to act more closely with one another under PDVSA’s guidance. This process was still alive in 1985.

A most crucial change in terms of the industry’s future was the hiring of many young professionals after 1976. Since the work force had been contracting for years before that, there were by the 1980s generations of managers—a solid group of veteran managers and directors at the top of the pyramid, a notable shortage of middle managers and a large group of newcomers, hired directly into the nationalized industry. The evidence shows that there were differences between the old-timers, who were already retiring, and the generación de relevo, but the specific nature of the differences was not known and this implies that the industry of 1985 was not clear about how it was forming the industry of 1995 and 2000.
Chapter VI described the development of the international sales function, where the initiative was left in the affiliates and where PDVSA worked to build its strength in this area, to enhance coordination among the affiliates and to step in at times to protect the general interest of the industry. Finance, planning and human resource development are discussed below. The information on maintenance, exploration, production and operation, refining, and materials was included in Chapter VI. Hardly anyone referred to domestic sales, research or transportation.

Finance

The evidence is mixed about where the guidelines for organizing PDVSA originated, whether in the Ministry or in PDVSA—they may well have been the outcomes of joint decisions made over time—but several people said that inside PDVSA the overall vision of how the new holding company would look and work came from one man, a Venezuelan oilman who had been overseas for years with a major multinational holding company. This was certainly the case in finance.

The finance function was definitely needed to fill the organizational vacuum left by the multinational holding companies when the industry was nationalized. Finance started in the center, in PDVSA, even before 1976. The funds, the budget and the financial information were all centralized from the start, and this gave PDVSA great power (Interview 38.1/1-2).
First it was necessary to homogenize the financial information from all of the companies for consolidated financial statements. Although the task was new, there was relevant expertise in Venezuela—not in the "daughters" or subsidiaries of PDVSA, but instead in the Ministry of Mines, which for twenty-five years had been preparing consolidated information for the whole industry. Modern accounting methods and hands-on experience in adjusting the information from the respective concessionaires were skills that had been built in Venezuela over the years, as the state strove to gain ever more control over its oil industry. And these skills proved useful when the industry was nationalized (Interview 31.2/1).

As PDVSA strengthened its expertise in financial information, the Ministry of Mines was weakened. PDVSA was the new center, it was close to the action with the affiliates and it was able to pay much larger salaries than the Ministry could. The inevitable flow of qualified people from Minas to PDVSA left the Ministry in a difficult position to oversee the state-owned industry (Interview 69).

When PDVSA decided to leave the respective financial reporting systems intact, it confirmed that the affiliates did not for the moment have to synchronize their actions in this area. They could report as they had been doing in the past, following the respective philosophies and procedures that they had inherited from the multinational.
concessionaires. Each one had to prepare its budget and report to PDVSA, but common efforts among the affiliates were not required, as PDVSA took it upon itself to homogenize the information and prepare a consolidated statement.

Right away there was criticism from organizations of the national environment about this decision. The environment—Cordiplán, the Ministry itself and the universities—wanted "a nice, big orderly oil industry". PDVSA—at least one executive in PDVSA—felt it necessary to answer the critics and explain PDVSA's reasoning, in speeches (Interview 38.1/1). But beyond this, the objections do not appear to have affected the industry's financial decisions in the early years of nationalization, and in fact the industry enjoyed considerable financial autonomy throughout the 1970s. In 1979 the refinery projects were questioned, but they were not stopped.

The real test of financial autonomy came in the 1980s, with retrenchment. As the government's debt grew while PDVSA's dollar reserves were immense, the situation changed. As described in Chapter VII, the government took action to control those reserves directly. As a result, by 1984 the industry had had to learn to dialogue with the central government in order to achieve continued financial self-sufficiency, and we are told that the dialogue had worked. Still, there were signs of reduced autonomy in financial planning, "red tape" that limited the industry's discretion to deal in the international money markets. Corporate cost
control was tightened after 1982, as PDVSA redefined the control and audit of the major projects (Interview 56.3/1-2).

Corporate planning

Corporate planning for the Venezuelan petroleum industry, before nationalization, was largely a transnational holding company function, so that when the concessionaires left Venezuela there was an organizational vacuum that had to be filled by the nationalized industry. In time, PDVSA filled the gap. But that is not the whole story.

In the affiliates there were threads from before, precedents, to some extent in CVP (about which I have little evidence) and certainly in Creole and in Shell de Venezuela. There was a small department in Shell de Venezuela, close to the Board, which looked to the future and informed the holding company; besides, Shell de Venezuela had for years balanced the supply requirements among the refineries of the Caribbean (Interviews 38.1/1, 41.1/1 and 54.1/4). And each year Creole had developed its own long-range outlooks, in a cycle with Exxon (Interviews 14.4/4 and 59.1/10). At least some of the people who had staffed those departments stayed on to work with the nationalized industry. The Ministry of Mines had also done long-range perspectives (Interview 54.1/4).

What was lost at nationalization, apparently, was the organizational expertise for preparing sophisticated world-wide scenarios for the transnational industry, the kind of
scenarios that are described in Chapter IV. International oil market forecasts were from time to time contracted by the nationalized industry in the form of conferences, seminars and consultations, but this is not the same as an on-going institutional effort to foresee the international market and to motivate all of the managers to imagine alternative contingencies. So it may be—but has not been confirmed in this study—that without the multinationals, the industry had a more narrow and less detailed vision of the international market. Besides, Exxon and Shell International had been major actors in the oil market all over the world and they could in some measure shape the behavior of that market, or at any rate they could balance their risks among subsidiaries in many countries. In contrast, the nationalized petroleum industry in Venezuela had less control over the market and fewer alternatives to offer it. The nation's association with OPEC—a larger, more heterogeneous group of producers—was an imperfect substitute.

The event of nationalization in 1976 was compounded (and triggered) by the sudden price hikes of the 1970s, which stimulated major investments and forced industry managers to concentrate on the immediate tasks of recovering production potential and adjusting refining patterns, of gearing up. The evidence says little about how the early investment decisions were made, or at what levels, but this was "planning of the first order" (Interview 11).
Corporate planning as an organizational process started later, in the operators, and moved thence to PDVSA. There it grew stronger after 1981, as retrenchment made the investment choices harder. Maraven, of all the affiliates, had inherited the greatest strength in corporate planning, and that the planning coordination in PDVSA had built upon that strength (Interview 48.1/6).

At the time of the interviews, in 1984 and 1985, hardly anyone in the industry was thinking about the longer range—even up to the year 2000. The development of the Orinoco Oil Belt’s reserves had been postponed and the hydrocarbon base had been sufficiently studied for the moment. Excepting the domestic market and technology, said a PDVSA planner, "the rest is the market, and that’s a question of lots of speculation and little control" (Interview 54.1/5-6). My impression is that uncertainty was so great that for a time it blurred or even blocked any vision of the future. More serious, this was also true in the Venezuelan state, which was closely focused on its immediate strategy for repaying the foreign debt.

The OPEC production quota imposed an important constraint on the industry’s exports and required a careful design of the export package. In time, the quota brought into question the sense of maintaining production potential well above the OPEC assignment for Venezuela, a costly strategy.
Building corporate planning was different from building finance. They were both holding company functions that had been centered overseas before 1976. But finance started in PDVSA right at the beginning and gave the state-owned holding company its major strength: the industry was consolidated there through the budget. The early organization of finance and the elaboration of consolidated financial statements drew on experience from the Ministry of Mines and from one or more Venezuelan oilmen who had been with the transnational holding companies overseas. Corporate planning as a regular industry function started much later and drew upon experience in the affiliates.

Two contrasting views of the planning cycle, one from PDVSA and the other from an affiliate, may reflect the lack of an overall corporate view among the parts of the newly structured organization. The visions were set in different parts of the organization, one in the holding company and the other in a subsidiary, or affiliate. One started in the planning coordination of PDVSA, with previous input from the functional coordinations (Interview 38.1/3-7); the other started right at the top of the affiliate, where the President and the Board specified company strategies and guidelines (Interview 48.1/6-7).

The PDVSA executive portrayed a reasonable, bureaucratic process, a series of adjustments that culminated in the five-year plan, together with the financial plan and budget. This man emphasized thinking—thinking about the future, the
delicate process of thinking, so delicate that some
duplication of effort, some "checks and balances", were
acceptable because no one person, however thoughtful, could
be expected by the organization to be on target all of the
time. He wanted all of the parts of the organization to
participate in the middle range plan. PDVSA took the lead,
gradually incorporating the affiliate presidents and later
asking the affiliates to say what they were able to do.

The affiliate executive, in contrast, emphasized tensions,
problems of role definitions, conflicts and negotiations.
His was a story about the affiliate's fight for survival as
an organization, a vital struggle where there would be
winners and losers. The Ministry might approve the action,
but PDVSA might not approve the funds. And PDVSA, in this
version, was not neutral; it might be influenced by his
company's enemies. The 1984 budget could mean the very
viability of the affiliate, given the problem of limited
reserves that it faced at that time. And there were tensions
inside the company, too; he sensed strong pulls among the
powerful divisions which had great autonomy. The
restructuring of the industry in 1986 bore out his worry
about viability (although his affiliate was one of the
winners), as PDVSA compressed its four operators into three
and redistributed the reserves among them.

Duplication of efforts, in his view, was just that—a waste,
a sign that roles had not been defined. Checks and balances
were worse, "somebody looking over your shoulder". And
PDVSA appeared as an outsider to the planning process as he
sketched it. It had done a good job of ranking, but it had
also cut back and even intervened in the affiliate's budget
proposal.

It is not surprising that there are different perceptions of
an organizational process within so complex a structure, but
these two views barely touched on each other: PDVSA was the
crucial unit in one view and the affiliate board was the
initiator and monitor in the other. The PDVSA Director
referred in passing to state goals for the industry, but the
Company Director stayed almost entirely within the affiliate.
Without further data it is hard to interpret these contrasts
or to know if one view is a more accurate picture of the
actual planning process than the other. At the very least,
the Company Director's view suggests the possibility that oil
sector planning does not start either in the Ministry or
PDVSA, but in the operators themselves. More probably,
certain elements start in different places. Certainly these
distinct visions of the planning process illustrate the
internal tensions and the complexity of the intracorporate
environment of the Venezuelan petroleum industry after
nationalization. They show how its configuration generated
internal demands that required management's attention if the
industry as an organization were to keep sufficient
equilibrium and integrity to respond effectively to the
international market and the national political environment.
Human resources

The national environment had begun to change gradually long before nationalization in ways that affected the human resources or personnel function in the petroleum industry. A personnel executive, who had worked in the industry for over thirty years when he was interviewed in 1984, outlined the changes in the Venezuelan environment that had, he thought, resulted in a different kind of petrolero in the 1980s, different from the oil workers of the 1950s who thanked their lucky stars for a job in the industry (Interview 35.1/6). His point was that many of the changes in human resources after nationalization did not actually result from nationalization.

Venezolanización of the oil industry personnel began in the 1950s, as Venezuelan engineers exercised more pressure, through the Engineers’ Law of 1959, to hire national graduates. Then, in the 1960s, the Venezuelan education system began to expand at every level and as the universities grew and diversified, there were more professional candidates for jobs. As Venezuela industrialized, new firms, especially near Valencia, began to compete with the petroleum industry for young professionals. At the same time, fewer petroleum engineers were being graduated, because young people no longer wanted to limit their opportunities to one very specialized industry.
Another result of the expanded educational opportunities in Venezuela after 1959 was that more women began to join the work force, often as professionals. As the industry began to hire some of them, the personnel staffs had, for example, to deal with professional couples rather than with men whose wives would accompany them wherever they were assigned. Maternity leaves and child care had to be planned. Men and women had to learn to manage new working relationships, especially as more women moved into supervisory positions.

But what this man sensed above all was a deterioration in attitude and values, and less commitment to the organization. He believed that most oil companies in the world were facing it, especially in production and exploration, which require years in the oil camps. Before nationalization, he said, there was more mística; the priority was the organization. "Now the priority is the people."

The work force had also shrunk after 1950. It was cut back from over forty thousand in 1960 to twenty-four thousand in 1970, in response to the government's policies of greater control. Just before nationalization there were less than twenty-four thousand people working for the oil industry concessionaires, and almost all of them were Venezuelan nationals.

After 1976, the structural changes within the industry also elicited responses in the area of human resources. As the multinationals left and PDVSA was created, as the new
federative structure was adopted and adjusted, as the scale of the industry grew with new investments and expectations—as these changes occurred, the organization responded. In the area of human resources, the responses fell into three categories of tasks: protecting the merit system for Venezuelan oilmen, integrating human resources from the various companies, and hiring and incorporating large numbers of people. The responses had implications for the future generations of managers, and they are discussed at the end of this chapter.

Many responses of the Venezuelan petroleum industry to its own changing intracorporate environment—responses in the area of human resources—had to do with protecting the merit system for Venezuelan oilmen. Before nationalization, as the above personnel manager said, the efforts had been directed toward including more Venezuelans on the concessionaires' staffs, in ever higher positions. But as nationalization approached, attention was directed instead toward possible incursions of party politics into industry management.

The oil industry executives dreaded politicization of the industry. It is a fear that persisted, and it was rooted in the years of being protected from overt party politics at most levels, as well as in the event of nationalization and the fact that in Venezuela, as in other countries, state-owned enterprises are often run by politicians, to the detriment of efficient management.
In 1975 it was evident that the decision to nationalize the industry would be made soon. Many managers who were interviewed about their views on nationalization (Luque Quiñones and Rodríguez Sosa 1975) did not oppose it; over half of them expressed agreement with the decision to nationalize the industry, for reasons of nationalism and sovereignty and because they believed that Venezuelan managers were ready to handle the industry. Nonetheless, over half of them doubted that their own working conditions would be guaranteed after nationalization; only a third were optimistic. Employment, selection, personnel development, training and salaries were all concerns; government ownership would bring party politics into the industry, and "The politicians will try to eliminate the oilmen's privileges."

If their fears came true, the most highly qualified people would leave and internal conflicts and demoralization would ensue. Apathy, breakdowns in communications, distrust, uncertainty and lack of control would result if politics entered the industry after nationalization. The eventual organizational outcome would be inefficiency. The optimistic group thought that the government would see the good sense of protecting an efficient oil industry.

Some of the optimistic group belonged to Agropet. Chapter V refers to this organization of Venezuelan oilmen in the concessionaires who worked from 1974 on to create a voice from within, to advise the President of Venezuela and the Congress with regard to the importance of preserving and
protecting the industry's merit system of promotions and employee benefits. And in effect, Article 24 of the Nationalization Law did guarantee oil employees the same conditions and norms that they had enjoyed with the concessionaires, in accordance with the transition strategy of continuity in the service of change, and most of the concessionaire employees did stay on to work in the nationalized industry.

After nationalization, Agropet continued to follow individual cases. For example, a PDVSA Director was removed from the Board, allegedly owing to differences of opinion with the Minister of Energy and Mines. When no arrangements were made to place him elsewhere in the industry, Agropet protested to the press and to the Minister himself. The group believed that its actions led to a compromise solution, whereby the dismissed director was appointed to the Board of one of the subsidiaries rather than being removed from the industry altogether (Interview 36.1/4), but another speaker did not attribute the dismissal entirely to politics (but to negligence) nor the reinstatement exclusively to Agropet's intervention (Interview 14.5/8).

Even though the merit system, the employee benefits and many norms stayed in place after nationalization, it is significant that it was necessary to consult with various sectors of the country, with the world beyond, for this to happen—significant, because what had been given might be
taken away, or at any rate diminished. Indeed, in March of 1984, Venezuelan President Jaime Lusinchi announced that salaries of all public sector employees who earned more than Bs. 16,000 a month would be cut by ten percent; this salary group included almost all of the oil industry managers and practically nobody else. The decision was presented as part of a package of austerity measures that responded to the government's financial crisis of the moment, but most observers in the industry and outside it interpreted the salary cut as a sharp reminder to the oilmen that the state was boss. Industry managers expressed great resentment, but official industry policy at the PDVSA Board level was to accept the cut with good grace (Interview 80).

There were danger signals before 1984. Five decisions were cited over and over again in the interviews as signs that national party politics could move into the nationalized petroleum industry. All of them were made under the Copei administration and most of them were attributed to Minister of Energy and Mines Humberto Calderón Berti. The terms of office of the PDVSA Board members were shortened from four years to two. A second vice-presidency was created on the Board, to which Minister Calderón Berti appointed a personal friend (who was, several speakers admitted, a highly qualified oilman, but whom the Minister might telephone directly, over the heads of the President and first Vice-President of PDVSA). PDVSA's foreign exchange was moved to the Central Bank of Venezuela. Some PDVSA Board members were
appointed or dismissed for reasons, apparently, of political affiliation. and in 1983, President Luis Herrera Campins appointed the incumbent Minister of Energy and Mines directly to the Presidency of PDVSA.

This appointment was greatly resented; it went against the grain, against the organizational value of merit promotions, against the traditional sense of predictability and seniority. Even the timing was irritating. Before nationalization, the announcement of a new company president would have been made months before the appointment was actually formalized. In contrast, in August 1983 the company managers were held in suspense until the last minute, and they got the news together with the rest of the country. When the appointment was announced they were angry; it had created a sensation of needless unpredictability about the industry's top leadership (Interview 2.5/1).

But the threat of incursions seemed still to be limited to the holding company; one man pointed out that the "system", the existing organization, rejected political appointments. Minister Calderón's appointment to the Presidency of PDVSA lasted only six months, after which he was dismissed and replaced by a veteran oilman, Brígido Natera (Interview 56.2/2-3).

Though politics hadn't come into the industry by political appointments, which was the initial fear, it was entering by laws from the state, so that the industry's strategy to
counteract politicization was not effective—in the conceptual terms of this study, it was a maladaptive response and it came from insufficient understanding of the national environment. The industry had developed a strategy to avoid political appointments, so new governments wouldn’t be appointing managers, and this strategy was bought by the political parties. And the parties had pressured very little to have people inside the industry. So politicization hadn’t come that way, but instead from the Congress, from the state. The Banco Central de Venezuela had limited financial autonomy. The Ley de Salvaguarda required salaries of all personnel to be registered, which opened a channel for that information to go to the Oficina Central de Personal. The Attorney General of the Nation had a potential role to play because every contract between a state-owned enterprise and any entity, including labor, had to be authenticated by the Attorney General (Interview 51.1/2-6).

This assessment is important for organizational adaptation. The national environment was complex and politics cut across it in many ways; dealing with the party leaders was not enough to keep party politics out of industry management. Incursions might take several forms, and communication with the environment had to be carefully designed and carried out if the organization was to respond effectively to the national environment.

These examples illustrate the levels of organizational change set out in Chapter II. Level I behavior, before
nationalization, was to stay aloof from the national political environment, keep a low profile, and attend to the job of producing and distributing oil. After nationalization, there was a perceived threat that politics would enter the industry from the national environment.

The Level II response, in both these cases, was to communicate with party leaders to assure that they would not appoint managers or that they would endorse the joint venture with Veba Oel overseas. Neither response was totally effective; in one case politics began to enter by mechanisms other than political appointments, and in the Veba case, the industry's action was attacked, not endorsed.

At Level III, the observed pattern was to deal with politics by communicating directly with the party leaders. At Level IV, the group of managers and the above company manager, respectively, reflected on the pattern and inquired into it, and they qualified the organization's efforts as errors (because they did not work). What is still not clear is whether or not these two examples of reflection and inquiry into the change process were individual or isolated examples or if they can be called organizational responses at Level IV, in the sense of forming part of a continuous, concerted and convergent effort.

I think the managers' reflections on the communications problem in the Veba case, cited in Chapter VI—a group of managers in a company-organized seminar, with the attendance
of a PDVSA Director—comes close to organizational inquiry in the sense proposed in Chapter II: "Individuals in their roles, functioning at least in part as agents of one or another organizational unit, may respond to the environment, may undertake inquiry or reflection, may try to influence others and may succeed. ... In this view, ... 'organizational learning' is shorthand for the individually generated inquiry that is about organizational issues and that has organizational consequences." We do not know what organizational consequences the managers' reflections had; otherwise, their reflections look very much like organizational learning.

Venezolanización of industry personnel was of course a source of pride for most managers, and by 1975 there were several Venezuelans at the board level, in Shell and Creole both. But many first line managerial posts were still manned by foreigners, especially in finance, and these people had to be replaced by Venezuelan nationals after nationalization. PDVSA needed Venezuelan directors and managers for its fourteen subsidiaries, and there weren't enough high-level, experienced managers to go around. So several people were promoted faster and higher than they might otherwise have been (Interview 42.1/1), and the evidence from the interviews says that as often as not the new managers and directors rose to the occasion—exploration was an example, cited in Chapter VI.
Nonetheless, as least one old-timer worried that the industry still hadn’t managed to replace the international experience that the foreign staff used to bring to Venezuela; in fact, he implied that it simply wasn’t possible to replace it altogether. He spoke of "home-grown experts". Home-grown experts did not necessarily have problems with specific technology, but they lacked the experience that came from watching a particular kind of problem repeat itself in Indonesia, in Argentina, in the Philippines. This kind of expertise does not come from formal training; it requires the breadth of experience that overseas stints provide. But now that the industry was limited to Venezuela’s own reserves and, until 1982, to its own refineries, not many Venezuelan oil employees went overseas to work. This posed a serious problem for the longer range, in an industry whose technology and markets are both international. After nationalization, "You use the outside consultants, the Texans in broad-brimmed hats, if you have access. And you may not be first on the list" (Interview 60.2/1).

The loss of systematic support was a hardship, and the problem of access to foreign expertise would be more sharply felt as the industry’s old-timers retired. Even as late as 1984, the older Venezuelan oilmen still had connections with the former concessionaires, links born of years of working together, so they could still get expert help in an emergency because of personal loyalty built up over years of working together. But these connections had not been passed on to
the younger generations. This is an example of individual, not organizational, adaptation to the fact of being cut off from the transnational companies, and it may be a problem of generations of managers; if so, it is an organizational problem.

Integrating human resources from the various affiliates was not essential in the first years of the nationalized organization. Before nationalization, despite some joint endeavors and some informal communication among Venezuelan oilmen, the oil concessionaires were rivals from very different organizations, and the differences and rivalries lingered in the nationalized industry. The organization design took into account the differences among the companies and, following the transition strategy of caution and continuity, the new structure incorporated the differences deliberately. All through the late 1970s, PDVSA left the initiative for trading and supply in the affiliates and accepted most of the operators' recommendations in this function. There were efforts to achieve coordination among the trading and supply functions of the affiliates, when PDVSA deemed it necessary for the general interest of the industry. But it was hard work to achieve continued cooperation.

Corporate planning in the holding company gained strength only after 1981, and at least one affiliate director saw in the planning and budget exercises a struggle among the major
operators for their very viability, which he defined above all in terms of reserves. Competitive criteria were used to recruit human resources in the early years of nationalization; this is discussed in the next section of this chapter.

Still, in every function there was a need to balance autonomy of the units with the general interest of the organization as a whole. Intracorporate differences were a key organizational issue that had generated two kinds of dilemmas within the nationalized oil industry: cooperation versus competition and incompatible intracorporate cultural differences.

This study approaches the Venezuelan petroleum industry above all as a rational organization that acts as an agent or an instrument to achieve the efficient production, refining and marketing for profit of Venezuela’s oil. But an alternative approach helps to understand the intracorporate environment of the industry, and it is the notion that the organization is a culture, with a pattern of basic assumptions that has been developed to cope with problems of external adaptation and internal integration and that is taught to new members as the right way to perceive, think and feel about those problems (Schein 1985:9). In this definition, overt behavior in an organization is determined both by the cultural predisposition (the patterns of assumptions, perceptions, thoughts, and feelings), and also by the situational contingencies that arise from the external environment.
Both these factors helped to shape behavior in the nationalized petroleum industry in Venezuela.

Nearly everyone interviewed used the concept of corporate culture, usually to explain the differences among the parts of PDVSA and to emphasize the wisdom of the organization structure, the federation of vertically integrated companies. The distinct cultures were a legacy from the multinational concessionaires and the Corporación Venezolana del Petróleo, and there are many examples of cultural differences. They include questions of values and managerial styles, largely intangible matters but important ones. But they also include issues of technology choice, decentralization, professional discretion and communication with the national environment.

Most of the examples contrast Lagoven and Maraven, as direct descendants of Exxon and Shell. There were no interviews in Meneven, but several people in Corpoven and PDVSA expressed the strain of living with several cultures. There were also cultural differences between the veteran managers and the younger people, such as the older men’s trust in their former transnational companies and the younger people’s wider vision of job opportunities in Venezuela.

But cultural differences among the companies and generations were not the only important ones. Within Lagoven and Maraven, anyway, there were striking cultural differences from function to function, and these differences also had their history and their consequences for organizational
behavior. "You could be in production in Shell (or Exxon) for twenty-five years without knowing anyone from the other activities," (Interview 50.2/1). These intracompany functional cultures had persisted after nationalization, but they could not be attributed to nationalization. They had implications for the present and the future, however. Efficiency was harder to achieve in the 1980s; it took more work and more money to get oil out of the aging fields, while the world market was more uncertain. In this new context, the old functional differences in PDVSA's subsidiaries were a liability because they limited mobility and led to underutilization of personnel.

One executive made a more complex analysis of how interfunctional differences inhibited flexibility. He grounded his analysis in a corporate decision of late 1983, when the PDVSA Board instructed its affiliates to freeze employment. This decision was related to each of the three industry environments—the intracorporate environment, the oil business and the national political and economic environment—and it illustrates well the central dilemma of multiple, contradictory demands from the environments.

The decision to freeze numbers of people on the industry payroll rather than to lower costs could be dangerous; it was largely a way to prove to the Venezuelan public that the industry was being guided by a watchful, cost-conscious board. But the companies were still allowed to contract
personnel, so there was no guarantee of cost control. At the same time, the freeze on direct hiring made the industry organization less flexible.

In 1984, career paths were more often functional than global or corporate. This was not a policy that emanated from PDVSA, because "PDVSA was a mirror of the companies", and the companies were used to this kind of functional career design; they were reproducing the 1950s and 1960s, when everything was stable, especially the market (11.5/1-2).

But in the uncertain 1980s, if there wasn't sufficient interface between sales and production, the organization would find it hard to respond fast enough to changes in the market. This was crucial for the oil business. With the OPEC cartel, with fixed prices and member country quotas, competition was for the moment pretty limited. But if OPEC were to weaken or dissolve, Venezuela's oil companies were going to have to be very competitive, and the industry organization was not ready for this. The decision to freeze employment was a sign of this, because "if you say, cut people, not costs, you aren't thinking of competing, because competing means, cut costs," (Interview 11.5/3).

And this went right back to nationalization and the oil industry's new owners--the political parties, Fedecámaras, interest groups, the world beyond. They thought more in terms of a cosmetic effect, or the illusion of control, than of the oil business, and the dividends. PDVSA's job was to
educate the new owner about the oil business. Was the industry going to go the way of men and machines, the functional way, or was it going to go the way of the global view, and become more flexible and more competitive? This was linked to the organization structure of the nationalized industry. Owing to vertical integration, each company was vulnerable, and there was a limit to how much each company could safely cut of its operating and support people, like finance or general engineering. Sometimes support people got underutilized, waiting for peaks. The industry tried to eliminate peaks, but it wasn’t always possible.

Functional careers and functional cultures were tied to the larger issue of decentralization versus centralization, or bureaucratic control ("men and machines") versus business orientation and flexibility. If finance people stayed in finance, refiners in refining, and production people in production, someone would have to put the segments together. Supply might be the converging point, production and refineries, because the clients were the refineries. But this executive was sure of one thing, "You can’t do central planning in the oil business", (Interview 11.5/4).

Inasmuch as the government wanted money in the short term and the politicians wanted patronage, both wanted greater control of the state’s major industry, and this could limit organizational flexibility. Inside the industry, functional careers and functional cultures took away another degree of
freedom, "and the need to be competitive gets lost in the shuffle" (Interview 11.5/3).

Between 1976 and 1985 there were many kinds of responses to the need for integration of the parts of the nationalized industry. One was to build a common human resource system in PDVSA, starting from scratch. The operators resisted interventions from PDVSA, and there was a sense of confusion. In the first years, "We lost a lot of time. There was a stingy attitude toward PDVSA" (Interview 42.1/2-3). But between 1976 and 1978 PDVSA did choose a common personnel system, based on the Shell system, and it built a common nomenclature. PDVSA established principles and criteria; it attracted good people and trained them well. The industry had handled the sudden expansion effectively. It had made many studies and could even correct some of its own errors. There were common targets and a common language. But there was another dimension, a sense of identity, especially in PDVSA. "We want them to have a sense of identity. Some sense of integrity at the same time--that has been the challenge. You have to have loyalty to something--but what?" (Interview 32.1/2-4).

And the problem of integrity and loyalty was critical for executive career planning for PDVSA and all of the subsidiaries, which was now to come out of PDVSA. But all of that had to be created--career development, the corporate vision--and executive positions had to be evaluated. The question of executive career planning didn't seem to be
resolved at the time of these interviews in 1984 and 1985, when several people identified it as a critical decision area. The explicit strategy was the development of a corporate manager, loyal to the whole oil industry, but the above references to company and functional cultures show that as late as 1985 careers were still made more successfully within one company, or even within one production line in one company, so that a manager who tried his luck at becoming the "PDVSA oilman", without establishing a home base in one of the operators or functional lines, might well be left out of the running for the highest positions.

PDVSA, as it undertook to integrate the parts of the industry, had to define or negotiate its relations with its affiliates, and they with it. The idea of functional coordinations in PDVSA was part of the strategy. The coordinations were created one by one, and the subsequent creation of interaffiliate committees was another adaptive response to the need for integration, a mechanism used to bring the companies closer together around the functional coordinations. The interaffiliate committees were non-official groups in the sense that they were not in the statutes. They were, however, congruent with the statutory role of the functional coordinations and they were in fact the mechanism most often used to carry out the role of the coordinations. In practice they were a very important consensus and power-sharing mechanism which made the industry able to work as a congruent whole.
By the 1980s, at least, the PDVSA Coordinator was very important in the petroleum industry. He recommended approval of investment projects, proposed guidelines for the plans and assigned production quotas for the affiliates. He was at the center of the interaffiliate committees, as the highest-ranking technical link with the affiliates, whose respective functions were represented on the committees. The committees might set agendas, explore possible consequences of proposed guidelines and investments, and consult. There were eighteen standing committees, and although they were not on the organization chart, they were very real as a way of operating, and inevitably they acquired lives of their own.

Committees were a legacy from Creole and Exxon, and not everyone in the industry was used to this mechanism. Committee participation takes time (Mejías and Piñango 1983 explore these costs in the case of the Guayana state-owned enterprises), but not participating had a cost also, since each committee member had a vote and a right to veto.

The interaffiliate committees were an intracorporate response to the organization’s need to respond coherently to a changing external environment—to gear up, to explore, to refurbish wells, to refine, to sell—by exchanging information about company activities and technology, or pooling resources in case of an accident. The choice of a flexicoquer for one of the refineries, against the traditional cultural technology of the affiliate in question,
was a positive outcome of such information exchange.

Committees were needed because the industry before nationalization was a set of separate, competing concessionaires and because after nationalization the industry was structured as a federation of vertically integrated companies under a new state-owned holding company. The issue in 1985 was whether the committees would lead to greater standardization and, perhaps, more power and control in PDVSA or, alternatively, would leave PDVSA as a strategic leader looking only at results (Interview 11.9/1-6).

Organizational development was another industry response to the need for integration after nationalization, but it was not new to all parts of the industry. Shell de Venezuela, in particular, had undertaken organizational development in the mid-1960s, when Shell created a major managerial and supervisory training center in Venezuela (Interview 5.2/3). As nearly as I can tell, the notion of organizational culture, as it was used by many of the people interviewed, was coined within the industry by the people who had worked in organizational development in Shell de Venezuela. After nationalization, Maraven used organizational development to ease another process of nationalization, geographical rationalization of oilfields and installations. A special task-force was set up to evaluate the reactions of people to the new arrangements and to monitor the process (Interview 33.1/4-5).
Corpoven was an amalgam of six organizational cultures, like "a painter's palette". A Corpoven director, formerly of Shell de Venezuela, thought organizational development would help the company to agglutinate its productive factors, "looking above all for excellence: planning, communication, interfunctional relations" (Interview 45.1/2). The cultural differences in Corpoven showed up in many ways—in reporting travel expenses, for example, where the word was more important in one company's tradition and the paper in another. And some of the six companies had specialized in light oil and others in heavy, which meant there were different ways of approaching production. In 1977, after the first merger, Corpoven had six production managers, and one had to be chosen among them, "and then you have the other five, and you have to do something with them. And you have six kinds of oil fields." People who had been company vice presidents before the merger of 1977 were pushed down in Corpoven, and many became resentful and frustrated (Interview 45.1/2).

There were other sources of friction. Corpoven descended in large measure from the earlier state-owned company, the Corporación Venezolana del Petróleo. Nationalization had meant something different to the CVP, which was already a state-owned enterprise—and which had been disappointed not to be assigned the role of holding company. On the other hand, CVP had had a reputation in the concessionaires for bureaucracy and politics, and a more liberal discipline, so
that personnel from the concessionaires that were merged with CVP to make up Corpoven were at first skeptical.

Corpoven personnel had difficulties with the other affiliates as well. In 1975 and 1976, the former transnational affiliates--Lagoven, Maraven, LLanoven and Meneven, above all--treated CVP personnel with depreciation and even resorted, on occasion, to speaking English in committee meetings or to making ironic jokes at the expense of former CVP employees. At times decisions were made--the purchase of one kind of equipment instead of another, for example--not according to what was available in the companies and what was needed for the general interest of the industry, but instead according to the relative power of one or two affiliates to impose their preference. At this time, PDVSA's absence was felt and the companies were left to fight it out among themselves. Some odd compromises were reached: a manager would be appointed from one company and the equipment was used from another, for instance (Interview 78.2/6-7).

This account reflects a power structure in the new industry, besides the formal bureaucratic structure, just as the interaffiliate committees and the fight for survival among the three smaller affiliates do. The organizational development efforts--an industry-wide diagnosis of values, workshops and sessions on the hierarchy and functions, efforts to open information channels, a concentration on middle management--were designed and undertaken to create a sense of integrity and loyalty, a synthesis among the parts.
I think that a consideration of power inside the industry—
the loyalty to functions, for example, because managers can
see career paths developing within them—is needed to
complete the picture of the intracorporate environment and to
understand the responses to it.

The lack of direct references to internal politics may
explain, too, why it is hard to distinguish between the
problem of competition versus cooperation and the problem of
cultural differences. If two companies fail to cooperate on
a particular activity, for example, it may be owing not to
"cultural differences" but to an explicit or implicit
competitive relationship between them—the fight for survival
among the three small affiliates is an example.

The affiliate information systems were very different from
one another but this was handled by working slowly and
gradually toward the development of uniform formats for all
operations an financial reporting, a successful adaptive
response (Interview 78.2/6-7) to the need for integration.

Rotation of personnel among the affiliates was another
adaptive response to the need for integration, for a
synthesis among the parts of the newly structured
organization. Before nationalization it was very unusual
(but not impossible) for an oilman—manager, professional or
technician—to move from one company to another (Interview
14.5/6). So rotation of industry personnel among the
affiliates can be attributed to nationalization and to the specific organization structure of the nationalized industry.

But at first almost everyone was left in his old company, while the industry was working hard to achieve continuity, operational normality and expansion in a turbulent oil market, and for the next few years, "the growth was so amazing that no one gave anything to anyone else" (Interview 35.1/6). Only after 1980 did rotation of personnel intensify among the companies, at the instigation of PDVSA. But changes of higher level personnel among the companies were still negotiated at the top. The companies didn't want to lose their best people (Interview 42.1/4), and the managers had reason to fear that a promising career in the home company would be interrupted or jeopardized if they were loaned to another. After 1985 there were exchanges of company presidents and more changes of directors.

Industry-wide training was another integrative response. Many industry-wide seminars and courses were carried out, by INAPET in the early years and later by CEPET. These programs combined personnel from various operators, although the respective operators also continued to train their own personnel. The industry-wide courses, like those in finance, human resources, corporate vision and analysis of the environment, offered by CEPET in 1983, 1984 and 1985, were an important change in the industry's organizational behavior and it can be attributed to nationalization and to the new industry structure.
The need to integrate, to balance autonomy and the general interest, to achieve a synthesis, persisted in the mid-1980s, and this was not a state-owned enterprise phenomenon but a result of the organizational arrangements under the concessionaire regime, from nationalization itself and from the organization structure adopted in 1976. If there had only been one large concessionaire before nationalization, then managers and other personnel would not have had to learn to integrate afterwards. If, on the other hand, the industry had been left as fourteen nationalized companies, all reporting to the Ministry of Energy and Mines, there would have been some integrating to do, but not so much as what actually happened, with the creation of PDVSA and the merging of fourteen companies to four and then to three. If the state, in another possibility, had created one big company, or several functional companies, there would have been a great need to integrate, but at different parts of the industry, principally within each function.
Expansion of the work force

The need for synthesis, for integrating formerly autonomous units, was intensified by the rapid expansion of the industry's labor force, which nearly doubled between 1976 and 1982, when it stabilized at some forty thousand people. Many of the new people were hired to work on new projects and to expand operations. Recruitment was a successful endeavor but incorporation of new people, especially experienced professionals, was more difficult. Manpower planning was a new and controversial response to expansion.

During the first years, recruitment was left in the affiliates, in explicit recognition of the fact that the fourteen subsidiaries were used to being competitive and would find it hard, in these crucial moments, to act together. At this time PDVSA did create several participative committees to unify, where it could, personnel policies across the whole industry. This way the affiliates could compete only on the basis of size, professional challenge, training opportunities and regional appeal. Overall recruitment policy was still internal, in the tradition of the industry. Whenever possible, careers began at the bottom and developed with promotions, on the merit system. At times, during the expansion, experience was replaced with talent and training. The selection technology was inherited from the international companies and updated by modern administrative science (Olmedillo n.d.).
The whole Venezuelan economy was booming in those years, so there was stiff competition for labor at every level. The oil industry looked for Venezuelan personnel at home and abroad and the competitive approach proved successful. But competition softened toward 1980, as the economy slowed down. Overseas recruitment was consolidated in New York by 1982. Still, as late as 1985, the affiliates recruited independently at home, although industry-financed college students, for instance, might be told to apply to all affiliates for work and there was some information-sharing.

By 1981, the recruitment efforts had generated a larger, younger and less experienced work force than in 1976; it was also academically better qualified, as one of five people had a college degree. But it presented a special challenge at the managerial level, a shortage of middle management. There was a concentration of veteran managers with twenty or more years of experience at one end of the spectrum, and at the other a concentration of young professionals with less than five years of experience in the industry. Nearly sixty percent of the managers had been in the industry for less than five years, and twenty percent were veterans within a decade of retirement; only twenty percent belonged to middle management. This phenomenon—the result of shrinking and then suddenly expanding—was called "the hammock" in Maraven and "the hour-glass" in Lagoven, and it was especially serious in production and exploration (Interviews 35.1/5 and 46.1/3-4). It is represented in Graphs V and VI.
One response to "the hammock" was to hire people with skill and experience from other industries, although this went against the industry tradition of hiring at the bottom and promoting from within. Such outsiders had been called "parachuters" in the past, with deprecation. Now they were needed. One company decided to experiment, but it was a daunting experience. They went to Peru and Iran, and succeeded in hiring several experienced people, but once they came to Venezuela, it was a failure. "We were a very closed company, and we had as an internal value that people reach the top only by starting at the bottom: no one comes in at the top," (Interview 46.1/3). Most of these newcomers had trouble incorporating themselves into the industry, and they soon left.

A former Ministry employee who was hired by a concessionaire in the early 1970s had felt the sting of the "no parachuters" value. "I was not considered a born oilman. I was a parachuter, and a parachuter from the state." (Interview 31.2/3). Other Ministry officials echoed this experience, and some Venezuelan professionals from other industries admitted that it took a few years to feel a part of things in the oil industry.

Manpower planning was another response to the need for expansion. Maraven created a Division of Manpower Planning within Human Resources, in 1978. The goal was to coordinate corporate planning, organization planning and manpower planning, and in 1980 all three begin to report to the same
director. Lagoven followed suit in 1979, and in 1980 PDVSA created a Division of Strategic Human Resource Planning (Interview 28.1a/1). This new concept was then passed on to Meneven and Corpoven.

A Lagoven executive referred to an international consulting firm as the catalyst for undertaking the human resources approach. It was to offer an image different from the old industrial relations approach to personnel management, which had centered on collective bargaining, unions, norms, manuals and details, but which provided "no integrating force". Lagoven wanted a change of attitude, and it was decided that the Manager of Human Resources would report directly to the President of Lagoven. As part of the change, Lagoven's human resources staff began to develop the concept of sectors (based on common skills or perícias and organized horizontally) instead of departments (based on functions and organized vertically). The hope was to achieve a company-wide vision that would replace the existing divisions into functional territories (Interview 46.1/5,12).

In 1984 Lagoven was also reviewing its employment structure, in particular the ratio of engineers to technicians (técnicos superiores), in the light of Maraven's patterns. Maraven was said to employ one engineer to twelve technicians, while in Lagoven there were fifteen engineers to one technician. Yet Maraven was thinking of inverting the formula. Lagoven thought the truth must be somewhere in the middle, and it
prepared a pilot program to see it could stop employing so many engineers. This was harder to evaluate. In any case, the proposed redesign of work was rejected because of the pressure from the Colegio de Ingenieros, nine percent of whose membership was unemployed in the early 1980s (Interview 46.1/12).

The human resources approach might have come into the Venezuelan petroleum industry even if it had not been nationalized; it was partly a product of the times. But the explicit exchange of experiences that is described here almost certainly could not have occurred under the concessionaire regime. The objections of the Colegio de Ingenieros were not a new phenomenon; the engineers had insisted on *venezolanización* since the late 1950s. But the objections were stronger because of the country's economic stagnation after 1980 and perhaps because the industry now belonged to the Venezuelan state.

Not everybody in the industry was enthusiastic about manpower planning. One man found that things were simpler in the old days, when they hired when they needed and fired when they needed, with no restrictions, either way. He thought that manpower planning was a way to justify the expansion of the work force to the Venezuelan state and the general public, what he called the *ambiente*, rather than a useful tool for corporate planning. And the justification was necessary because there was criticism from some politicians, and others, who said that PDVSA was becoming like Pemex. His
own appreciation was that the manpower in the nationalized industry was, as compared with Exxon or Shell, "all fiber, no fat", and the Venezuelan industry lacked the support systems of the transnationals. In terms of the international oil industry the salaries, too, were far from generous. Compared with the other Venezuelan state enterprises, the oil salaries were very high, but he wondered, "What lens do you use to analyze the industry?" (Interview 30.1/4).

There were fewer degrees of freedom as a result of nationalization. The nationalized industry could tell its personnel offices to "freeze" the work force, and the companies could enforce it, but it couldn't tell them to fire anybody. First, the Ley de Reversión guaranteed considerable stability. Second, the atmosphere (el ambiente) impeded it, the Ley de Salvaguarda and public opinion. "Before, we could say good-bye and give people something—maybe a used truck, a bonus, to make it a friendly good-bye. We couldn't do this now." More than the legal environment, it was the atmosphere: the public, through the media; the rights that the unions had acquired; even the contractors. There had been pressures before, but public opinion was different now. Congress wasn't the problem so much as the unions and "the public itself". On the other hand was Fedecómaras. He sensed a general feeling that the industry had grown too much (Interview 30.1/1-3).
Expansion of the work force was a result of the previous contraction and the new projects, which in turn resulted from nationalization because the industry now had a new future. It was not a simple case of hiring more people because it was a state-owned bureaucracy. But criticism for new hiring was so widespread because the industry now belonged to the state; in the past the concessionaires, if they were criticized at all, were accused of hiring too few people—Venezuelan people. But in fact, the nationalized industry was experiencing pressures of different kinds: the unions and the professional groups pressed for more jobs in the oil industry; other interest groups said the industry was becoming an inefficient bureaucracy. These pressures took autonomy or degrees of freedom away from the industry, partly for hiring and especially for firing, but they did not all come directly from the state. On the other hand, most people I spoke with in the ambiente were not aware that the concessionaires had, before 1960, had a larger work force than the nationalized industry had in 1982; this is another instance of the industry's failure to explain itself to the new owner. In an uncertain oil market, competition meant flexibility and cutting costs. If OPEC were to weaken or remove the quotas, the Venezuelan industry would need to compete harder than ever, and restrictions on human resource policies would be an inhibiting factor. This is an example of the contradictory pulls from the international and national market, but they were stronger than necessary because the national environment was not able to assess the
risks of greater control, while the industry, rather than explaining itself effectively, resorted to cosmetic responses (the employment freeze, for example) that made the operators more vulnerable than necessary. This type of response, I believe, was the result of the organizational history of private-ness and the cultural value of low profile, which inhibited the industry from taking proactive steps on its own behalf.

The difficulties of incorporating experienced newcomers resulted from the combination of the need to expand, the former contraction and the organizational culture of building managers from the bottom up. Socialization of large numbers of people was hard work and not, in at least one case, successful. This was an example of the pulls between the needs of the expanding market of the late 1970s and the cultural constraints of the intracorporate environment.

Generations of managers

An outstanding outcome of the intracorporate responses that are reviewed above and of longer term changes in the national environment was that, in the Venezuelan petroleum industry of 1985, it made sense to talk about generations of managers.

Almost all of the fifty executives who were interviewed in 1984 and 1985 had been in the industry for between twenty and over forty years; they belonged to the generation of veteran managers and had been trained by the respective
multinationals. Many of them had earlier been supervised by non-Venezuelan personnel, who had had experience in affiliates in different countries. Some of the men who were interviewed had spent years working in other countries, like Indonesia, Argentina, England and the United States.

After nationalization, Venezuela limited itself to its own reserves and the international presence became less important within the industry. The efforts to integrate units began to erode interaffiliate cultural differences, while PDVSA acquired greater strength. Above all, the number of young managers grew after 1976, creating the "hammock" or the "hourglass"—a substantial group of veterans, a shortage of experienced middle managers and a large group of young managers, far less experienced than their supervisors, somewhat more qualified academically and, from the first, employees of a single, state-owned corporation that operated almost entirely on national territory.

Another factor that distinguished the generations of managers in the Venezuelan petroleum industry from one another was the social environment in which each group had grown up. The professionals who joined the industry after 1976 were brought up in a different society from that of the nineteen forties and fifties, a Venezuela of more job opportunities, more universities and professionals and greater contact with other cultures through scholarships, tourism, the media and imported goods and services; a Venezuela of democratic politics and greater participation of women in the work
force; a more complex society. All of this meant that the young professionals who entered the industry after 1976 might well have a different value profile, knowledge, beliefs and skills from those of the veterans. This could have important implications for the future of the industry.

And after nationalization the old-timers were themselves changing, in response to the rapidly changing environments; sometimes the changes were hardly perceptible and they weren't altogether aware of them. So it becomes clear that the nature of industry management was a complex phenomenon in which many things changed all at once.

Many older managers said there were important differences between the older and younger generations of managers, between veterans and the potential generación de relevo. The veterans wondered if they themselves had passed on to their staff the values and knowledge that would be important for the industry of the future. This was a problem of organizational learning, and it was highly relevant for the industry of the 1980s and 1990s. If the managers were not teaching their personnel, the generación de relevo, as they themselves were taught, and if the younger generation was innately different, then within a few years—by 1990 or 1995—the first line managers would be very different from those of 1984 and 1985. And if, besides, that lack of traditional teaching was not conscious, if it did not respond to an explicit change strategy but to gradual changes, barely
perceptible and subtly incorporated into organizational practice and culture, without the express design of the industry leadership, then it would be hard to predict the differences between the new generation and the one that was still managing the industry in the mid-1980s. In other words, it was not true to say that the industry of 1985 was failing to prepare the industry of 1995, as one or two people suggested, but rather that it was preparing it in ways of which it was not altogether aware. In the language of this study, the organization was not inquiring—or not inquiring enough—into the existing socialization patterns of the next generation of managers.

A PDVSA Director (10) made a coherent analysis of what he saw lacking in the preparation of the younger generation. He distinguished between transmitting values and transmitting knowledge, and he found, for example, that the veteran managers were not giving priority to teaching the values of the industry; they were "acting mechanically". If this could be explained by the great expansion of the previous eight years, it was nonetheless important, because it was the managers' job to pass on historical and organizational reasons for doing things one way or another.

He set the problem of managerial development in the context of another issue, which he called the loss of the "integral manager", the loss of authority and control. In this view, the oil manager before nationalization was an integral manager: he hired, fired, taught, admonished. Now, a lot of
this had been delegated to the deputy managers or to staff units. An integral manager should administer, and not everything could be delegated. The atmosphere of the manager of today was not that of the integral manager, and this was a sign of decay in the organization.

An integral manager should be exposed to diverse functions and affiliates and to experiences in other countries; while the industry was circumscribed to Venezuela, this was hard to achieve. (Several joint ventures overseas were signed after the interview with this PDVSA Director, and they may provide new opportunities for overseas experiences.)

The problem of the delegation of functions was related to the notion of participative management and the use of committees, which were also tied to the issue of authority. Committees were at times used for problems that should be solved by managers. Another example of erosion of authority was that too much consultation was required to make decisions. The Ley de Salvaguarda inhibited the manager’s action—not just the Law itself, but the time-consuming documentation which it entailed.

Perhaps the managers of the old days spent more time with their personnel because there was no pressure to expand. But besides, in the old days managers were evaluated according to work done and according to how they dealt with their subordinates. Now a greater effort was perceived to satisfy superiors. This in turn resulted from the need to inform
PDVSA about the daily operations of the business. If more functions were left in the operators, leaving to the holding company only strategic planning, control and evaluation of results, then the frequency and detail of the reports could be diminished and managers could pay more attention to their own staffs.

The issue of managers' teaching on the job was linked to a possible loss of new talent for the organization. On the one hand, the industry had demonstrated little ability for incorporating experienced professionals from other organizations who were hired at managerial levels. "No matter how good they are, they bother the veteran personnel." On the other hand, the industry waited too long before identifying a young professional as someone with managerial capacity. Ten or fifteen years were required to develop a good manager; if the organization waited five years before identifying a potential manager, it risked losing him or delaying his training.

The change of direction that PDVSA Director 10 perceived—that managers were looking up (to their own supervisors and to PDVSA) rather than down (toward their staff)—could indicate an overall organizational change of direction, congruent with PDVSA's increased strength and with the growing interest of the state in the actions of the petroleum industry, but not necessarily desirable in terms of efficiency and preparation for the future.
The phenomenon of generations of managers refers directly to a problem of organizational learning, of transmitting the knowledge and values held by a group of individuals to the rest of the organization. In this case it was especially crucial, owing to the "hammock" and the other changes that followed nationalization. With respect to the issue of state control and industry autonomy, and the need for mutual adaptation, the problem of generations was crucial because much of the successful adaptation—with the Ministry of Mines, in particular, but not exclusively—had depended on the informal network of oil sector people whose common experiences made it possible for them to work together. On the other hand, younger managers may be less committed to an identity of private-ness and therefore more able to design effective organizational interventions to improve the adaptation process with the state. The problem is, little is known about the values and beliefs of the younger managers.

In any organization so large and complex as the Venezuelan petroleum industry, it takes time to transmit new knowledge, values and attitudes throughout the whole organization. But how much time? Little is known about the time required to incorporate new behavior in an organization. How can we say, for example, that the industry responded fast—or not so fast—to the changes in the environment during the years after 1976? This question is theoretically interesting, but it is also a very important practical question. If there are reasons to assume that the changes could have been faster,
then future actions might be directed toward accelerating them. If it is instead assumed that no more change could have been achieved, or that accelerated change could be harmful for the integrity of the organization, then the strategy might be to adjust expectations rather than to force change.

To study adaptation processes and learning in the industry’s younger managers, it is of the essence to discover not only the formal training systems but also the informal or unplanned mechanisms, what can be called socialization. They include, for example, learning through the observation and imitation of supervisors, learning from the experiences that fellow workers pass on, and learning by trial and error. These mechanisms may complement or replace the formal training channels or mechanisms, and if they need to be changed, it will require a conscious organizational process of reflection and inquiry.
IX. INTERPRETATION

Nationalization—a successful transition but a deep change

Nationalization of the Venezuelan petroleum industry was, in important ways, a highly successful undertaking. It was carried out peacefully, within the nation’s legal and institutional framework. Many sectors of national life participated in the debates that preceded the law itself. The agreement was peacefully negotiated with the foreign oil companies, and commercial and technological agreements were signed with them for the following few years.

Inventories were checked in 1975 by a team of Venezuelan nationals, both Ministry appointees and professionals from the companies themselves, and long-range maintenance was undertaken in 1976.

Operational normality was achieved, in terms of a steady flow of production and volumes of sales to the traditional clients, with gradual diversification of the portfolio, in an effort to reduce vulnerability.

Exploration was a successful comeback; proven reserves increased significantly between 1976 and 1982. Veteran geologists trained new managers much faster than in the past, using ingrained and inherited industry values of corporate discipline, control and morale. Other major investment projects were undertaken and completed, including refurbished wells, modified refining patterns and a cryogenic plant.
PDVSA was set up in 1975 and it began to replace the
transnational holding company functions of finance, human
resources and corporate planning. Gradually it built its
strength in all of the functions. A research affiliate was
created and staffed, and the oil industry took over the
failing state-owned petrochemical industry and pulled it out
of the red for the first time in its history.

Nearly all of the Venezuelans from the concessionaires stayed
on after nationalization, and the industry also hired many
new people, despite the tight labor market of the booming
1970s. Where there were acute shortages of specialized
labor, the organization showed that it could innovate and
substitute talent and intensive training for longer, hands-on
experience.

The interviews and other data, then, provided many tangible
signs of a successful transition, conducted under Venezuelan
leadership and Venezuelan management, a combination of
veteran oilmen and outstanding Venezuelans with experience in
public and private administration. The interviews themselves
provided intangible but convincing evidence of a successful
nationalization process. Most of the managers and directors
who were interviewed were among the Venezuelans who had been
in the industry before nationalization and had stayed on
throughout it. Others were Venezuelan oilmen who had gone to
private enterprise, or overseas with the international oil
business, and had returned to participate in the
nationalization process. The veteran oilmen whom I interviewed gave a strong impression of people who had undertaken a challenge and done it well. Pride, vitality, analysis and critical reflection are terms that describe the set of interviews.

Still, I find that the notion that there was no trauma with nationalization does not accurately describe the changes that were described in these interviews, or does not describe them altogether. It suggests that not much happened inside the industry, while the results of this study show that the years between 1976 and 1985 were a time of constant adaptation, of responding to a complex and changing environment and at times (as when gearing up) changing direction altogether from what had been happening in the past. The stakes were high and the challenge was difficult. The responses during these years meant deep change for the Venezuelan petroleum industry, and I believe that it was long-lasting change and that there are important issues still to be resolved. That is the substance of this interpretation.

Not everyone agrees that nationalization was a success. There are two major streams of criticisms. One stream questions the efficiency of the nationalized industry and affirms that the state's investment in hydrocarbons between 1976 and 1982 was excessive in terms of what that industry can provide for the Venezuelan society, compared with investments in other sectors. The argument goes on to criticize the current expenses, both salaries and operational
costs. This position is held by followers of the late Juan Pablo Pérez Alfonzo, who in 1978 questioned the prudence of taking major exploration risks without the participation of foreign capital. An example of this argument can be found in Pulido Mora (1983). I have not tried to evaluate this criticism formally, but there were in the interviews suggestions of an internal debate on the issue of whether running and investment costs could be reduced without endangering the industry's capacity to respond to the market.

The other major criticism of nationalization comes largely from representatives of the political left. Their argument is that the nationalization, with the commercial and technical agreements, left the industry too close to the former concessionaires and indeed benefitted the multinationals more than it did the Venezuelan nation. The response of the state and the industry to this criticism is that the risk of losing clients was real and could have been a serious threat to the Venezuelan economy; Venezuelan oil was not irreplaceable, and the nationalized industry was not ready to sell directly outside the transnational network. National and industry leaders often recalled, in their interviews, the Mexican nationalization of oil in 1938, after which the transnationals refused to buy Mexican oil—and Mexico depends far less on its oil income than Venezuela. The extended relationship with the major companies after 1976 was to be a guarantee against such a threat and in fact the portfolio has been diversified over the years. Nonetheless,
the problem of control in the new joint ventures is a real one; it is not dealt with in this study because it had not become salient until 1985.

Both of the above groups advocate greater state control of the industry and tend to favor, therefore, the Ministry over PDVSA; samples of their positions during the Veba case are presented in Chapter VI. Both the positions have something to offer in a critical view of the industry. My point is that neither of them treats the issue of organizational integrity from the point of view of a complex organization undergoing a difficult transition, not only without interrupting production and sales but without disintegrating as a unit. In both analyses there is a tendency to treat the organization as a black box and to simplify the nature of the environments. By examining the organization and its environments closely, as I have done in this study, I hope to add a dimension to the debate. The complexity of the changes can best be understood in terms of the central dilemma.

The central dilemma

The central dilemma of multiple and contradictory demands from the industry's environments emerged from the interview data as a strong unifying theme or force that connected the various accounts to one another. It was not entirely new in 1976, but the changes in the environments had given it a different form and made it more complex, more pervasive and more urgent.
This was the nature of the central dilemma: in 1976 and the
next years, the Venezuelan petroleum industry was facing
difficult and interrelated sets of issues across its three
environments. The ways in which it responded to those
issues, as it sought to resolve the conflicts, are at the
core of the interview results. The present interpretation is
an effort to understand the nature of the resolution and to
draw some generalizations from it.

One set of issues had to do with the international business
world and the national political, economic and financial
context, and it can be synthesized like this: how was the
industry to manage itself efficiently in the face of the
demands of these two complex and often contradictory
environments?

On the one hand there was the market, increasingly uncertain
in the middle range and, from 1982 on, constrained in the
short range by the OPEC country production quotas. These two
components added complexity to the business environment and
so induced more complex responses: the market required
flexibility, the ability to respond quickly to changing
signals, while the OPEC quotas required discipline and
careful design and management of the export package.

On the other hand there was the Venezuelan political,
financial and economic environment. The national economy
depends heavily on the fiscal revenue generated by the sale
of oil. The Venezuelan state is powerful, owing largely to
its oil income, but decision processes in the national government are often rigid and complex. National policy with respect to oil has been more advanced and more carefully designed than in other areas of national life, and emphasis has been put on the achievement of a political consensus about oil policy; nonetheless, political power is polarized between two parties, Acción Democrática and Copei, and they approach oil policy differently and deal with the industry differently.

After 1980 these structural conditions in Venezuela were exacerbated by the reduction of fiscal revenues from oil, a severe shortage of foreign exchange, and a large and growing foreign debt. The government changed institutionally from Acción Democrática to Copei in 1979 and from Copei back to Acción Democrática in 1984, and each new administration appointed a new cabinet (including a new Minister of Energy and Mines) and a new group of bureaucrats at many levels.

The changing national environment implied many things for oil industry management, first new requests for information and control and then for cash to see the government through a time of scarcity. And after 1980 public criticism of the national petroleum policy began to grow.

This set of issues, then, centered on the contradictory messages from the international market and the national political and economic environment, and these messages changed over time.
But in the years after 1976, the industry was also filling the vacuums left by the transnational holding companies and reorganizing itself according to the new federative structure. It was rapidly expanding its work force. The various parts of the newly nationalized industry had been rivals for years. Even though the former concessionaires were left intact as organizations, and in spite of the remarkable continuity of the work force and the managerial processes, the new structure did impose crucial intracorporate adjustments on the oil industry organization, and so it elicited intracorporate responses.

PDVSA had to define or negotiate its relations with the affiliates. Corporate finance and planning had to be created altogether. The Venezuelan oilmen who were assigned to PDVSA were experienced operators from competing international concessionaires, but now they were all part of one holding company and were expected to work together as a corporate team with corporate vision. Integration of the various parts was even harder as, over the years, the original fourteen operators were collapsed into three. PDVSA also reassigned the oilfields among the affiliates, a process called geographical rationalization. And this all had to be accomplished while the industry responded to the daily demands of the market and the nation.

The multiple demands from the business world, the national environment and the new intracorporate arrangements were at
times contradictory with one another—expanding as fast as possible but using national inputs, which were not always available; at times they were difficult because new—project control or incorporating experienced middle managers; and at other times neither contradictory nor altogether new, but simply too many things at once—socializing new young managers while expanding, for instance. In any case, the multiple demands resulted in unusual and confusing messages for industry directors and managers. In the mid-1970s, spending replaced scarcity; in the 1980s scarcity slowed spending. Optimism and then uncertainty about the international market required flexibility, but government wanted control. Decisions in the state were often diffuse and time-consuming. Former rivals were now part of the same organization, while the former holding companies were now competitors. Production and sales policies had to be shaped to Venezuela's oil reserves alone.

Executive careers were now to be made in Venezuela and without competition from foreign personnel, but the market and the technology were still international. Many more people were needed to expand the industry's reserves and its production potential, but there were few organizational precedents for incorporating and socializing large numbers of newcomers, least of all first-line and middle managers. The low profile strategy of the past kept the Venezuelan public from learning about the industry and supporting it. And the cautious strategy of minimal change implied that the industry
should become a state-owned enterprise in formal terms but should keep acting like a private company in its dealings with the market.

The need to respond to the multiple and often contradictory demands from the three environments is what I have called the central dilemma that the nationalized petroleum industry faced after 1976. When the industry as an organization focused on responding to changes in one environment, it had simultaneously to respond to changes in one or both of the others, and often the responses contradicted one another. Hardly any responses were circumscribed to one environment. To make matters more complex, sometimes there were contradictions within one environment, and all three environments were changing over time.

The contributions of this thesis

The identification of the central dilemma is a contribution of this thesis. The dilemma has important implications for understanding how the nationalized industry behaved between 1976 and 1985, and the other contributions derive from it.

The adaptation of the industry to the central dilemma between 1976 and 1985 was a dynamic process, a constant resolution of conflicts across the environments as the shape of the dilemma changed over time. In other words, there were evolutionary variants of the central dilemma, or transactional stages, so that the nationalized industry was responding to a constantly moving target.
An important part of the organization's adaptation to the central dilemma can be seen as a process of becoming a state-owned enterprise, in the sense of facing the problems typical of such enterprises, in particular the dilemma of government control and industry autonomy, and the related issues of multiple objectives and diffuse decision centers in the state. Nationalization is a transition, as the organization moves from the status of a private business organization to that of a state-owned enterprise.

By looking at this transition through the lens of organizational adaptation theory, state-owned enterprise theory can be seen as a theory of adaptation. The literature about organizational adaptation to environments, that different environments require different adaptations, is a contingency theory. It is a theory about how different demands and constraints from the environment influence the organization. An important part of state-owned enterprise literature refers to the enterprise's adaptation to two specific environments, the market and the state, and the tension between them. These two bodies of literature, then, are not two different theories: one is a special case of the other.

The Venezuelan petroleum industry was an unusual kind of state-owned enterprise, and this affected its transition process after nationalization. It was an oil company, vital to the Venezuelan economy and the source of most of its
foreign exchange. It was nationalized at a moment of
turbulence in the market and economic turbulence at home, as
the growth of gross domestic product went from six to eleven
percent and then, abruptly, to zero. The industry had been
private and foreign for fifty years before it was
nationalized, and nationalization culminated a process of
increased government control. The state instructed the newly
nationalized industry to retain many ways of behaving from
the past. All of these special characteristics contributed
to explain the organization's responses and patterns of
adaptation, as well of many of the responses of the state
toward it.

The importance of the intracorporate environment in
explaining organizational behavior is another contribution of
this study to the literature on adaptation and state-owned
enterprises. In this case, and almost certainly in other
nationalized industries, there are three environments, not
two. The intracorporate environment has a history or culture
of behaving like a private business and of dealing with the
state as a private business does. In this case, that culture
helped the adaptation to the optimistic oil market, but it
led to organizational errors, or maladaptation, with respect
to the Venezuelan state.

Furthermore, the intracorporate environment of each
nationalized industry has a specific structure before
nationalization and afterwards, and these generate their own
demands and influence the way the organization responds to the market and the state. In this case the need to integrate the parts was a result of organizational history (several concessionaires) and of the organization structure chosen for the nationalized history (several vertically integrated subsidiaries under a new holding company).

Another contribution of this thesis is the fact that there is mutual adaptation between the nationalized enterprise and the state itself, that this adaptation is a process and that its effectiveness is vital not only for industry outcomes but, when the industry is as important as oil is in Venezuela, for national outcomes also.

The state is further specified as a field of organizations rather than as a homogeneous body or a large bureaucracy, so that effective mutual adaptation depends, for the industry, on a clear understanding of the nature of each organization of the state and of the interaction among them. The notion of multiple and diffuse decision centers is part of state-owned enterprise literature; what is added here is the idea that each organization of the state has its unique organizational history and culture, mission and sources of power, which shape its organizational behavior and perceptions. The state-owned enterprise must therefore respond to each one differently, and the newly nationalized industry must learn to adapt differentially to each one and to the dynamics of the interaction or dialogue between them.
It is further proposed that both parties—the state and the state-owned enterprise—can learn to manage the relationship, to achieve dynamic balance and to tolerate some imbalances or swings during the different transactional periods. They can do this by organizational inquiry and reflection, by learning to understand that the needs for autonomy and control will shift over time as they environments shift and by learning about the nature of the other organizations and about the dialogue among them.

The process of adapting to the central dilemma

The data from this study, as they are presented and analyzed above, reveal patterns in the organizational change that occurred in the Venezuelan petroleum industry after it was nationalized, as the industry responded to the central dilemma. The patterns make it appropriate to speak of the nationalization as a process, not an event. The changes occurred over time, starting long before 1976 and continuing long afterwards. One thing opened from another. There was an order and there was a direction, not a straight line but certainly a give-and-take over state control and industry autonomy and a tendency, during most of the period, toward greater state control over the industry.

Nationalization had strong roots in the past, but the legal and political event of the nationalization law in 1976 marked a milestone in the process. It was in the same direction as the previous process, but it was a major, qualitative change,
a decisive event. With respect to that decisive event and the ten years following it, and from the point of view of the nationalized industry, the process as it has been studied here can be meaningfully divided into three periods.

In 1974 and 1975 the Venezuelan petroleum industry realized that nationalization was really going to happen. There was great optimism about the market, but there was a combination of apprehension and excitement with respect to the coming nationalization. The industry at this time was a set of units, separated from one another physically, historically and organizationally, yet with many common characteristics and all different—in similar ways—from the rest of Venezuela. The industry was in a stage of contraction.

1976-1980 was a period of gearing up and expanding capacity, of achieving operational normality under Venezuelan ownership and management, a time of optimism and of relative industry autonomy. Internally the industry was structured into one corporation, but the parts were held together loosely.

The third period was roughly 1981-1985, with growing doubts about the market, retrenchment and some government questions and restrictions on the boundaries of industry autonomy. Inside, there were stronger attempts to move toward greater integration of the parts and to strengthen PDVSA.

Late 1985 and early 1986—after the period under study—seemed to mark the beginning of a fourth period in the life of the nationalized industry, with a radical drop in prices,
and then slow recovery and continued uncertainty. There was also some recovery of industry autonomy with respect to the strategy of internationalization, but with continued limits on degrees of freedom with respect to financial autonomy. PDVSA compressed two of its operating affiliates, Meneven and Corpoven, into one and it reassigned some of the oil fields among the three remaining operators so as to achieve greater balance of the reserves. This move could be interpreted as a step toward one big company or, as I and others see it, as a stronger commitment to vertical integration reflected in giving considerable strength to each of the three remaining companies.

A discovery of the dissertation is that in each period the shape of the central dilemma was different and elicited different patterns of organizational responses as the industry sought to resolve the conflicts across the environments. In other words, there were evolutionary variants of the central dilemma, or transactional stages. The general nature of the resolution of the conflicts across the environments changed over time as the shape of the central dilemma changed.

**Before nationalization**

The period through 1973, more or less, described in detail in Chapter III, set the stage for the changes that followed. Level I was defined above as a reference point in time, or as fairly stable behavior in a given environmental situation, to
which subsequent behavior can be compared or contrasted. In this case it refers to industry behavior before nationalization. And it was, in fact, possible to identify a kind of industry behavior before the early 1970s; it was neither static nor homogeneous, but it can be described as behavior typical of the pre-nationalization period and it responded to the fairly stable environments.

When, for decades before 1970, the international oil market was relatively stable in volume, prices and structure, the Venezuelan petroleum industry responded by providing a reliable supply of oil, especially fuel oil and heavy crudes, above all to the Eastern seaboard of the United States. Each transnational company balanced production in Venezuela with that of other subsidiaries around the world, and the concessionaires competed with one another for clients. The industry priced for profit, as a price follower, and efficiency and costs were an important performance criterion, especially during crises.

The central dilemma just as I have described it above was not present before nationalization, but even in those years, the industry's responses to the international oil market were conditioned by the behavior of the Venezuelan state toward the petroleum industry—a state that depended heavily on oil income for foreign exchange and for fiscal revenues, which were then cycled through the economy. This was the substance of the "industry-government game" described in Chapter III, a
constant tug-of-war between the industry (in its several parts) and the government. The purpose of the game was to retain control for the longest possible time. The companies wanted the best possible reserves and highest possible profits; the government wanted to increase its share of control and taxes. The companies' respective strategies in this game were not identical to one another—Shell and Exxon tended to be leaders and the others followers, and each company dealt with the government with different styles—but all of them were seeking the best arrangements for profit maximization, the best deal with the Venezuelan government. The government might respond with by agreeing to the requests, or it might be tough. The game was played in the political, economic and administrative arenas and at different hierarchical levels of the organizations, especially the concessionaires and the Ministry of Mines.

The game tended over the years, with occasional setbacks, toward greater government control and it concluded—apparently—with nationalization. In 1930 there were Ministry inspectors. Later came the 1936 Labor Law, the 1942 Income Tax Law and the 1943 Hydrocarbons Law. During the 1950s new concessions were granted, but there was continued venezolanización of engineering in the industry. After 1960 there were no more concessions, the government increased its take, Venezuela participated as co-founder and member of OPEC and a state-owned enterprise was founded, the Corporación Venezolana del Petróleo. CVP was a small company with a
reputation among the transnationals for inefficiency and politicking; it is also said that these companies did their best to make it hard for CVP to function well. In the early 1970s there was an attempt to centralized all domestic marketing in the Corporación Venezolana del Petróleo; it was not successful and this function was later returned to the respective concessionaires. (It is possible that this experience accounts in some measure for the decision to leave international sales in the operators after nationalization.)

As it became clear, in the 1960s and early 1970s, that the state was taking more and more control of the petroleum industry and would almost certainly nationalize it before the anticipated reversion dates (1983, and in some cases 1997), the industry began to adapt its own behavior to the market. It produced more oil and stopped exploring. It held long-range maintenance to a minimum and cut back slowly but surely on its work force and training. Venezuelans moved into higher and higher positions.

In the 1970s, then, the Venezuelan managers—who would later undertake the management of the nationalized industry, and who had been hired and trained by the international concessionaires—had internalized ways of behavior, norms, values, beliefs, what Schein and others call organizational culture. Some elements of that culture were common to various companies: corporate discipline and morale, rivalry among concessionaires, constant improvement, predictability, merit promotions, low profile and little contact with the
rest of Venezuela. The industry, international in its market and its technology, bequeathed to the Venezuelan organizations a history of international experience.

After nationalization there were changes in the organizational behavior—actions and action strategies, decisions, practices and ways of thinking, and common perceptions—of the Venezuelan petroleum industry in a situation of turbulence of the environments. The changed responses, some of which began during the period of transition to nationalization, are contrasted to the Level I or stable behavior corresponding to the years before nationalization. The focus of this study is on Level II—adaptive responses (or adaptive behavior) to the perceived changes in the environment—and Level III—observable patterns in that adaptive behavior. The study also looks for instances of Level IV change, organizational inquiry into the change process itself.

The study produced rich data about the adaptive responses, and they are documented and analyzed in Chapters V through VIII of the findings. Now I will interpret them in terms of the adaptive process as the central dilemma changed from one period to the next.
1974-1975, the transition

1974 and 1975 were transition years for the Venezuelan petroleum industry, the last years of the old government-industry game. In 1975 the state set goals and strategies for the industry, under PDVSA, as the new organization charged with producing and distributing Venezuela's oil: operational normality and international credibility; gradual delinking from the transnational distribution network and development of a broader portfolio; the establishment of PDVSA and filling of the vacuums left by the transnational holding companies; expanded reserves and production potential and changes in the refining patterns; and the creation of an image within the country of a loyal and model Venezuelan organization.

The goals, some old and some new, were to be achieved through a strategy of continuity in the service of change—continuity of technology and markets, a federation of companies that were similar to the concessionaires, and above all the same people working under the same conditions they had enjoyed with the multinational companies. Self-financing and fiscal responsibility gave the industry more degrees of freedom than other Venezuelan state-owned enterprises had.

The change process was to be led by Venezuelans, a combination of insiders or oilmen at the operative level and outsiders, or non-oilmen, in the holding company, and this too was decided at the highest political level.
The insiders, the Venezuelan oilmen who were to manage the newly nationalized petroleum industry, included men who had been on the concessionaire boards and now became company presidents or board members of the first fourteen PDVSA subsidiaries; still others were promoted from management. Some Venezuelan oilmen had been with the international companies overseas and returned, others had been in national private industry and were invited back to the oil industry. Several functional coordinators at PDVSA were recruited from the operating affiliates and the Ministry of Mines and Hydrocarbons (later called the Ministry of Energy and Mines).

What is essential first of all, then, for understanding the next years is how much accumulated knowledge there was, and how explicit were the industry's instructions from the state to use this knowledge. The evidence shows that the industry embraced those instructions, and this can be qualified as a Level II response. Learning from the past was expressly brought to bear on the present and the future. And it was possible in large measure because of the years of venezolanización. The evidence shows that in many ways it was a successful strategy but at times, when change was required, old responses needed to be unlearned, and then the past became a hindrance or an inhibiting factor.

The organization of Agropet was another adaptive response to the realization that nationalization was coming and might mean changes in the existing management and its conditions.
It also drew on the experience of a former professional group in CVP, highly politicized along the lines of national politics, which the Agropet founders wanted to avoid. Agropet was a proactive response, aimed at achieving continuity of the working conditions, and it succeeded in the form of Article 24 of the Law, which assured just that. With Agropet the industry managers discovered they had a voice and it might be heard.

Commercial and technological agreements were signed with the transnational concessionaires for the first years of the nationalized industry, and these were negotiated by small groups of Ministry officials, transnational employees acting informally and other Venezuelans who had at some time been associated with the oil sector.

During 1975, when the inventories were checked by a combination of Ministry and industry people, some transnational employees felt a strong conflict of loyalties. The motto, "Business as usual", coming from a transnational president, was helpful in one case for making decisions during the overlap of an owner that was divesting and a new one anxious to gear up for the future.

Inside PDVSA, the combination of insiders and outsiders seems to have been carried out by division of labor. Outsiders—principal among them, the President of PDVSA, General Rafael Alfonzo Ravard—set to work to achieve the goal of a reliable image at home and abroad. Inside PDVSA, one "insider" is
said to have been the chief architect of the new holding company. The operating affiliates were allowed considerable operational autonomy but the budget was centered from the first in PDVSA.

Following the metaphor that "the organization" is an organism, we can briefly imagine how "it felt" by the end of these two years. Nationalization was a nostalgic but exciting phenomenon, and Venezuelan veteran oilmen were being allowed to show that they were capable of managing the Venezuelan petroleum industry. There was discomfort at the outsiders who had been placed atop the new structure of old, powerful companies but there was an effort to put up with them "for the duration"—until the next Board appointments, in 1979. The industry had discovered it had a voice and might be heard outside itself. And the Ministry might after all allow the industry to keep operating with technical and economic criteria. Maybe things would not change so much in the nationalized industry.

At Level III I discern several patterns of adaptation during this time of transition. One was to use every qualified human resource in Venezuela to make this a success, combining people in different ways and making effective use of an informal network of oil sector people who had established relations of trust among one another.

Continuity in the service of change, using the considerable accumulated knowledge of the industry to enhance an effective
transition, was a corollary of the first pattern. It included the notion of minimal change and that implied leaving the operating units to continue as they had done in the past.

The creation of Agropet, an innovation in the face of threat to the existing working conditions, was a unique response. I am not sure whether it can be qualified properly as a pattern. But the fact that it involved many managers of many units and that it continued after nationalization suggests that it may have augured a new way of behaving, a proactive stance toward the national environment.

There is little evidence of organizational inquiry into the patterns of change during these years; that does mean there was not inquiry but that the speakers did not describe it. It is probable that the small group of top-level politicians who had proposed the elements of the design were—possibly through the Minister of Mines, the President of PDVSA and company presidents—alert to the on-going changes of so important a process.

1976-1980, nationalization, operational normality and gearing up

The central dilemma emerged between 1976 and 1980, and the strongest pulls were between the needs of the market and those of the newly structured organization. All three of the industry’s environments were changing.
The oil market looked increasingly promising in these years. OPEC was important as a price setter but there were no quotas. At home, the gasoline market was growing. The oil market outlook did impose some shortages of labor and inputs, as oil companies everywhere began to expand.

This was the moment of nationalization; the state moved from its role as landlord to the new role of owner. Expansion and operational normality were the watchwords from the state and they were clearly accepted by the industry. These were years of considerable industry autonomy and limited state control, as the state stood back to let the oil industry move ahead.

The industry was under Venezuelan direction and management; the transnational companies, no longer owners and managers, were present in a different capacity, through the commercial and technological agreements; they had left important vacuums in finance, corporate planning, research and executive career development. PDVSA was new and small, and the affiliates enjoyed considerable operational autonomy. The fourteen operators, direct descendants of the concessionaires, were merged into four, while the total work force nearly doubled.

The Level II adaptive responses described in the text reflect a variety of patterns of adaptation (Level III) during these years, and they are discussed below.

The express strategy of continuity in the service of change, which came from the state, was translated into Level II responses that made it possible to put old learning at the
service of the newly nationalized and rapidly expanding organization. It had already been achieved to keep on the same people with the same conditions under the law; Agropet, which had been instrumental in bringing this about, redirected its efforts to insuring that the system of merit promotions not be replaced by political appointments.

The industry continued to recruit experienced Venezuelan oilmen from the international companies, from the Ministry of Mines and Hydrocarbons and from domestic private industry, in a continued effort to use national sources of expertise. The technology and commercial agreements with the transnational companies were renewed in 1977 to extend the overlap between the nationalized and the concessionaire regimes. A corollary of that policy, however—enhanced by organizational culture (Villalba 1985)—was a tendency of the respective affiliates to use their former technology suppliers, even if they were not economically optimal, and Venezuelan inputs were not used very much at all. Here were multiple and conflicting demands. The market and the state demanded expansion and operational normality, and this was more easily achieved with traditional sources of inputs; this was also consonant with inherited intracorporate behavior patterns. But the state also wanted the industry to buy Venezuelan inputs, while national suppliers were often slower to respond than foreign firms, and national products might not meet quality requirements. Between 1976 and 1980, however, the state did not insist.
Except for the budget, the major sources of power were left in the affiliates to start with (sales, management of the technological agreements, information systems, recruiting of new personnel, exploration and production). PDVSA built its strength slowly, working through functional coordinations and interaffiliate committees with small groups of highly experienced operators, and making changes gradually and only when necessary. At times its absence was sorely felt, as operators were left to themselves to solve common problems, which could lead either to the most powerful companies imposing their will, or to odd compromises that could not be justified technically or economically; these are examples of maladaptive responses.

The informal and discreet work with the Ministry of Energy and Mines to develop annual industry guidelines in a cooperative way was apparently a major key to successful operation during these years; again, the existence of an informal network of oil sector people was the basis for this adaptive response.

Expansion during the late 1970s required technological and managerial expertise in project design and management, and this was new. We are told that the projects often took longer and cost more than expected, but that the quality of the projects was satisfactory. Timely construction of social infrastructure was often a problem. Given the boom in Venezuela in these years, which created shortages in all the
factor markets, this problem cannot be attributed to oil industry management.

A closer look at the responses to the market shows an adaptive pattern that was repeated in human resources and planning: directives from the very top were carried out by a small, informal group from the industry and the Ministry, and these people were often moved into managerial positions later, where they implemented the design they had worked on. The initial marketing strategy was clear: keep the traditional niche in the market, add some new clients, gradually delink from the transnational companies, change refining patterns to suit the market. These responses to the market—some were old but consciously adhered to and others were new—started at the very top, when the three-man negotiating team for nationalization issued guidelines to draw up and sign commercial agreements. The agreements were designed in 1975 by a relatively small group from the oil sector, some in the government and others, still in the service of the concessionaires, who provided informal advice on the negotiations. Once the industry was structured as a state-owned enterprise, many of the men who had worked on the commercial agreements were placed in key posts in trading and supply, in PDVSA and the affiliates.

It is not clear from the data where the idea came from to leave sales in the affiliates. The Presidential Commission had recommended a separate and centralized sales unit; the
earlier failure of centralizing domestic sales in CVP may have been a reason for leaving it in the operators. It is also possible that the PDVSA Board of "outsiders" or non-oilmen may have felt it was safer to leave exports under experienced management, divided and tied to the other operations. In any case, the evidence implies that PDVSA in these years did not work to move sales to the holding company but instead worked to build its own strength over time, through a conscious process of communication and participation with the affiliates, acting in the general interest in cases of conflict and adapting to the changing world market. An interaffiliate committee, similar to the former Creole committee for production, refining and marketing, was created to allow coordination when it was necessary for the general interest; this was a combined response to the market (which required coordination) and the new internal structure (which allowed sales from each of three affiliates). The state did not intervene.

A similar pattern of adaptive responses also characterized recruiting of human resources, which was a competitive endeavor whereby each company offered its conditions to candidates as attractively as possible, based on similar salaries and evaluations, but different working atmospheres, opportunities and regions. Only toward the end of the 1970s did PDVSA begin to build a common classification system for human resources, to contemplate an industry-wide pool of managers, to foment rotation of managers among the affiliates.
and to consider how to build a corporate-wide sense of loyalty. The operators responded tepidly; with the expanding market and shortage of labor, no company wanted to give up talented people to any of the others and only when PDVSA insisted was this done. Experienced operators might be sent to the holding company—more, as time went on—where they often had trouble stepping back from operational details and thinking in corporate, strategic terms. Incorporation of experienced newcomers was a failure, at least in one company.

In exploration, which had suddenly blossomed after fifteen years of quiet, veteran geologists were returned to exploration from other functions and younger ones were promoted as fast as possible—much faster than in normal times. This was deemed a success and one speaker attributed the success to the effective use of inherited cultural values of corporate discipline and morale.

The drill school for tool-pushers was a somewhat different kind of adaptive response to the expansion of production potential and the shortage of skilled labor. Qualified tool-pushers were available only at very high prices during the expansion of the mid-1970s. Maraven, perhaps following an initiative in Meneven, opened a "drill school" and trained newly graduated petroleum engineers to be skilled laborers during the emergency. These young men learned fast and were enthusiastic about their direct experience with the drilling process; they became "a kind of brotherhood". Later their skills helped them to carry out managerial jobs related to
heavy equipment. It was an innovation in the face of a labor shortage and it was unique in teaching engineers the manual, physical part of the work.

If indeed the idea started in Meneven, a newer company, it might suggest that Meneven was freer to experiment than the other companies and that its experiments, once tried, were at times passed on to the more traditional companies. Or it could be that in Maraven itself there was a tradition of experimenting. These are hypotheses; what seems clear is that the conflicting demands from the market—the need to expand and the related shortage of skilled labor as oil companies around the world set about drilling—put the industry in a bind, especially since it was no longer a transnational industry with international resources. After paying the price of importing tool-pushers, Maraven innovated, with good results.

Corporate planning as a function also began in the operators and did not become a strong PDVSA function in these years—expansion was the general plan, many projects looked profitable and resources abounded. Chief among the projects for the 1980s were the plans to develop the Orinoco Oil Belt's heavy crudes.

Even in finance, the companies were not at first asked to change their reporting systems; each company reported as it had done in the past and experienced analysts, some from the Ministry of Mines, homogenized the information as they had
done for years in the past for financial reports to the government.

The outsiders and insiders continued to work together by division of labor, whereby PDVSA's President and Board concentrated on dealing with the national environment and on keeping a reliable image overseas, while the oilmen concentrated on gearing up and assuring operational normality (which also enhanced the international image). The evidence suggests that division of labor was eased by the effective use of informal networks, of personal relationships of trust between, for example, the President of PDVSA and the President of one of the major operators.

In these years financial autonomy was respected by the state. We are not shown how this was achieved; it seems to have been in part a decision of the state and in part the work of PDVSA's President and First Vice-President, and perhaps others, whose many talks to Venezuelan leaders in different sectors emphasized the possibilities and efficiency of the oil industry in national life (Alfonzo Ravard 1982, Arreaza A. 1983).

But toward the end of this period there was a surprise. A major investment project for changing the refining patterns had been approved in 1977. In 1979, however, the newly-electedCOPEI administration questioned the partly-built project, and the industry had to convince the government again of the wisdom of the investment. Industry leaders,
never so at home with Copei as with Acción Democrática, took this as a sign that more control was coming. Then there were worrisome changes in the by-laws of PDVSA: the shareholders (represented by the Minister of Energy and Mines) now had power to assign areas of managerial responsibilities to all board members and to approve or disapprove the consolidated budgets and those of the operators. The board would have two vice-presidents instead of one and members' tenure was cut from four years to two. These changes generated anger and anxiety inside the industry but the evidence does not say how—or if—there were industry efforts to undo them. In one case, Agropet objected to the destitution of a PDVSA Director, allegedly for political differences with the Minister, but another person attributed the destitution to negligence rather than to politics.

We can imagine again 'how the organization felt' at the end of this period. The industry had shown itself to be well prepared for nationalization, and continuity in the service of change was a worthy strategy. Very few things were altogether new; there were many precedents, whether in the operators, in the holdings overseas, or in the Ministry of Mines. And the transnational companies were still there in some capacities. The industry had filled many vacuums but certain international expertise—the experience of seeing a problem repeat itself in many countries, the capacity to create scenarios of the world oil situation—had to be imported. But in recruiting, exploration, production,
shipping and sales the industry was doing well.

Continuing to imagine "the industry's voice" around 1980, it
recognized it was not ready to incorporate new people, which
went against industry values, and it was not enthusiastic

about rotating personnel from one affiliate to another, which
meant that the units might lose valuable people and the
individuals could forfeit possibilities for promotions.

The industry thought of itself at this time as a model
organization from which other Venezuelan organizations could
learn; it assumed that the rest of the nation admired its oil
industry and believed it was doing its best for the nation's
benefit. The industry was irritated, but not too worried,
about having to buy Venezuelan inputs or fit in with other
national projects.

It had been all right to stay on in the industry, and so far
the state had respected the industry's conditions.
Managerial motivation was high. Veteran oilmen weren't very
happy with the outsiders in PDVSA, but politics had not come
in at the lower levels, and the oil business was moving
ahead. The industry wished an oilman would become the
president of PDVSA. It was nervous about the changes in
directors' terms of office and the second vice-presidency; a
Copei government might mean the industry was going to be
political. Nonetheless, joint efforts with the Ministry on
annual guidelines were going well and the industry was
careful to keep that channel open.
Something like the above may have been the "industry's state of mind" at the end of this period. But the industry at this point, despite its successful performance in many areas, was already having trouble at the interfaces: incorporating experienced newcomers, dealing with one another, dealing with the state and buying Venezuelan products, changing technology sources. I call this pattern of adaptative change (Level III) selective adaptation—the industry adapted better to the traditional and new oil business tasks than it did to the interfaces with the state and with its own several parts. Selective adaptation derived from the organization's culture and from the explicit strategy of continuity in the service of change. This adaptive pattern was appropriate to the shape of the central dilemma in these years, when the major demands were between the optimistic market and the newly nationalized industry at the end of a long period of contraction. As the industry rose to the need to gear up and expand, by capitalizing on its strengths, the state supported industry efforts and minimized control. During the next period, the shape of the central dilemma changed and selective adaptation became a problem.

We are told by a company director that 1976-1980 was not a reflective period but a time of action, of meeting urgent demands and building for the future. There was little evidence in this study of organizational inquiry into the change process during these years.
1981–1985, uncertainty and retrenchment

By 1981 the shape of the central dilemma had changed, and during this period it was felt in all its complexity, with strong pulls from all three environments. The industry's difficulties in adapting at the interfaces, especially with the national environment, became crucial in these years.

The oil market was tighter and its future was uncertain, so much so that OPEC considered and finally, in 1982, imposed production quotas on its members. Venezuela's quota that year was 1.5 million barrels a day, at least a million less than production potential at the time and, as the government planner pointed out in Chapter VII, lower than the lowest estimate of the Sixth Plan.

Inevitably the quota limited fiscal revenues from oil, while the international price dropped and domestic consumption of hydrocarbons was growing and was still subsidized. The growing foreign debt made the scarce income crucial. The Copei government kept asking questions about the investment program; later it looked to the industry for cash. The earlier signs that politics might be moving into the industry, at least into PDVSA, were still present. Still, the Sixth Plan was an energy plan and above all an oil plan.

Inside the industry, retrenchment meant that the Orinoco Oil Belt development plans were postponed and efficiency and lowered costs were more important, yet the oil fields were aging so that it was harder to get oil out of the ground and
production costs increased. Integration of the parts of the industry was becoming more important for dealing with the market, for pooling management and technological resources and for cost control.

During these years the industry continued with its action strategy of continuity in the service of change. It had acquired expertise and confidence in facing the market and broadening the portfolio, maintaining production potential, exploring and doing research.

The idea of undertaking joint ventures overseas with non-traditional partners began in 1980; a technological agreement with Veba Oel led PDVSA President Rafael Alfonzo Ravard to propose that the industry look to Germany, and specifically Veba, as a market. This was an innovative response to the uncertain market and the problem of heavy crudes, but it triggered a typical state-owned enterprise problem of government control and industry autonomy. The success of the negotiations with Veba (an adaptive response to the problem of market share and heavy crudes) contrasted to the failure to communicate effectively with the Congress and the public at home (a maladaptive response), and the industry paused in its overt development of the internationalization strategy although some tentative conversations continued.

There were other successful Level II responses in dealing with the government during these years, particularly the
continued joint elaboration of the annual guidelines with the Ministry and the assurance of the lion’s share of the investment funds of the Sixth National Plan; the evidence shows that the "energy plan" resulted in good part from the industry's careful negotiation strategy, outlined by the government planner in Chapter VII, as well as from the effective intervention of Minister Calderón Berti.

But the evidence shows maladaptive responses, too, besides the failure to communicate with the appropriate political actors about the Veba contract. The national fiscal crisis led the President of the Central Bank--a strong, articulate and determined person backed by national President Herrera Campín--to propose that the petrodollars be moved from banks overseas into the national treasury. PDVSA strongly opposed the idea and refused to lend cash to the government or to borrow any money, from the Arabs, for instance; at the same time neither did it buy Venezuelan inputs according to expectations. The outcome of these pressures and responses, we are told, was a "spiral of tension" that ended in the petrodollars being transferred to the Central Bank. The problems began in the environment, but the industry's responses were of a kind to increase tension, and they qualify as maladaptation. In other words, state ownership of the industry and the shape of the central dilemma in these years imposed a new version of the old government-industry game, and the industry had not yet learned to play it.
Later, however, the industry undertook a constant dialogue with the government to assure that the funds continue to flow steadily from the treasury to PDVSA. We are told that the dialogue "worked", and this can be qualified as an instance of organizational learning, learning from error or maladaptation. We do not know much about how the process of internal inquiry was conducted, but it is significant that the PDVSA Director who was in charge of the dialogue was a former government official, wise in the ways of handling political relations easily and effectively. Perhaps he took organizational experience from the political ambience into the industry; whether he did or not, the dialogue indicates a development in the relations between the industry and the state--forced to do so, the industry learned to interact on its own behalf.

Early in the 1980s the industry was criticized for having doubled employment in seven years. The employment freeze declared by the Board of PDVSA in 1983 was a response to this criticism, but there is convincing evidence that it was not a very effective response. It did not assure lowered costs, since personnel could still be contracted, while it did increase vulnerability in the operators. This response, then, also qualifies as maladaptation.

In 1983 President Herrera Campín appointed Minister Calderón Berti President of PDVSA. This created great ill will in the industry; it was considered to be arbitrary, unpredictable and against the rules of seniority. There were good
candidates in the industry. We know the industry managers were angered but there is no evidence of actions taken to change the situation. There may easily have been informal conversations with authorities and other political figures. In any case, the appointment was often mentioned during the political campaign. Late in 1983, Acción Democrática won the elections and early in 1984 Dr. Jaime Lusinchi, the new President of Venezuela, appointed Arturo Hernández Grisanti as Minister of Mines. Humberto Calderón Berti was dismissed and the President of Lagoven, Brígido Natera, replaced him. The oilmen were relieved and there was a feeling that things were going to be better. Nonetheless, President Lusinchi soon lowered the oil executives' salaries ten percent. Agropet protested, but the directives from PDVSA were to accept the cut graciously (and perhaps look later for ways to recover some of what was lost).

PDVSA during these years was trying to encourage closer integration of the parts of the industry and tighter cost control. Rotation of directors and managers among the companies became more common and, it is suggested, provided some benefits in learning from one affiliate to another. During these years PDVSA, which had earlier begun to define or negotiate its relations with its affiliates and they with it, played a stronger role. The analysis shows how sales, human resources and corporate planning became stronger in the holding company after 1980. The creation of some eighteen Comités Interfiliales, non-official units in the sense that
they are not in the statutes but nonetheless very real as a way of operating, was an adaptive response to the need to bring the companies closer together. During these years the committees became an important consensus and power-sharing mechanism, with the PDVSA Coordinator at the center as the technical link of the highest level among the affiliates.

There is evidence that each affiliate offered specific strengths and as PDVSA grew, it built upon them. Committees came from the Exxon and Creole tradition; Maraven was outstanding in sales and corporate planning. CVP had had to educate its board of non-oilmen about the oil business, and the Ministry of Energy and Mines had ample experience in homogenizing information from the different concessionaires. There are many other examples, and they reflect a pattern of adaptation, at Level III, using the strengths of each affiliate to benefit the whole. Beer (1981) refers to Ashby’s Law of Requisite Variety and says that an organization, like a living organism, must have within it sources of variety that are matched to the variety in the environment. The oil industry’s use of strengths from its respective affiliates, and the Ministry of Mines, seems to have provided requisite internal variety for the nationalized organization.

But there was also competition among the affiliates, and in these years it took the form of a fight for survival, especially as the plans to develop the Orinoco Oil Belt were
postponed, which left the smaller companies without enough reserves to be efficient, at least in the short run (until 1990). There was a common belief that the four companies would soon be merged into three, and the three smaller units fought to survive. Maraven, for instance, campaigned hard to get PDVSA to bring Zuata onstream, and a Maraven director believed that its competitors worked to influence PDVSA not to approve the necessary funds.

So in this period there were still many successful adaptive responses, but there were also failures, or maladaptation, and most of these were at the interfaces. And all along, veteran managers were aging and retiring, an important non-adaptive change. The industry's imaginary "internal voice" at the end of this period might have sounded like this:

"This is getting harder. The job of responding to the three environments is more complicated than it was in the late 1970s. Continuity in the service of change is still an effective strategy--fifty years of running the oil business, increasingly under Venezuelan management, prepared us well. The informal channels with the government, in particular with the Ministry of Mines, are still an effective mechanism for elaborating feasible annual guidelines. Ever so, the Ministry has become less predictable in these years--three different Ministers since 1979, each with a different approach to the industry--so before counting entirely on the guidelines, we had better wait to see what the new Minister actually does."
"PDVSA may have waited too long to exercise its power internally, or it may be getting too powerful and might not follow what the Ministry guidelines said, in the actual distribution of funds. We really wonder when the four operators will be cut down to three, and which one will go."

"The Veba idea was brilliant and it was well negotiated overseas, but we did not communicate effectively to the political sectors; there is a lot to learn here. Communication is complex. Venezuela is not so admiring of its oil industry as we used to think. Our efficiency is regarded largely as something achieved by foreigners who still, some people believe, run the industry. Our inherited low profile strategy and behavior have become a handicap—we need a new image to acquire allies."

"The government, even under a new President who appointed an oilman to be President of PDVSA, is still showing us that it is boss. They want our money. They cut our salaries. If the organization is to sustain its status as a privileged state-owned enterprise, we are going to have to work at it, and dialogue is a big part of this. But are we really a state-owned enterprise? That sounds like exactly what we don’t want to become; we are still not sure."

"Internationalization is a reasonable strategy, but are we transnational—again? Do we remember how to do it? It’s harder to go to Germany than to the United States."
"Sometimes we wonder what our younger generation is going to look like in ten or fifteen years—descendants of transnational companies? Pemex bureaucrats? Or something different that we haven’t foreseen? This merits more thought, and maybe we should be doing more about their training."

The above "industry state of mind" in 1985, as I imagine or construct it, shows how much deep change was still in process ten years after nationalization. I think that the idea of selective adaptation can explain most of the difficulties of those years, and it also links the adaptive process to the question of whether the nationalized oil industry was in fact becoming a state-owned enterprise during this period.

Selective adaptation to the central dilemma was a Level III pattern that can be observed all through the period under study, 1976-1985. I do not mean by selective adaptation that the industry consciously chose to adapt in some ways and not others. I mean something quite different: that in reality it can be observed that the industry did not adapt in the same way, nor equally well, to changes in each of its three environments. It responded effectively to the traditional and new oil business tasks—keeping the oil flowing (production and transportation), recovering exploration, expanding production potential, changing the refining patterns, marketing, recruiting and hiring many new people, holding on to staff by offering good and stable working
conditions. But the industry found it much harder to adapt to the interfaces with the national environment and, in the intracorporate environment, among the companies and PDVSA.

This pattern was not crucial during the late 1970s. I argue that the shape of the central dilemma in those years reflected strong pulls between the market and the newly nationalized industry, which for years had been contracted, while the state took a supportive more than a controlling role. The organization responded effectively to those pulls and between 1976 and 1980 there were not many instances of maladaptation. Between 1981 and 1985, however—as the market looked less promising, as the state’s demands became more urgent and as retrenchment made it more important for the industry to act as an integrated, cost-conscious organization—during these years, selective adaptation became a more serious problem for the nationalized organization.

In its transactions with the Venezuelan government, the industry often responded to the demands passively, rather than proactively. There were examples of superficial or token responses: buying a minimum of Venezuelan inputs and only when the government insisted; offering the services of two financial consultants when the government asked for large amounts of cash; providing total figures on major projects, without breakdowns; freezing the number of employees, but not the capacity to contract people, when the public said the industry had grown too much. One man said, "We just wait to get slapped," and the 1984 salary cut was a slap.
But the selective pattern was not perfectly clear. In the national environment, there was some mutual adaptation with other organizations. The use of informal channels or networks was often successful, especially with the Ministry.

There was some evidence of organizational inquiry and learning as a result of the errors. Once the oil dollars were in the Central Bank, the industry learned to dialogue to assure a steady flow of funds. In 1984 industry directors instructed the executives to accept the salary cut quietly, as a contribution to the government's austerity plan. And at least one group of industry managers reflected on the complexities of communicating with the state after the Veba case.

Among the parts of the industry there were instances of effective adaptation, too. The use of specific strengths from each affiliate—systems from Lagoven, trading and planning from Maraven, and so on—provided the organization with internal variety to respond to complex demands. Gradual geographic rationalization, step-wise merging of the operators, and gradual functional integration through coordinations and committees are all examples of effective adaptation, part of a flexible strategy described by one man as "not casting the organization design in concrete."
On the other hand, with regard to the newer oil business tasks there were, besides the successes, examples of difficulties—project management was one of them.

But in general, the industry seems to have been less effective in adapting to the interfaces with the nation and inside the organization itself than it was in adapting to the changing international business environment, and this is what I have called selective adaptation to the central dilemma.

Selective adaptation, I argue, was rooted in the distinct organizational histories, missions and cultures of the oil industry and of the other organizations of the Venezuelan state, and it was reinforced by the conscious choice of "continuity in the service of change". Organizational history and organizational culture made it hard for the nationalized oil industry to perceive that its relative isolation from the rest of Venezuela was a handicap, to discover that many people equated the industry's efficiency with foreign-ness, and to incorporate experienced managers. There was a need for an especially hard kind of learning, the unlearning of organizational behavior that was no longer useful.

The nationalized industry had other special difficulties that grew out of organizational history. It was hard to center on the longer view (a difficulty that was reflected in the Venezuelan state and will be discussed below). There was reluctance to look at the whole organization above the parts,
and it was hard for some PDVSA coordinators, former operators, to step back from operating details. The corporate view, the longer view and in consequence the strategic view were hard to achieve.

As the shape of the central dilemma changed during these turbulent years, the nature of the demands across the environments also changed so that the industry as an organization was forced to respond to a constantly moving target. Sometimes the results were unexpected, and a look ahead to 1986 illustrates this. In the face of great criticism from the Congress and other sectors of national life, the industry had stopped taking decisive steps toward its internationalization strategy. In mid-1985 objections were still vehement. Then the market began to weaken and prices suddenly dropped from $25 to $15 a barrel. The objections softened and disappeared altogether, and PDVSA proceeded to complete negotiations with several more transnational companies. In this case, economic necessity seems to have created political acceptability—to put it another way, the market proved the industry right. Industry autonomy increased, at least in the area of international sales, and former critics of the strategy, notably Minister Hernández Grisanti, were now in charge of underwriting it.

There was another important change in 1986: the four companies were in fact compressed into three—Corpoven and Meneven were joined and the reserves were redistributed among the three operators, to the principal benefit of Maraven,
whose production potential and reserves increased by fifty percent—largely light and medium oil.

The central dilemma after 1985 began to take a different form, with a weakened market, an indebted state and a stagnated national economy, and three strong operating companies to produce and export oil. The major non-adaptive change, the retirement of those managers who were trained under the multinational companies, meant that a new managerial group would, by 1990 or 1995, be in charge of the nationalized industry.

*An unusual kind of state-owned enterprise*

In specific and crucial ways the Venezuelan petroleum industry in the years after nationalization was an unusual kind of state-owned enterprise, and I argue that in fact the case of the Venezuelan petroleum industry it is a special kind of state-owned enterprise.

First and foremost, the industry was a state-owned oil company, and this made it very different from telephones, for example, or electricity, or a bank or the metro. The industry operated largely in the international market, where it had to compete and didn’t set prices, except within narrow margins. Even in the subsidized domestic market, pricing was related to the international price; the domestic price was in effect a state decision about how much to subsidize the various sectors of the national economy—car owners, users of
public transportation, the electricity sector, private industry. Other typical oil business characteristics included the large size of the investments, the inherent instability of the market and the large profits. The technology was international and fairly stable. Vernon (1984) warns that enterprises operating in markets that are oligopolistic are apt to behave very differently from the competitive model, at times cooperating with their rivals, and their behavior is especially hard to predict.

There are other relevant characteristics of the oil industry that made its management inside Venezuela different from that of other public enterprises. It was a capital intensive industry and its installations were geographically disperse, so it was relatively easy to satisfy workers' demands—as contrasted to the steel mill, for example, whose twenty thousand employees worked in one area and lived in one city, or to the education system, where a salary increase for the nation's sixty thousand primary school teachers meant a major outlay and where teacher dissatisfaction could, and did at times, turn into a strike that directly affected every family in the nation.

Within Venezuela, neither the work nor the product of the oil industry was so visible to citizens as services were, except for the local gas stations, where only a fraction of production was sold, and it was sold by concessions. So the oil industry organization wasn't open to public criticism or admiration on the basis of daily operations. The
construction of the Caracas subway in the 1980s was a nice contrast, where people suffered the daily discomforts, celebrated the periodic completions of stations along the way and began to use it to commute.

The oil industry was, and will be for years, absolutely vital to the Venezuelan economy and it produced most of the economy’s foreign exchange. PDVSA and its affiliates had a monopoly on managing the nation’s greatest source of wealth. Politicians and other representatives of the nation wanted very much for the industry to keep producing money (because it was vital) but they wanted greater control (because it was so strategic). This produced a special dynamic between 1976 and 1985. When the national economic situation got tight and the oil industry had immense dollar reserves, the state—specifically the Central Bank—wanted the petrodollars back home and more closely under its control. Shortly afterwards, many politicians objected to the Veba arrangement. Then the market weakened so drastically that the representatives of the state stepped back and left the market strategy to industry management.

The oil industry was nationalized at a particular time, a moment of turbulence, especially in the international business environment, and a time of great expectations for the oil market. By 1985, growing uncertainty of the oil business seemed to be here to stay, while the OPEC country quotas made it harder to design the export package.
The structure of the international market had also changed "for good", so far as one could imagine; certainly Venezuela would not regain its rank of the 1930s, 40s and 50s. And the respective roles of OPEC nations, the Seven Sisters and the independents were very different. Within this structure, then, the Venezuelan petroleum industry’s behavior had changed. Both as a set of transnational subsidiaries and as a state-owned enterprise, the industry had looked to be part of an international cartel, first with the Seven Sisters, then with OPEC and more recently with joint ventures in consumer countries but with firms outside the major distribution network. Vernon points out that the OPEC members are many nations whereas the Seven Sisters are a handful of private international companies, so that cooperation within OPEC to achieve market stability is a much harder goal to achieve. Vertical integration overseas was undertaken as an answer to this problem, part of the search for risk-sharing with the industry’s clients, so far downstream, with Veba Oel, Nynas, Citgo, Stuart and others.

A most important special characteristic that made the industry’s behavior unusual for a state-owned enterprise was that it had been private for fifty years before it was nationalized. It had a long organizational history or culture of private-ness and foreign-ness that made it different from a typical, true-born state-owned enterprise. The Venezuelan oilmen had been building their expertise for years. They had learned established systems and processes,
in an industry that had not undergone radical changes in technology or clients. Private-ness, foreign-ness and relative isolation in a single, crucial productive sector were both a strength and a weakness. These qualities gave industry executives extraordinary and exclusive expertise—no one else in Venezuela was prepared to manage the industry—but they were qualities that also explained why industry managers were not used to being so close to national politics. They had for years practiced a quiet tug-of-war with the state through the Ministry of Mines, what one speaker called "the government-industry game", in the search for better concessions and less operational control, but they had been trained to keep a very low profile and to answer overt criticism by not answering it—by holding aloof. So after 1976 the experience of not being able to refuse publicity altogether was new and it was threatening. Managers found it hard to design public interventions, to respond to criticism without becoming defensive and to discover the public's view of the industry itself—as a foreign enclave that thought itself superior to the rest of Venezuela. In other words, industry managers had very little experience of dialogue with other sectors of Venezuelan life—of assessing the depth and direction of criticism, of responding in different ways, of sensing when to reply and when to wait, of giving credence to real concern and so avoiding the "spirals of tension" that the government planner observed. These skills—fairly common to the world of the
public administration—still not been learned by the oilmen. They had not yet learned to play the new version of the government–industry game.

Besides, the nationalized industry had received explicit instructions from the state to retain many characteristics of the private companies, to change without changing. So in 1984 and 1985, the managers were still asking themselves, "Are we public, or private?" I don’t think this was idle speculation, or mere complaining, nor was it a refusal to accept reality. Of course, the industry was nationalized and therefore it was public, in a strict, legalistic sense. But from the very first, from 1975, the organization was instructed to retain precisely those characteristics that distinguished it from the typical state-owned enterprise. Financial autonomy, the paying of taxes to the state, vertical integration of companies that were virtually the same as the old concessionaires, high salaries and generous fringe benefits, merit promotions, conservation of the transnational concessionaires’ labor force with its store of knowledge about oil industry management—all of these were to stay the same. These instructions reinforced organizational history and together they accounted for the public–private identity crisis. But that unresolved crisis could get in the way of effective dialogue with the state; at times the industry behaved toward the state as it had done before nationalization.
In this sense, the oil industry's adaptation to the central dilemma between 1976 and 1985 is a story about becoming a state-owned enterprise under special conditions. But some of the most important and interesting organizational changes that were associated with nationalization were not of the state-owned enterprise type. They dynamic nature of the dilemma between control and autonomy--its development over time as the environments shift and as the organizations learn more about the nature of their interaction--has been discussed, and the last section of this chapter emphasizes the transactional nature of that development as the nationalized industry and the state adapt to each other. The organization's adaptation to its own changing intracorporate environment and the force of organizational history and organizational culture are described below.

The intracorporate environment and the importance of organizational history and organizational culture

A great many of the responses that the speakers described as being very important at the time of nationalization had to do with the organizational tasks of filling the vacuums--partial vacuums--left by the former holding companies and building PDVSA, and of integrating the various parts of the new federative structure, while rapidly expanding the work force. The adaptive responses to the intracorporate environment were closely associated with nationalization, because it was then that the new structure was designed. But a different design could have been chosen--one big company or horizontally
integrated companies were considered—and it would have elicited different responses. And the actual responses were shaped not only by the design itself but also by the constraints and strengths of organizational history and organizational culture.

The process of building PDVSA, as we infer it from the evidence about building international sales, finance, corporate planning and human resources, was unique because the affiliates already existed and they were strong. Most of them had a long history in Venezuela and several had been major producers within the international oil industry. Before nationalization, these strong affiliates had been serious rivals, competing daily with one another for international sales and for the best possible deal with the Venezuelan government. PDVSA's experienced affiliates, "the daughters educating the mother", did not know each other well, were suspicious of one another, and had had little experience in guiding, designing corporate strategies, dictating policy and controlling the affiliates. Yet now they were to act as parts of a national corporation, under a single, incipient state-owned holding company which was at first directed by relative outsiders to the oil industry.

The analysis shows that in general PDVSA grew and became stronger over time. The various holding company functions developed unevenly and somewhat differently from one another, but they followed a common pattern (excepting finance) of
moving slowly from the affiliates to PDVSA. The interviews also show that there was a constant state of tension between PDVSA and its affiliates, a situation of mutual adjusting and negotiating. And over time, there were more steps toward integration or synthesis of the parts. Rotation of directors and managers among the companies became more common. Interaffiliate committees became stronger as a consensus and power-sharing mechanism, with the PDVSA Coordinator at the center. Each affiliate offered specific strengths, from the respective organizational cultures, and PDVSA built upon them and so achieved internal variety that helped to make the organization more responsive to its environments. These were important responses, but they were part of the reorganization or learning curve of the new organization rather than an outcome of the new status as a state-owned enterprise.

The evidence also shows that in each of the relatively new functions, such as export sales and corporate planning, there was some past experience to go on. It often came from Venezuelans who had worked overseas with one or another of the transnational holding companies, or from others who had worked in the Hydrocarbons Division of the Ministry of Mines. At times there had been small departments in Venezuela that reflected a major function in the holding company overseas.

The history of private-ness and the decision to nationalize the oil industry created both the need and the possibility for a transition strategy of continuity in the service of change. The experienced oilmen who could keep the industry
running were needed and they were available. New responses and ideas were also needed, to gain credibility overseas and at home as a nationalized organization; the idea of insiders and outsiders to lead the process came from this, and the division of labor between them followed naturally from their different backgrounds and skills.

What is essential is how much accumulated knowledge there was and how explicit were the industry's instructions from the state to use this knowledge for a successful transition. The years of venezolanización made this a feasible strategy.

The creation and actions of Agropet also drew on the common organizational experience of the oilmen and on the negative example of the former CVP professional association, which had been highly political. Agropet was an innovation, a proactive industry response to the fear of becoming a state-owned enterprise in the worst sense of the word—politics and inefficiency—and Agropet was created precisely because of the organizational history of private-ness and merit promotions.

The conflict of loyalties described by a concessionaire employee working to check the inventories in 1975 was as much a conflict between an old and a new employer as it was between the state and private industry.

The adaptive strategies of using qualified human resources in Venezuela to make the transition a success, of combining
people in different ways and of making effective use of an informal network of oil sector people who had established relations of trust among one another over the years, were strategies that were useful to the nationalization process, but they were above all new organization ideas that built on old organizational strengths.

I have already said that the major pulls of the central dilemma, during the years from 1976 through 1980, were between the demands of the market and of the newly structured, and for years contracted, industry. The pattern of leaving initiatives in the affiliates and of building PDVSA slowly, working through functional coordinations and interaffiliate committees with small groups of highly experienced operators, was a new industry pattern that took into account organizational history and culture. The joint efforts with the Ministry of Energy and Mines responded to a need of the state-owned enterprise status, but they were possible because of organizational history.

The exploration comeback was induced by the need to expand; it was possible owing to the effective use of veteran geologists who returned to exploration after years in other functions, and to inherited cultural values of corporate discipline and morale. The drill school for tool-pushers was an innovation in the face of a crucial labor shortage and an urgent directive to expand, and the idea was passed from one affiliate to another.
Another major difference was that there was some loss of international expertise, since the managers were no longer sent abroad for stints in other subsidiaries—at any rate, not until the Veba contract was signed—and since the Seven Sisters were no longer obliged to share their expertise with the Venezuelan industry with the same intensity or priority. This followed nationalization, but an independent private company might have faced the same difficulty. In-house foreign expertise was partly replaced, first with the technical assistance agreements and then with independent consultants, national research and the new joint ventures downstream. But a special kind of international expertise was lost, the experience of seeing a problem repeat itself in many countries; this too happened when the nationalized industry was separated from the transnational companies, but it is not an inherent quality of state-owned enterprises.

Between 1981 and 1985, retrenchment meant that the Orinoco Oil Belt development plans were postponed and efficiency and lowered costs became more important, yet the oil fields were aging so that it was harder to gut oil out of the ground and production costs increased. During these years PDVSA became stronger in corporate planning, human resources and sales, and this was an organizational response to the contraction of the market, to the efforts of the previous few years and to the pressures from the state to cut costs and justify the growing work force. Integration of the parts of the industry
was seen to be more important for dealing with the market, for pooling management and technological resources and for cost control, but the postponement of the Oil Belt plans resulted in a fight for survival among the three smaller affiliates—Maraven, Corpoven and Meneven—who needed new reserves in order to be viable, and this created suspicion and made integration more difficult. The restructuring of the industry into three more balanced operating subsidiaries, in 1986, was an organizational response to the intracorporate environment, and it seems to have resulted from inquiry into the vulnerability and costs of the three weaker subsidiaries—Maraven, Corpoven, and Meneven—which were then merged into two—Maraven and Corpoven—each with its specific strengths.

The internationalization strategy, the idea of undertaking joint ventures overseas with non-traditional partners, belongs to this period. Internationalization was an innovative response to the problem of heavy crudes, which arose in turn from being cut off from the transnational networks and having to count only on Venezuela’s own reserves, which were mostly heavy crudes. This limitation was not, however, a requirement of being a state-owned enterprise; the industry could have undertaken international integration upstream and did in fact discuss the possibility with Pemex and Petrobras. For the moment, however, it could consider only its own reserves as it sought clients and designed the export package, and this is what led the industry to begin to become, again, an international
organization downstream, by buying refineries overseas in joint ventures, but with different partners from the Seven Sisters.

The composition of the industry directors and managers was changing. The veterans of the transnational corporations were a declining proportion of the total, and this tendency would necessarily continue as the veterans retired. This was not just a result of nationalization but of the inevitable aging of the work force, and of the contraction of the work force for years before 1976 and the subsequent expansion owing to market expectations. The Venezuelan society and economy had changed, too, so that the younger people who were hired or promoted to managerial positions after nationalization were not only much younger than their supervisors, they had a different social and organizational background, and this too could only be accentuated in the future.

Ten years after nationalization, then, the industry was still undergoing deep changes. The problems of integration were a reflection of what I have called the pattern of selective adaptation, the difficulty of responding at the interfaces, in this case among the parts of the organization.

The theory of state-owned enterprises does not address the organizational responses that arose in this case from the intracorporate environment of a nationalized industry, both the organizational history and culture and the organizational
design of the newly nationalized industry. Organizational change theory is needed to explain the transition from private to public ownership, in particular the transactional nature of the process and the swings of the balance between government control and industry autonomy in response to changes in the market and the state. Organizational change theory, by showing the adaptive patterns over time, provides a lens for studying how the behavior of a state-owned enterprise that has been nationalized is affected by the history of being a private enterprise, by the pre-nationalized structure of the organization or industry and by the organization design selected for the nationalized organization. It also provides a framework within which to study the mutual, interorganizational adaptation with the state and to show that both parties--state and state-owned enterprise--can learn to manage the relationship, to achieve dynamic balance and to tolerate some imbalances or swings during the different transactional periods. They can do this by organizational inquiry and reflection, by learning to understand that the needs for autonomy and control will shift over time and by studying the nature of the interaction between them.

The need for mutual, interorganizational adaptation with the Venezuelan state

Nationalization is a reciprocal process, and the nationalization of the Venezuelan petroleum industry also
induced deep and long-lasting changes, or at any rate the need for changes, in the Venezuelan state, as it interacted with the industry. The need for mutual adaptation is certainly a state-owned enterprise phenomenon, following from the dilemmas of control and autonomy, but in this case it also follows from the great importance of the oil industry in the Venezuelan economy, government income and foreign exchange and from the former situation of the concessionaire regime, controlled by the state and protected by it at the highest levels from the rest of Venezuelan political life.

With nationalization, the state was no longer the landlord of the petroleum industry; it was the owner. But it was not yet an oil-producing and oil-selling state, in organizational terms. Most of the state's organizations did not frame their decisions as an oil entrepreneur might do. (Klapp (1982) discusses the changing nature of states as they shift from landlord to entrepreneur). The several organizations of the Venezuelan state were used to expecting oil revenues, but they were not ready to design or evaluate the major part of the industry business policy. Even the Ministry of Energy and Mines, said one former official, was unprepared to act as policy-maker rather than as controlling agent. Other state organizations were often confused by oil policy or in disagreement with it.

Still (or perhaps therefore) the state, through its various decision centers or organizations, was asking the industry
for more information and control, and the industry had to respond in some way, even if to refuse; there were legal requirements and there was also a need to keep good relations with parts of the state, as a way to maintain degrees of freedom. There might be negotiations, as there had been in the old government-industry game, but they were not with the state as controller but as the owner, as potential investor.

So nationalization also imposed upon the industry the need to learn how to be accountable to the state in this new status as owner. And the industry representatives often contrasted the state as owner with the transnational companies, whose decision centers were less diffuse, and who had different goals for the Venezuelan petroleum industry, a different context and a different style. Yet there seemed to be little effort among oil industry executives to understand the problems faced by the new owner in a highly political society. Politics—party politics—like the term state-owned enterprise was generally regarded not as a useful or even necessary process but as a peculiar ailment of Venezuelan national life.

An exhaustive analysis of this issue is beyond the scope of this study, but several relevant points emerge. The analysis itself should be looked at in the context of organization-as-politics; it is important to examine the respective sources of power of the state and the oil industry.
Table IX might be a starting point. It illustrates, by looking at the extremes, the respective sources of power in the Venezuelan petroleum industry and the state.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Industry</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational goal</td>
<td>Continuity of the industry, with autonomy</td>
<td>Continuity of the present political system; democracy and two party system</td>
</tr>
<tr>
<td>Employment situation</td>
<td>There are barriers to exit: no other oil employer.</td>
<td>There are barriers to exit: hard to find another political employer other than one's own party.</td>
</tr>
<tr>
<td>Environment that provides prime basis for success</td>
<td>The international market; dealing with it can be enhanced or restricted by the state.</td>
<td>The nation, political activity; this depends in part on oil revenues but also on other factors.</td>
</tr>
<tr>
<td>Mutual dependency</td>
<td>Could exist in its present form under a different kind of government.</td>
<td>Could not exist in its present form if oil industry failed.</td>
</tr>
<tr>
<td>Weapon</td>
<td>Could walk out, but could not replace political system.</td>
<td>Could take over industry but at great cost.</td>
</tr>
<tr>
<td>Internal power source</td>
<td>Deep knowledge of oil business, and exclusivity</td>
<td>Authority to change industry (put in political people and invest or not invest)</td>
</tr>
</tbody>
</table>
Table IX is a polarized political vision, carrying the dimensions to their extremes. During the period under study, the relations between the industry and the state were not polarized, but the typology can help to assess what underlay the dilemmas that did arise. Without success in the international market, for example, the industry could not survive; without a successful petroleum industry, the Venezuelan state would have to change in many ways. And the people who were qualified to achieve this success were the oil managers themselves. The state could stop or impede the industry, could turn it into something very different from what it was, but could not run it nor could the state govern in the same way without its income. This is the power that goes with knowledge.

I see two organizational strategies-in-use, relating to the two environments (national and business). One was to assure continuity of the oil business (oil managers did this as part of their jobs: assure markets and the flow of oil) and the other was to assure continuity of the political system in Venezuela, as it was between 1976 and 1985 (and politicians and planning bureaucrats did this as part of their jobs). But the elements that assured continuity of the oil industry (markets and technology) might not depend on the continuity of this political system; in fact, the checks and balances of a complex democracy often slowed decisions. This explains why the oil managers got impatient and, indirectly, why the planner-politicians got irritated. One of the key elements
of the political system, the oil industry, was not entirely dependent for success upon the specific political system, a democracy with two parties.

And the political system, if it could not substitute the oil managers to run the oil industry, could conceivably destroy it, encroach upon it or make it inefficient. This is what was being implied by transferring the funds to the Central Bank and lowering salaries. The industry was autonomous so long as it stayed in its place, and the boundaries of "its place" were not rigid but were submitted to tests around issues of control, guidelines, regulation and investment plans. The striking change from before nationalization was the state's authority to change the industry, not only by controlling after the fact or granting choice concessions but by allowing or constraining continued financial autonomy and by appointing PDVSA's Board of Directors.

But the respective sources of power were not the only differences between the industry and the state, and this was discussed in Chapter VII. The very different perceptions of Cordiplán, the Ministry, the oil industry and other groups had organizational roots (as well as political, technical, legal). The different perceptions created communication problems that were not identical to questions of power but which could have negative outcomes (the exodus of dollars, recourse to power struggles rather than careful strategies, personalized decisions based on anger). This was a mutual problem, in that the industry and the state both seemed
unnecessarily insensitive to and ignorant of the needs and expectations of the other. There was, on both sides, a lack of organizational inquiry into the nature of the other party.

The notion of different parts of the Venezuelan state emerged clearly during the planning and the Veba cases. The Congress was a different organization from the Attorney General; the Banco Central was different from the Ministry and Cordiplán; the political parties, the press and the public were different, too. Some of the other state-owned enterprises were potential suppliers and could make their weight felt; Sidor is a good example. So the state was not homogeneous; it was a complex and dynamic interorganizational field. The relevant parts for the industry were growing as a result of nationalization, and their roles shifted with the shifts in the market. Each organization of the state had its own sources of power and its own organizational history. And during the Veba case the industry discovered it did not know the conformation of the organizational field, while the state discovered that internationalization was not so grim a fate as loss of markets. But it is not clear how much of what was learned was incorporated into the respective organizations.

The role of the Ministry of Mines, in particular, could shift. The Veba case was one of the times when the Ministry and the industry acted like one organization, against the Congress. But in the case of the petrodollars, the roles of the Banco Central and the Ministry shifted and the President
of Venezuela had a role to play, too. With respect to the relation with the Ministry, at times the industry did what the Ministry said to do; other times it seemed to be the other way around. It depended partly on the personality of the Minister and his relation to the President of the country. The Ministry may be a pivot between the industry and the rest of the Venezuelan state.

Mutual adaptation between the nationalized industry and the state is especially important in this case, where the state depends so heavily on one industry and where the industry, now nationalized, depends so heavily on the state. This increased mutual dependence makes it of the essence to move away from the extremes presented in Table IX and to center on the common ground between the industry and the state. It is useful to think about the question of mutual adaptation in the light of Austin (1985), who suggests reconceptualizing the issue of autonomy and control in terms of managed interdependence:

... the public enterprise and the central government are inextricably linked. Their mutuality of interests far exceeds their points of conflict. Their interaction can be viewed as a positive rather than a negative sum game. The interaction is subject to a systematic management process (249).

This is a positivist perspective and there are several goals:
collaborative management, information flows, interaction
diversity and results orientation. Another conceptualization
comes from Warren, who emphasizes improving communication and
so making the interorganizational field "less opaque". Any
effort to improve communication and mutual understanding
would, I think, have to be an on-going endeavor at several
organizational levels. This is especially true because the
generations of managers in the oil industry are reflected by
generations of politicians in the Venezuelan state, and the
informal channels of communication among men in their sixties
and seventies who went to school and college together when
Venezuela was a much smaller world than it is today may be
considerably weaker among younger generations in a more
complex society.

A most urgent task that emerges from this study is the
envisioning the future of Venezuela among representatives of
the state, the oil industry, and other sectors. The purpose
would be to develop alternative national projects or
scenarios in the longer range--twenty-five or thirty years--
that are political, social and economic and that have oil
realistically incorporated under different hypotheses.

The notion that the state and its enterprises can inquire
into their mutual relations in order to make them more
effective as they develop over time is useful not only to
enrich state-owned enterprise theory but also to give
practitioners insights about how to manage the relationship
between the state and its enterprises as a positive-sum game.
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- Report 3, "¿Cómo se está formando el gerente petrolero venezolano del futuro?: una cuestión de aprendizaje organizacional en la industria petrolera venezolana después de la nacionalización", with a special annex, "Examples of organizational learning experienced and observed in the Venezuelan petroleum industry after nationalization, by function and by source of change in the environment". Caracas: CEPET, 20 March 1985, typescript.

- Report 4, "Planners and oilmen in the years following the nationalization of the Venezuelan petroleum industry: different perceptions, or different realities?" Caracas: CEPET, January 27, 1986, typescript.


ANNEX II-1: DETAILED SAMPLE DESCRIPTION

TABLE A-1

Codes of the fifty oil industry executives interviewed and two industry training programs observed

<table>
<thead>
<tr>
<th>Code</th>
<th>Reference in text</th>
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</thead>
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<td>01</td>
<td>Company Director 1</td>
</tr>
<tr>
<td>02</td>
<td>Company Manager 1</td>
</tr>
<tr>
<td>05</td>
<td>PDVSA Manager 1</td>
</tr>
<tr>
<td>06</td>
<td>PDVSA Director 5</td>
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<td>14</td>
<td>PDVSA Director 2</td>
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<td>24</td>
<td>PDVSA Director 6</td>
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<td>25</td>
<td>PDVSA Director 7</td>
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<td>43</td>
<td>Company Manager 13</td>
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<tr>
<td>65</td>
<td>Former Operations Manager 22</td>
</tr>
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<td>66</td>
<td>Company Manager 23</td>
</tr>
<tr>
<td>67</td>
<td>PDVSA Director 11</td>
</tr>
</tbody>
</table>
Corporate Vision Course (CEPET): The participants included 28 industry managers, none of whom had been interviewed for this study. They represented all of the affiliates and all of the functions.

Besides them, invited speakers included several PDVSA directors; PDVSA coordinators (planning, refining, organizational development, production, exploration, transportation, Orinoco Oil Belt, international sales, domestic sales, research, Petrochemical Company and materials); affiliate presidents and invited experts on the national economy. Some of the invited speakers had been interviewed for this study.

This course lasted a week. I attended all of the plenary sessions, which included presentations and discussions of the managers; I also reviewed all of the written material.

Environmental Analysis Course (CEPET). This course lasted one afternoon and was dedicated to the Veba case. Participants included some twenty industry managers from various affiliates, largely in international sales; a PDVSA Director was the speaker. I observed the seminar and reviewed all of the written material.
## TABLE A-2

Oil industry executives interviewed, by post and affiliate

<table>
<thead>
<tr>
<th>Post</th>
<th>Lagoven</th>
<th>Maraven</th>
<th>Corpoven</th>
<th>Cepet</th>
<th>Other</th>
<th>Outside</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDVSA Director (home affiliate)</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>12 **</td>
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<tr>
<td>PDVSA Manager or Coordinator (home affiliate)</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Company Directors</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5 ***</td>
</tr>
<tr>
<td>Company Managers</td>
<td>4</td>
<td>8</td>
<td>9 *</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>17</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>50</td>
</tr>
</tbody>
</table>

* Two were on assignment from Lagoven and one from Maraven.

** Two of these were PDVSA Presidents.

***Two of these were company presidents and one was vice-president.
TABLE A-3

Oil industry executives interviewed, by post and functional area

<table>
<thead>
<tr>
<th>Functional area</th>
<th>Exports</th>
<th>OP/OD</th>
<th>*</th>
<th>Corporate</th>
<th>Human</th>
<th>Finance</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>planning</td>
<td></td>
<td></td>
<td>resources</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Post</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDVSA Director</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>12***</td>
<td></td>
</tr>
<tr>
<td>PDVSA Manager or Coordinator</td>
<td>1</td>
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<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
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<td>Company Director</td>
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<td>1</td>
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<td>5**</td>
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<td>Company Manager</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>16</td>
<td>0</td>
<td>3</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>21</td>
<td>2</td>
<td>13</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

* Organization planning/Organizational development.

** Two of these were company presidents; one was a vice-president.

*** Two of these were PDVSA presidents.
**TABLE A-4**

Oil industry executives interviewed, according to where they were working just before nationalization

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transnational concessionaire, Venezuela</td>
<td>31</td>
</tr>
<tr>
<td>Transnational concessionaire, overseas</td>
<td>3</td>
</tr>
<tr>
<td>Corporación Venezolana del Petróleo or Mito Juan</td>
<td>5</td>
</tr>
<tr>
<td>National private industry (formerly with a transnational concessionaire for many years)</td>
<td>1</td>
</tr>
<tr>
<td>Ministry of Energy and Mines</td>
<td>4</td>
</tr>
<tr>
<td>Public administration</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
</tr>
</tbody>
</table>

**TABLE A-5**

Oil executives interviewed, by sex

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>49</td>
</tr>
<tr>
<td>Women</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
</tr>
</tbody>
</table>
### TABLE A-6

**Posts of eight government officials interviewed** *

<table>
<thead>
<tr>
<th>Code</th>
<th>Post and reference in text</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Former Ministry official 7</td>
</tr>
<tr>
<td>69</td>
<td>Government planner (Cordiplán)</td>
</tr>
<tr>
<td>74</td>
<td>Former Ministry official 1</td>
</tr>
<tr>
<td>75</td>
<td>Former Ministry official 2</td>
</tr>
<tr>
<td>76</td>
<td>Former Ministry official 3</td>
</tr>
<tr>
<td>78</td>
<td>Former Ministry official 5</td>
</tr>
<tr>
<td>79</td>
<td>Former Ministry official 6</td>
</tr>
<tr>
<td>85</td>
<td>Former Ministry official 4</td>
</tr>
</tbody>
</table>

* Four of the eight people had held the rank of Minister.

### TABLE A-7

**Government officials interviewed, by sex**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>5</td>
</tr>
<tr>
<td>Women</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
</tr>
</tbody>
</table>
ANNEX II-2

FRAGMENT OF AN INTERVIEW TRANSCRIPTION

... 

Speaker: Well, what shall we talk about now?

Interviewer: I know you were president of (two overseas subsidiaries of your former transnational company), so I would like you to tell me what makes the Venezuelan oil industry special, or peculiar.

Speaker: Well...it's the only national company that is dedicating its efforts to the production of heavy crudes for the future. ...it's the only national company that is vertically integrated; in that it’s unique...we have four companies...

Interviewer: Yes, I understand. (Here I was aware that he has, reasonably enough, no idea of where I am in the understanding of the industry and was making sure I knew where he was, what he was talking about.)

Speaker: We are the only one that isn't corrupt. I mean it, and that is very, very important. (But later he said neither was Petrobras corrupt.)

Interviewer: Could you say more about it, how it has stayed free of corruption?

Speaker: No, let me answer your question first of the various points and then you can ask me for more detail. It
isn't corrupt...all right, and it has no competition in the internal market...because the nationalization was complete. In other places it has been partial--I don't mean Mexico, but Argentina, Brazil, Chile, Peru: they have both private and public enterprises coexisting in the oil industry--Cuba and Trinidad, too. ...and finally, this is one of the ones that is looking to the external and not just internal market.
Okay.

**Interviewer:** You mentioned Mexico as different.

**Speaker:** It's one huge company. Corruption is very important. ...and as for Africa, take your pick...Nigeria, for example.

**Interviewer:** Why is there no corruption in the Venezuelan oil industry?

**Speaker:** There is a cynical answer: maybe our nationalized industry is too young. We are eight years old.

**Interviewer:** So maybe one of the things a nationalized industry must learn, in a cynical view, is to be corrupt?

**Speaker:** We inherited an industry that was not corrupt. We had very strict control on the part of the state, and very ethical behavior on the part of the concessionaires.

**Interviewer:** Well, if the state had a role in keeping the industry honest, then maybe the nationalized industry doesn't necessarily have to become corrupt. How did the state do
this?

**Speaker:** Excellent vigilance (*vigilancia*). Very sophisticated vigilance.

**Interviewer:** Can you tell me how it was developed and carried out? Was it different from controls in other countries you know about?

**Speaker:** In comparison with other countries in the world, our Law of Hydrocarbons was twenty years before its time, twenty years in advance of any oil-producing country. I’m not talking about the States. I’m comparing with Colombia, the Arab nations and so on, not to mention Africa. Our technical inspection was simply very, very good. Listen, we had an inspector for each camp, with a team of assistants. You should talk with Humberto Calderón (now President of PDVSA), Arreaza (was Vice-president), Daboín (now director), Hernán Ortega (I don’t know who he is). They were all trained as technical inspectors. Talk to Calderón.

**Interviewer:** Do you think he would make time?

**Speaker:** Sure. He likes to talk. ...
ANNEX II-3

POSSIBLE SOURCES OF ERROR AND BIAS

Murphy (1980) identifies common sources of error and bias in research that is based on interviews of the kind I conducted. I am following his checklist, with minor changes.

a. Possible sources of bias and error that lie with the analyst or researcher herself, or himself

I am an experienced interviewer and I looked forward to the interviews and enjoyed them. I entered the interviews with an assumption of trust, that the oil company executives would in general say what they thought and recalled, in answer to my questions. But I also used what I think are very common but usually implicit instruments of skepticism. These are the ones I am aware of: I tried to understand each speaker's context, to ask for more detail and examples, and to detect incongruities; I listened to the kind of language for words or expressions that reflected enthusiasm, nostalgia, anger or irony, bitterness, doubt, amusement; I looked for physical signs—tension, leaning forward in earnestness or back in defense, quick answers or reflection, tears or laughter.

I did not try to lead the speakers to say what they might later regret having said. I do not like to do this, and I thought that if I did, it would damage the interview process. I hoped that the study, since it was backed by the industry itself, would in general be regarded as a serious and potentially useful piece of research and that the executives
would discuss many important issues and very probably reserve highly sensitive ones. I think that is what happened. Sometimes a speaker would say, "I’ll tell you an anecdote but don’t use it," and I respected this; none of these anecdotes contradicted the sense of what the speaker was saying.

My own predispositions may be a source of error and bias. The industry itself supported a part of the research and I was working inside it, trying to understand and interpret the executives’ experiences from their own perspectives, as organizational agents. While I interviewed and transcribed, I tried in effect to identify with the speaker and not stand back until later. In addition, the five reports were addressed to industry directors and managers. All of this may have predisposed me, in subtle ways, to see successes more easily than failures, especially since there prevails a sense that the nationalization of Venezuela’s oil industry was unusually successful.

But I went into the industry as a newcomer, an academic with a career of public administration, a woman in a traditionally male organization. So, for example, I was surprised by—and disliked—some speakers’ blanket criticisms of the government, or their sense of superiority to other sectors of national life, or their nostalgia about the disappearing "corporate wife", whose husband could take any assignment and know she would follow. In contrast, when I interviewed public officials in the Ministry of Energy and Mines, I felt familiar with many of their experiences, perceptions and ways
of working. And besides these non-industry interviews, which often questioned industry itself, I read critical works about the industry and attended several symposia about oil and oil policy. These were organized by universities and other non-industry groups and they helped me to keep a critical perspective. My thesis committee members did this, too.

Another possible source of error is my own ignorance of the oil industry and oil economics. I learned a lot during the years of research, but I cannot pretend to know what such writers as Gustavo Coronel or the Foninvés group know. This is in the nature of intellectual specialization, and while it means that I may see patterns in the organization with the advantage of distance, it also means that I may have missed or misunderstood some references, especially in the early interviews. One man, for example, referred to "that OPEC meeting at El Taif", about which I knew nothing; another said, "You can't increase production potential from 2.0 to 2.8 million barrels a day just like that, you know"; still another spoke of "secondary recovery". One of my industry "readers" was extraordinarily helpful in such cases. A retired oilman and a scholar of the Venezuelan petroleum industry in its international and national contexts, he made line-by-line corrections and comments on all five of my reports to the industry. He drew up written examples (for example, a list of the steps and timing that would be implied in increasing production potential by 800,000 barrels a day); he recommended specialized source materials (tables from the
Ministry of Energy and Mines reports, articles from the *Oil and Gas Journal*, a history of Pemex written by one of its presidents); he generously explained many oil industry issues in great detail.

b. Possible sources of error and bias that lie with the subject who is being interviewed

The subject or interviewee (still following Murphy) may unknowingly provide inaccurate data. I suppose that is possible in this study but here, too, there are safeguards. I asked the executives to speak of their own work experiences, not to describe the whole industry. After I asked, "What do you recall about how your daily work was different during the first months after nationalization?", I asked for anecdotes and examples. Where possible I "triangulated", included more than one account of a time or event.

Even so, it may be that speakers did not recall accurately or forgot daily difficulties (like new procedures) but remembered more exciting or challenging events. Maybe this study can be useful in these cases: other industry people may find that the results trigger complementary or contradictory recollections that broaden and deepen the present accounts.

There may also be cases of self-deception, where speakers recalled triumphs more than failures—this is human enough. Such cases could sometimes be detected. When a human
resources manager said, "We did all right in recruiting but not very well in incorporating new managers," I tended to believe both appreciations, the success and the failure, since he had been in charge of both operations. But when an oilman attributed most successes to oilmen, or "insiders", and most failures or errors to "outsiders" or non-oilmen, I searched for new evidence from other interviews, outside appreciations and industry readers.

One reader had entered the industry recently, after twenty years in the government; he was quick to discern "typical" industry perceptions and behavior as they contrasted to other parts of the government. ("The oilmen cannot believe that the President would really cut their salaries, but he might"—and he did.) In another instance, an Agropet director said that Agropet had succeeded in restoring tenure to a man who had lost it through a power play. But one of the readers referred to the same incident and told quite a different story, a story about negligence, not political revenge. There may have been self-deception or inaccurate information here; in any case, I recorded both versions.

The fact is that different perceptions of the same event or process were intrinsically interesting for this study. Chapter VII centers on different perceptions in the oil industry and the government, and in Chapter VIII there are two different visions of the corporate planning process, a subsidiary director's vision and a PDVSA director's vision.
The contrast itself illustrates the complexity of the intracorporate world of the industry.

A speaker or subject might be unwilling to cooperate for whatever reasons of his own. My sense was that, after the initial interviews, most of the people were perhaps somewhat skeptical but willing to cooperate. After the first questions, many speakers seemed to warm to the topic, to recall incidents about nationalization, to muse over the questions and to raise new ones. Chapters V through VIII offer ample evidence of this.

But there were exceptions. One man was at first very aggressive about the study since he believed his own department should have been conducting it. I confronted him and he later agreed to continue the interview and even requested a second one to expand his thoughts. Someone else was evasive: "Ask someone else", "I don’t recall", "It’s hard to say". He looked very uncomfortable and I recorded many grim silences in the transcription. Little of his interview could be salvaged; he did, however, identify principal actors in international sales who were later interviewed. One man’s remarks were so general as to be virtually useless and I failed altogether to induce him to be more concrete; two others set out to answer their own unspoken questions and didn’t stop talking for an hour or so! One of these two in fact gave an interesting historical view of the oil industry in Venezuela, but the other was just exasperating.
c. Sources of error and bias that lie in the interview situation

The subject may, says Murphy, act in the interview in ways that are not normal or provide answers that do not reflect his true views. This problem is normally referred to as reactivity or the Hawthorne effect, and it is the main reason why interviewing is "second best" to observing and intervening; I have already said that "second best" was the only possibility in this case.

The last potential source of error and bias that Murphy names is omission:

"Because fieldwork is designed to explore issues in depth, it naturally has to be selective ... a lot is never seen, heard, or read. It also means that what is observed may not be representative behavior. These omitted data, if gathered, might create a different picture ... (1980:67)."

This is relevant to the present study. I saw, and two of the industry readers concurred, that two important topics were missing from the interviews: corruption and internal politics. The above fragment of a transcription refers to corruption in a fairly general way and emphasizes its absence in the Venezuelan oil industry. But neither this man nor anyone else referred to the case that was daily in the press at that time: a group of employees from Maraven was accused by Maraven itself and by PDVSA of selling information to
clients. All the suspects were turned over to the national authorities. (The incident was made into a movie in 1987). The readers believed it was an isolated case and agreed with the company director, a part of whose interview transcript is cited above, that the Venezuelan petroleum industry is quite free of systematic corruption, and outside observers also said this. Still, this is an important omission.

The failure to mention internal politics seems to me more serious. Surely no large, old organization is without its politics, and outside speakers mentioned and even identified members of internal power groups. One reader went so far as to agree that such groups always exist, but that in his view they did not get in the way of the merit system of promotion or the efficient production and distribution of oil. To me, however, the lack of reference to internal politics is an important omission, especially in an industry which consistently points its organizational finger at the hopelessly political state and the rest of Venezuela. I believe that the industry may be relatively free of traditional party politics, at any rate at lower levels, but I doubt seriously that internal politics are absent or entirely unrelated to issues of merit and perhaps of efficiency. Indeed, the very absence of any reference to such issues makes me think they must be very important indeed. But I do not have sufficient evidence to support or explore this carefully.
# ANNEX III-1

**VENEZUELA:**

**HYDROCARBON CONCESSIONAIRE COMPANIES AND CORPORACION VENEZOLANA DEL PETROLEO, 1973**

<table>
<thead>
<tr>
<th>Name and holding company</th>
<th>Country of origin</th>
<th>Year founded</th>
<th>Concession area 31 December 1973 (1000 hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoco</td>
<td>United States</td>
<td></td>
<td>5.5</td>
</tr>
<tr>
<td>Caracas <em>(Ultramar)</em></td>
<td>United Kingdom</td>
<td>1938</td>
<td>27.7</td>
</tr>
<tr>
<td>Chevron (originally Richmond)</td>
<td>United States</td>
<td></td>
<td>77.9</td>
</tr>
<tr>
<td>Continental <em>(Conoco)</em></td>
<td>United States</td>
<td></td>
<td>.8</td>
</tr>
<tr>
<td>Coro *</td>
<td>United States</td>
<td></td>
<td>55.9</td>
</tr>
<tr>
<td>Creole <em>(Exxon)</em></td>
<td>United States</td>
<td>1920</td>
<td>580.3</td>
</tr>
<tr>
<td>Charter</td>
<td>United States</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td>Eastern (l)</td>
<td>United States</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>International <em>(Exxon)</em></td>
<td>United States</td>
<td>1920</td>
<td>6.1</td>
</tr>
<tr>
<td>Mene Grande <em>(Gulf)</em></td>
<td>United States</td>
<td></td>
<td>593.7</td>
</tr>
<tr>
<td>Mito Juan</td>
<td>Venezuela</td>
<td>1965</td>
<td>33.8</td>
</tr>
<tr>
<td>Mobil <em>(first Socony)</em></td>
<td>United States</td>
<td></td>
<td>144.1</td>
</tr>
<tr>
<td>Phillips</td>
<td>United States</td>
<td>1946</td>
<td>39.4</td>
</tr>
<tr>
<td>S.A.P. Las Mercedes</td>
<td>Venezuela</td>
<td></td>
<td>89.2</td>
</tr>
<tr>
<td>Shell</td>
<td>Holland</td>
<td>1913</td>
<td>295.7</td>
</tr>
<tr>
<td>Sinclair</td>
<td>United States</td>
<td>1922</td>
<td>39.1</td>
</tr>
<tr>
<td>Talon</td>
<td>Venezuela</td>
<td></td>
<td>60.2</td>
</tr>
<tr>
<td>Texaco Maracaibo</td>
<td>United States</td>
<td></td>
<td>3.1</td>
</tr>
</tbody>
</table>

*(continues)*
<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas (Texaco)</td>
<td>United States</td>
<td>110.0</td>
</tr>
<tr>
<td>Vengref (2)</td>
<td>United States</td>
<td>--</td>
</tr>
<tr>
<td>Varco (Arco)</td>
<td>United States</td>
<td>19.3</td>
</tr>
<tr>
<td>Ven Sun</td>
<td>United States</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Total concessionaires: 2,208.7

Corporación Venezolana del Petróleo, Venezuela: 1960: 1,179.0 (3)

Total concessions and CVP allocation: 3,387.7

* Did not operate directly.
(2) Refining concession.
(1) Transportation concession.
(3) Allocated to CVP.

ANNEX IV-1

ABSORPTIVE CAPACITY AND RESERVES OF THE MAJOR OIL EXPORTERS

<table>
<thead>
<tr>
<th>RESERVES</th>
<th>Ample</th>
<th>Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSORPTIVE CAPACITY</td>
<td>Group I</td>
<td>Group III</td>
</tr>
<tr>
<td>Limited</td>
<td>Libya</td>
<td>Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td>Qatar</td>
<td>Abu Dhabi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kuwait</td>
</tr>
<tr>
<td>Ample</td>
<td>Group II</td>
<td>Group IV</td>
</tr>
<tr>
<td></td>
<td>Algeria</td>
<td>Nigeria</td>
</tr>
<tr>
<td></td>
<td>Venezuela</td>
<td>Iraq</td>
</tr>
<tr>
<td></td>
<td>Indonesia</td>
<td>Iran</td>
</tr>
</tbody>
</table>

ANNEX IV-2

VENEZUELA:
GROSS DOMESTIC PRODUCT 1950-1982
(Current and constant prices)

Billions of bolívares
(logarithmic scale)

--- Real GDP, 1968 prices --- Nominal GDP, current prices

Source: Gustavo Escobar, "El laberinto de la economía", in El caso Venezuela: una ilusión de armonía, compiled by Moisés Naím and Ramón Piñango. Caracas: Ediciones IESA, 1984, page 77. (Obtain permission to reproduce.)
ANNEX IV-3

VENEZUELA:
PUBLIC AND PRIVATE GROSS FIXED INVESTMENT
(Constant prices of 1968)

---

Billions of bolivares
(logarithmic scale)

1970 71 72 73 74 75 76 77 78 79 80 81 82 83

--- --- --- Total investment
--- --- --- Private sector
---------- Government investment, except oil
---------- Government investment, with oil

Source: Gustavo Escobar, "El laberinto de la economía", in El caso Venezuela: una ilusión de armonía, compiled by Moisés Naím and Ramón Piñango. Caracas: Ediciones IESA, 1984, page 81. (Obtain permission to reproduce graph.)
ANNEX IV-4

VENEZUELA:
INCOME AND EXPENDITURES OF THE CENTRAL GOVERNMENT (1)
1968-1983

Billions of bolivares
(logarithmic scale)

--- Ordinary expenditure --- Ordinary income --- Real income
expenditures (current prices) (current prices) (1968 prices)

(1) Includes Fondo de Inversiones de Venezuela.

Source: Gustavo Escobar, "El laberinto de la economía", in
El caso Venezuela: una ilusión de armonía, compiled by
Moisés Naím and Ramón Piñango. Caracas: Ediciones IESA,
1984, page 84. (Obtain permission to reproduce graph.)
ANNEX VI-2

LONG-RANGE MAINTENANCE IN 1975: A PAINFUL YEAR

DILEMMAS OF LOYALTY/ BUSINESS AS USUAL/ NEW EMBLEMS AND OLD
FACES/ FROM CONTRACTION AND SCARCITY TO GROWTH AND SPENDING.

Minimum maintenance was required of the concessionaires by
Decree 832, enough to maintain the investment (Interview
67.1/8), but several people qualified what was actually done
as "very little" or "short range", and the government had
decided that the concessionaires' inventories were to be
checked in 1975 by a commission of Ministry and
concessionaire employees. Their report would be the basis
for future investments in long-range maintenance, investments
that would make the industry more responsive to changes--
presumably increases--in world demand.

But long-range maintenance was actually a crucial response to
changes in two environments. The expectation of a growing
market meant that production potential should be kept high.
State ownership gave the industry a longer future--well
beyond 1983.

1975 was a painful year for maintenance managers. There were
abrupt changes of criteria (short- to long-range) and
dilemmas of loyalty. To illustrate the dilemmas, I have
selected the interview of a former operations manager who was
part of the commission and who recalled the transition as a
time of anxiety, nostalgia and excitement.
Former Operations Manager 22: I was in maintenance then, in (western Venezuela). We set up work teams in the different areas. Then we had meetings with (our transnational company) and the Ministry of Mines. Then we would write up the minutes, with lists of what was good, bad, so-so, and we set up plans for repairs.

Interviewer: So you were right in the middle between (your company) and the coming nationalized industry?

Former Operations Manager 22: The most uncomfortable position you can imagine! And besides, it was my responsibility to have it all in good shape before the nationalization, for the government, but I was working for (my transnational company)...

I must say that the government had lots of confidence in us, and what is more important, we were working with technical criteria...

The reference to technical criteria responds, I think, to the suspicion voiced by many managers in 1975 (Luque Quiñones and Rodríguez Sosa 1975) that nationalization would mean that political criteria would begin to replace technical ones.

Then he spoke of the process as not being traumatic in any way; this reflects one of the watchwords of these years, "no trauma".

Former Operations Manager 22: He led up to it, like a student leading to a degree. It wasn't traumatic in any way.
It was really gradual. This is because, first of all, (our transnational company) had the luck to have a President like (ours). He had great vision. Let me tell you about before 1976...(our company) injected in us the idea that the enterprise was ours.

Interviewer: How did (your company) do that?

Former Operations Manager 22: It was the culture. It was like a congregation.

Interviewer: But there must be incentives to produce that sensation.

Former operations manager 22: Yes. Confidence in people. Complete authority within specified limits. If you were in charge, you were in charge. ...

So, as nationalization came closer, we began to feel worried. What will happen? We felt sorry the company would leave. ...What will happen?

There were two feelings:
- we should spend as little as possible, for (our transnational company); and
- we should spend well for the future of the industry.

At that time (our company President) visited the Division and we told him our concern. He said something that became a slogan: "Business as usual." It was useful for us to make decisions from then on. If the decision for years had been,
"Don't do it", we didn't. If we had been doing it, we did it. That helped us to be loyal to the firm and prepare for the change.

...In 1975 and early 1976 our budgets were rock-bottom. It was a situation like a war. What is the least I can spend to keep this thing going without exposing myself to accidents or insecurity? "Business as usual", right up to the end, without falling into the trap of not spending just for not spending. ...

Here what is implied is a sense of relief that his company president eased the managers into nationalization, with his personal presence and the motto, "Business as usual". But the old values--confidence in people, authority within limits, a culture like a congregation--were hard to leave behind and he was worried as nationalization approached.

Former Operations Manager 22: We changed the (company emblems) for the nationalized emblem in twenty-four hours. Well, there was some nostalgia when we did that. That was a nice feeling, too, of something important that left.

On the other hand, we could see that the bosses would be the same, but the owner would change. And that was the serious problem. Nationalization.

Interviewer: Didn't production and maintenance go on as usual after the industry was nationalized?

Former Operations Manager 22: ... Before nationalization our
work was very intense. Maintaining an industry in condition without much expense. We worked a lot, without a schedule, all of the time. Nationalization came. He changed emblems but not bosses, offices, secretaries. . . .

But suddenly there was an avalanche of starting-up activities.

Here he begins to describe the expansion that accompanied nationalization but which was a phenomenon in itself and required specific responses, a change in direction after years of contraction and restriction.

**Interviewer:** When did you feel it, the avalanche?

**Former Operations Manager 22:** In the first six months after nationalization . . . . Really, the first year we were more or less lost. We came with a culture of restriction, low activity. When they began to say, "Action!", we didn't know how! . . .

They kept saying, "Spend, spend, spend," and we couldn't. During the first year we couldn't spend more than half of the budget. Even so, we reacted very quickly. (Our company) had trained us well in restriction, but not in expansion. It took us about three years.

It was hard to get people. There were some good petroleum engineers, but not many. We need more support, more engineers to say where to explore. We had to set up training
courses, both supervisory and technical. It was a kind of explosion.

The explosion, the sudden spurt in investment, meant hard work for the industry managers, and several people referred to it in their interviews. This man suggests that the motivation was built into the company’s culture.

**Interviewer:** How did the (nationalized) enterprise motivate you to expand?...

**Former Operations Manager 22:** I had never thought of that. How did they get us to do it? Our urge to work was huge. (Our manager) was the same as before nationalization. The discipline, the confidence, were there. We didn’t get a raise, nor a bonus, no overtime. It was our work. It was the rules of the game.

But we never thought the growth would be so great. It’s like when you have to pay a million bolivars. You can’t. But you do it little by little and suddenly you hit a million. *(Interview 65.1/several pages).*
ANNEX VI-2

AN INNOVATIVE DRILL SCHOOL

The former operations manager tells what it was like to begin again, and he draws an example of an innovation, a drill-school to train recently graduated engineers to be tool-pushers, that arose from the scarcity of qualified labor in a competitive international oil world where every company was drilling.

Former operations manager 22: ...then we began to drill. It was a new beginning. We began to put steam plants into service that had been idle for five or six years. That is a lot of work! Five or six years idle! We had put people out of business, we had to rescue those who were there. They trained people for the plants.

Interviewer: How many plants?

Former operations manager 22: ... In 1977, two. Then in the next two years, the next three plants. Without drilling equipment, you can't do it.

And tool-pushers. Then we realized we didn't have them. The tool-pusher is at the front of the drilling rig. We brought them from the States—fifteen days in, fifteen out, at five hundred dollars a day! We didn't have them, and we were in competition with the States, and with (another subsidiary of PDVSA). At first we got the worst ones. Forget it, in the States they were needed, too. We got those who didn't get
work in the States, adventurers, not the best, at first. Then we generated a drill-school (taladro escuela), to train tool-pushers.

**Interviewer:** Is the tool-pusher an engineer?

**Former Operations Manager 22:** He is the person who has fifteen years of experience to get there! He is vital. We tried to make tool-pushers in two years, with the simplest drilling methods (Interview 65.1/6-7). ...

**Interviewer:** Did you do it?

**Former operations manager 22:** ... We would take the best Venezuelan tool-pusher. You know, drilling people are usually the roughest, because of the kind of work. We would take the best one in human relations. We wouldn't ask the drill-school to produce so much, because it was teaching. We would take engineers (recent Venezuelan graduates from the Universidad del Zulia) and put them to work as laborers, carrying pipes.

**Interviewer:** Why did you do that?

**Former operations manager:** The only way to become a tool-pusher is to know the whole operation. We think that if they don't do it, they won't understand all of the functions. We made laborers of them, for about a month.

**Interviewer:** How did they react?

**Former Operations Manager 22:** Wonderfully. We never thought
the result would be so good. Next to the drill, we had a trailer. We had it as a place to tell people how to do things better. It was a school.

After a month at the drill-school, they would go to the regular drills, and spend two weeks there, and return at the next level, as helper. So, eventually all of the drills were schools. ...

This idea came, maybe, from (another PDVSA affiliate). I know they applied it in Oriente. I don't know about (a different affiliate).

The engineers were petroleum engineers. It was interesting. Let's say we had ten engineers from the same graduating class. Five of them went the usual road, and they would go to the drilling rig and meet with the other five, who were now tool-pushers...but also engineers.

It was a very agreeable experience. ... we thought they wouldn't last. And none left. They were not being treated as engineers but as drillers, which is very manual labor. Always at a disadvantage. They made a kind of brotherhood that was fascinating. ...

Once we saw this system worked, we saw them as potential experts in barras de perforación (the liquid that lubricates the walls ... of the well), in machines, in selection of equipment. (For that you need) someone who knows machines and drilling. Someone who keeps the walls firm, and this is
a very important art. So the engineers who had worked on drilling could be very good for this (Interview 65.2/1-3).
Retired Oil Company Director S: Exploration? Okay. At one time or another the oil industry in Venezuela was a fairly integrated operation. Certainly Creole and Shell had almost everything, except research. ... Of course, when you needed someone, you always could bring someone from outside, or use internal channels. (Yet) we were very conscious of making the company Venezuelan. ...

Under Pérez Jiménez, 1956 and 1957, the last concessions were granted, which brought a lot of new companies and brought in a lot of production, but then the "no more concessions" motto was out and there was no more exploration in the country. It was dismantled.

So one of the big changes that occurred right after nationalization was that the whole exploration group was set up. There was a strong emphasis on bringing up all of the managerial positions in a very short time, and this was done surprisingly successfully.

Interviewer: Why surprisingly?

Retired Oil Company Director S: Because you shortened the lead time of producing a manager considerably, and it worked.

Interviewer: How did you make it work?

Retired Oil Company Director S: You had inertia. You had a
snowball rolling downhill, and it didn’t stop. Also, you had a lot of hard and long and instilled corporate discipline in the hands of people who had essentially run or helped run the company, or became the top people, and they perpetrated the kind of controls and morale that had always been used, and the bosses used it, too.

Interviewer: Where did you get the managers? What Venezuelans had done exploration before?

Retired Oil Company Director 5: We had people who had come up in production, department heads and section heads, and they worked. And you had outside advice. ... We had geologists a dime a dozen, and we had three (well-known veterans) besides me. But we had been out of exploring for twenty years, out of geology, and the others too, but there were people who had studied it, even if they hadn’t done it. Before, there was no area you could explore but you had the people. It worked (Interview 59.1/1–2).
International sales was a real challenge for the newly nationalized industry. The retired oil company director contrasted exports with exploration. Exploration had been a comeback; exports was new.

Retired Oil Company Director 5: ... after nationalization you went into areas where you hadn't been before. Exports. Except (one company), which says they had it here, and I think they probably did, ... we handled them through (our holding company overseas), with its international distribution channel.

So international sales was nationalized. And it worked.

Interviewer: And why did that work?

Retired Company Director 5: A lot of us had been dedicated to the international side for a long time—(four leaders from two major companies)—either directly, or controlling.

... It was facilitated because... as part of the nationalization agreement, the government had insisted on a large proportion going out through the multinational companies, Exxon and Shell. So a lot of the volume had a simple destination and a simple payment mechanism, and so it worked. They were good payers (Interview 59.1/3).
1. Diversification of clients

Continuity of export volumes was the first mission. Diversification of clients was the next step of the international sales strategy, and it was PDVSA's job to promote diversification of clients in the three exporting affiliates (Interview 81.1/1).

Diversification referred to the number of customers rather than to major changes in the geographical distribution of the customers. Because of the transportation costs, the industry policy was still to concentrate on the traditional areas, above all the east coast of North America (Interview 82.1/5). And in fact, between 1976 and 1985 the number of customers grew from fifty-five or so to over a hundred, while the proportion of Venezuela's oil exports that went out through the transnational distribution network dropped from four fifths of total volume to one fifth (Interview 82.1/5). Even so, the retired oil company director qualifies the success of diversification:

*Retired Oil Company Director 5*: The diversification of markets after nationalization is to a large extent fictitious, and I'll tell you what I mean. ...

*(When) the orders clearly came through to diversify and cut back, to get new customers, in fact a lot of the customers were not new customers but had already been small customers. They were distributors, largely from the States, some*
Europeans, some new refineries and some new oil companies that simply got to buy from Venezuela. But some of them had been indirect customers. For example, (we) sold directly to some and indirectly through (the holding). ...

(Before nationalization, our company was) a special case, and we handled only certain kinds of products, mostly the US East Coast, some in the Gulf, a little on the West Coast. We had only about fifteen customers. The rest went through (the holding). I don't know that that was typical for the industry.

... But, of course, with diversification you eliminated, although this never materialized, the potential possibility that one of the large customers could have a falling out with you and you had no offtake to substitute. You had smaller customers, so they were more dependent on you than you were on them.

But we never really had problems. We had reliable customers, and nothing happened. There were very, very few payments problems, ever. I know of less than half a dozen.

Interviewer: Is the form of payment still the same?

Retired Company Director S: No, it has changed over time, depending on the strength of the market. It depends on, one, where you deliver, and two, who the customer is. Credit terms have changed from thirty up to as much as ninety days, but usually thirty to sixty days (Interview 59.1/3-4).
2. Coordinating the affiliates

a. A new task

From the first, sales was placed in the operating affiliates of the newly nationalized industry, not in the holding company. This key decision—whose origin I was not able to discover—made profit centers of the companies that exported. The Presidential Commission (República de Venezuela 1977) explicitly recommended the creation of an enterprise for international sales as soon as the holding company was set up, but this did not materialize. Except at the very beginning, the exporting operators were just three: Lagoven, Maraven and Corpoven.

The holding company was to coordinate the tasks of marketing of the affiliates so as to avoid "unhealthy competition" among them. The issue was not so much the possibility of disloyalty as it was the need to take into account that the oil market is a market of perceptions and if PDVSA, for instance, had several shiploads leaving at once, the buyers might think, "They are in trouble; I will wait" (Interview 81.1/3).

Chapter III identified the common strategies of the Venezuelan subsidiaries of the transnational companies with respect to the market. But the degree of autonomy that was allowed by the respective holding companies overseas was, said several people, different in the area of international
sales. In Latin America, Shell de Venezuela had been the Shell center for trading, above all of products. (Trading refers to the most day-to-day transactions, made by telephone, rather than contracts or spot sales. Trading could include a series of shipments.) (Interview 81.1/2).

Shell de Venezuela called itself a profit center (Interviews 14.4/3 and 43.1/1) and Shell de Venezuela supplied crudes to Shell’s refineries in the Caribbean and Caracas planned the activities for them (Interview 43.1/1).

Exxon had minority shareholders in the United States who "could ask a lot of questions", and Exxon therefore exercised greater controls over Creole than Shell International did over Shell de Venezuela. Creole sold a large part of its exports to the Exxon network (EITCO), but another and substantial part—about 350 to 400 thousand barrels a day—was sold to third parties, and this was done to ensure that the prices reflected the market (Interview 81.1/2).

Mobil didn’t have international sales. It sold to its own refineries in the United States, though it may have played somewhat in the residual markets, from El Palito (Interview 83.1/2).

The Corporación Venezolana del Petróleo was a fully integrated company, but its operations were small and it sold very little overseas, and there were no references to international sales actions of the other companies before nationalization, except that "the others were cost centers"
The Venezuelan concessionaires had competed "tastily" with each other before nationalization, especially Creole and Shell. Creole might buy from Shell Venezuela, for example, and turn around and sell to Shell Canada (Interview 81.1/2). Now these former competitors had to be coordinated so that their combined actions would benefit the general interest of the whole petroleum industry. It was PDVSA's job to see to this.

Retired Company Director 5: Another change. All of the people who had been competitors, the companies, and had different norms and standards, had to be unified. That was much less clearly an outstanding success than many other things. It took too long. In the first few years, it wasn't done. The executive style of PDVSA for a while was perhaps not the best, and it is very difficult to bring it back on track now, and that is clearly the effort. Maybe.

Interviewer: What would be an example of a difficulty in unifying former competing companies?

Retired Company Director 5: On the export market you shouldn't go to the same customer, and you should divide the market (Interview 59.1/5).

As this man totted up his balance of the results of nationalization, he counted exports among the successes, together with exploration and research, even though
diversification of customers was, he believed, to a large extent fictitious. But he found that the related changes in the intracorporate environment were "much less clearly an outstanding success", "took too long" and, in the first few years, "weren’t done".

A PDVSA Director (12) who worked in Trading and Sales in PDVSA just after nationalization offered a closer view of the early years of international sales in the nationalized industry. The holding company had to undertake new tasks, as coordinator of international sales: documentation, communication, transfer pricing, building PDVSA’s strength in this area and coordinating supply.

b. Documentation for the government

PDVSA Director 12: ...since it was a new owner, the rules were different. For example, you had to have better documentation for the Contraloria. It wasn’t like before, when they might ask you five years later why you did something and you would tell them. Now it was a question of constancias, normas. ... You had to recognize that you had to be better documented (for the Contraloria) and anybody else, or the Ministry of Mines, or Hacienda. And now, the Salvaguarda, too.

This documentation was relatively simple for Lagoven because it followed the Exxon procedures for the minority shareholders. But the Shell tradition is more maverick. It is
based on results. They had far fewer controls. Corpoven, well, CVP had almost disappeared; almost everyone was new. ... it had no tradition.

c. Communication among the affiliates

So what was important was to sit people down and discuss how they were going to do things, what norms, et cetera. It was a difficult step because everyone wanted to keep on doing what they had done; convincing them wasn’t easy (Interview 81.1/3).

To communicate with one another, the managers of international trading and supply had a committee, the Comité Interfilial de Compradores, usually chaired by the PDVSA Coordinator of Trading and Supply and the Liaison Director. It met about once a week. LLanoven and Palmaven wanted to keep on exporting once the original contracts were up; PDVSA wanted to ease coordination by limiting the exporting subsidiaries to three, and this was achieved (Interview 81.1/4).

d. Transfer pricing

Once it was decided that only Lagoven, Maraven and Corpoven could export, the other companies traded their crudes and products through these three. This raised the question of transfer pricing.

*PDVSA Director 12:* Another question was, what price?
Maraven bought from Meneven—at what price? ... It is still being resolved! At first, it was cost plus fifteen percent. "If we can’t sell, we don’t want to take a risk". So it was a burden for Maraven. That was corrected. PDVSA publishes consolidated accounts from the very beginning. There are no published enterprise accounts (Interview 81.1/4).

e. Building PDVSA's strength without weakening the affiliates

PDVSA signed all the commercial agreements with the former concessionaires—an unpopular decision with the affiliates (Interview 83.1/3)—and this gave PDVSA the last word. But in fact, the commercial activities were left in the affiliates and they received income directly from their operations. A PDVSA Director, speaking early in 1984, wondered if this was in the general interest of the industry:

**PDVSA Director 2**: With nationalization the archdukes REALLY became archdukes. They had income! This is a big difference. You manage the whole thing. If you take this away, you may get more care with expenditures, although you may lose self-image (Interview 14.4/3).

A difficult area to standardize had been contracting of ships. The companies insisted on doing it themselves.

**PDVSA Director 2**: We aren't sure (why). There may be some operational reasons. Timing is very important and maybe they
are afraid of this. But we think that the negotiating power of the industry as a whole is important (Interview 14.4/1).

One company, for example, resisted for months the idea that its oil could be handled with pipelines from other companies. It had to be convinced that there was no more money before it would accept it. But right after nationalization, in the years of growth,

**PDVSA Director 2**: ...the atmosphere was that the power of decision of PDVSA was only potential. It didn't have to be applied. This is because the industry was expanding. Choices weren't so hard. ... We used to accept the recommendations of the operating units. PDVSA had the last word but it didn't use it. PDVSA was a kind of superstructure that didn't help much. There wasn't real authority. Today we are realizing that we have waited too long. The expenditure level is being more and more criticized. I wonder if we couldn't have exercised more control before being pushed into it by circumstances.

... Another type of decision is international marketing. Some people think it should be centralized. Others disagree. This has to be looked at again. I don't know of any oil enterprise, private or state, that works as we do—three sellers—that wouldn't happen. ... It gives each subsidiary the image of being a profit center (Interview 14.4/2-3).

PDVSA did get stronger over time, and PDVSA Director 12 saw
that as a partial result of working together. He thought it was not organizational learning, but adapting to a changing world.

**PDVSA Director 12:** It isn't a question of *dictamen*es that haven't been discussed previously. Normally the decisions come from initiatives from the affiliates. When you have experience in managing situations, even in an affiliate, you quickly learn that for the order to be put into effect, people have to participate (Interview 81.1/4).

**Interviewer:** Has it been a process of learning?

**PDVSA Director 12:** No, not learning. It is a changing world. I don't think it's learning. I think it is adaptation. From the beginning PDVSA tried to be as participative as it could be. That was an explicit directive. But persons have to implement that. And some coordinators, for example, didn't understand, nor people underneath either. If a president of an affiliate was angry he would go to Rafael Alfonzo Ravard and complain.

It isn't an easy relation. PDVSA started with the idea of a holding company with strong affiliates that act as enterprises. But it isn't black or white, when you can do something without controls from PDVSA. But you are constantly discussing and coming to agreements. Sometimes you get mad and fight, but mostly it has worked, with ups and
downs, but a trend—I don't think it was learning, because it was there from the beginning (Interview 81.1/5).

He constrained Trading and Supply with other PDVSA functional coordinations and found that it was very different.

**PDVSA Director 12:** Two of them are very difficult: Finance, and Trading and Supply. And Corporate Planning. But it isn't operative. It does have to be centralized. But Finance was centralized from the beginning.

Trading and Supply is too delicate. Too many possibilities of conflict, and there is a need to coordinate. They don't all have the same crudes or products, so the market for some may be worse than for others, and they get mad. ... But in finance the resentment has been less. In Trading and Supply the affiliates have to do things, but we may coordinate and make the final decisions (Interview 81.1/5).

An oil company manager contrasted the supply function at the level of the operating company with what is expected of supply in PDVSA. Within each subsidiary, he said, supply is the coordinating function; it coordinates the requirements of crudes and export products, on the one hand, and the internal market on the other. Supply determines the different levels and kinds of products and crudes. Supply coordinates volumes, quality and diets to the refinery, all as a function of the market demand, and it communicates all the time with the refinery, with the terminal and shipping, with trading.

"This is what is needed to produce so much of this and that".
Supply looks ahead only a year or less (Interview 83.1/4).

But in PDVSA, the supply part of the Trading and Supply coordination is not operative; it was set up to coordinate the supply activities of the three exporting operators. And that was entirely new for the Venezuelan petroleum industry in 1976. He gave an example.

*Company Manager 26:* ... here is one instance. Early in 1976—and I wasn’t even in PDVSA; I went on January 24 of 1976—we were just getting to know each other. We went to a meeting in Supply in PDVSA. ... One affiliate, I don’t remember which, said, “Our tanks are full and I don’t know how to get rid of the product”. We in (our affiliate) had a ship that transported crude. ... I left the meeting and I called ... later and said, “We will put our ship at your disposal” (Interview 83.1/4).

This entailed, afterwards, the question of how to account for the transportation costs, but the central issue was not the costs but the willingness to cooperate as part of one organization and this, he said, was "a beautiful example" (Interview 83.1/5).

PDVSA Director 2 described the coordination of the supply functions in the three exporting affiliates from the point of view of PDVSA as an interactive process:

*PDVSA Director 2:* There is an interactive process. There is
the equivalent of what in Creole we called the PRM Committee: producing, refining, marketing committee. There is a PDVSA interaffiliate committee. The key people get together, monthly or more often, and talk on the phone all the time. They agree on the programs or on the major elements of them. PDVSA has the equivalent of that PRM Committee, but there is only an interaffiliate coordinator. PDVSA does not tell Maraven what to do, but it does take the role of arbiter.

Interviewer: Could you give me an example?

PDVSA Director 2: One company has too much inventory of fuel oil. In El Palito refinery, for example. If left on their own, they would have to curtail refining operations at El Palito. But before that, they can take liftings—some customers who are going to lift from the refineries at Amuay or Cardón can go to El Palito to solve El Palito's problems. It can't be done by Corpoven, Lagoven, Maraven alone. They wouldn't do it. PDVSA steps in and says that the cost to the industry of cutting down operations in El Palito is so great, we have to protect the general interest, at the expense of one company. So Customer 6 will have to go and lift at El Palito. So there is an arbitrating role, or a court of last appeals, in PDVSA.

But the great bulk of marketing is done on an interaffiliate basis which functions surprisingly well. Supply people talk to each other all of the time, across the affiliates. There are jealousies, of course. For example, Meneven has no
commercial function, so they claim that the other companies cut back on Heneven when things get tough. But there is constant contact (Interview 14.5/7).

The concept of "the general interest" was inherited from Exxon.

**PDVSA Director 2**: ... well, in Exxon, for instance, each company had analyses from guidelines from the holding company, but then there was a round-up analysis of what was called "the general interest", the interest of Exxon as Exxon-as-a-whole (Interview 14.4/2).
ANNEX VI-5
THE Veba CASE

1. The case of Veba Oel

Here is a summary of the PDVSA Director's presentation of the Veba case (Interview 84.1; the summary has not been reviewed by the Director).

The economic behavior of the international oil market and the Venezuelan domestic oil market, together with the legal framework of PDVSA, set the stage for designing and implementing the international sales strategy for the 1980s.

a. Economic behavior of the international oil market and the domestic market

In 1980 the future of the international oil market looked rosy for producing countries (see Graph II, page 162). By 1990 world oil demand was expected to grow from 50 million to 70 or 80 million barrels a day, while prices would increase from $29 to $34 per barrel of Arab light to an estimated $50 or $60. The differential between products and crudes would still be $10 or $12, which would benefit those refiners who had the proper deep conversion installations to make more products and better products out of the barrel.

In Venezuela, forecasts for the year 2000 showed that the oil available for exports was going to be, above all, heavy crudes. Domestic demand for hydrocarbons of all kinds was expected to increase as much as sixfold, and the law required
that domestic demand be satisfied by domestic supply. Extensive plans for developing the Orinoco Oil Belt’s heavy crudes were at that time going ahead full steam (they were later postponed). Someone was going to have to convert the heavy crudes, and this was called "the problem of heavy crudes".

The problem of heavy crudes was set in the framework of market prices and of the traditional behavior of the Venezuelan petroleum industry. For forty years, Venezuela’s oil exports had been sold at market prices. No client would buy important volumes at a higher price. And the international price structure is usually coherent—that is, price differentials by location, quality and conversion level reflect real differences of costs and prices over time. This means that it is unreasonable to expect a greater profit by selling free on board in Venezuela than by selling overseas. (Before nationalization Venezuelan oil was sold free on board—prices on Venezuelan soil—as a rule, largely to the affiliates of the respective transnational companies but also to third parties. For the transnational holdings, the f.o.b. price was actually a transfer price, but this was not true for the nationalized industry).

There is another point, and it refers to the relative behavior of official prices and spot market prices of products and crudes in strong and weak markets. It is represented in Graph VIII.
So, in times of strong or sellers' markets it is better to sell products than crudes on the spot market. In times of weak markets, it is not a very good idea to sell crudes on the spot market, and it is better to sell all of the products you can at official prices (including conversion costs); the crudes have to be at official prices given the OPEC agreements.

What does this point imply for Venezuelan oil? Venezuela has never participated in the crude spot market. Most of the oil
was committed in advance, as part of the search for stability. So the option to sell crudes hardly exists in Venezuela, and everything points to the prudence of making long-range agreements to assure volumes of products. In other words, assuring markets (volume) offers the chance for high returns in weak markets, and weak or buyers' markets have been the rule since World War II. And for Venezuela in particular, it is more feasible to assure volumes than prices because Venezuela has little control over international prices—there are too many other sellers and Venezuela is a price follower.

b. Legal framework of PDVSA

In a producer country industry whose legal mandate is to maximize income, sales policy cannot be limited to optimizing in the short range. This is the case of Venezuela after nationalization.

Article 3 of the Nationalization Law stipulates that the industry should seek maximum economic return and a stable, diversified and sufficient overseas market. Article 4 says that diverse means and forms may be used to do this, and it specifies stable transactions with states or state entities of consumer countries as a way to capture and keep direct markets for Venezuelan hydrocarbons. Article 5 provides that the national executive or the corresponding state organisms can associate with private entities in special cases and, when it is in the national interest, with previous
congressional approval.

The legal mandate of Articles 3 and 4 was translated into corporate and functional guidelines for PDVSA that say much the same thing. Corporate guidelines after 1978 included the following points:
- diversified, stable and lucrative markets for heavy crudes,

  - moving toward the final consumer and

  - priority for clients with capacity to pay, technology and secure demand.

The functional guidelines for international sales were:
- consider foreign investments,

  - associate with third parties, and

  - emphasize the specialty market and high conversion, with emphasis on heavy crudes.

The corporate planning premises also said to move toward the consumers, and
- base sales on long-range considerations,

  - assure economic utilization of heavy crudes,

  - increase technological capacity and

  - consider internationalization for placing heavy crudes and participating in schemes overseas.

In short, PDVSA could have sold shipment by shipment, but that isn’t the best way to earn. The spot market goes up and down; it cannot be counted on. Maximizing economic returns means achieving stability in the longer range, and in the longer range important volumes can be sold only at market
prices. Therefore optimization should be achieved by assuring volumes at the lowest possible cost, and that was the policy adopted.

So PDVSA prepared to discuss three things with possible associates: a long-range supply, price formula and financial support.

c. Sequence of events that led to the Veba contract

Even before 1980, PDVSA’s interaffiliate committee on heavy crudes had contracted studies of alternative solutions for "the problem of heavy crudes", and PDVSA had held conversations with Elf and at least eight other companies around the world.

PDVSA at that time supplied very little oil to Europe. Germany in particular was a major consumer of oil, with a demand of around two and a half million barrels a day, practically all of it imported. About a quarter of Germany’s total consumption was heavy crudes. German oil prices were set by the market and there were no exchange controls. Yet Germany bought only ten or twenty thousand barrels a day from PDVSA, and all of these were indirect sales.

In 1978 the Ministry of Research and Technology of the German government and the Ministry of Energy and Mines of Venezuela signed an agreement to carry out joint research for improving heavy crudes. The two parties meet periodically to this day, and over time one of the German participants in the
agreement, Veba Oel, developed and expressed an interest in establishing commercial relations with PDVSA.

In 1980, General Rafael Alfonzo Ravard and other PDVSA officials paid a courtesy visit to Veba AG, the biggest entrepreneurial group in Germany. A holding company, of which the German state owned forty-four percent and many small shareholders owned the rest, Veba AG held electric companies, coal, petrochemical industries, transportation, Veba Oel and other companies. Veba has large refining, petrochemical and storage facilities. About four-fifths of its income comes from petrochemicals. When General Alfonzo Ravard returned to Venezuela, he remarked to members of the PDVSA Board, "Some day we should sell them a hundred thousand barrels a day".

Exploratory discussions followed and Veba sent PDVSA a letter of intent in August of 1980. A first possibility, for a new plant on the German coast, didn't look practical, so it was decided to have it in the interior of Germany. Then there was the problem of transfer prices. Discussions continued throughout 1981, and during 1981 and 1982 Corpoven and Veba Oel celebrated and carried out specific contracts for the purchase of Venezuelan crudes.

In 1982, Veba proposed that PDVSA participate directly in the Ruhr Oel plant, on the following terms: 45% of the Gelsenkirchen refinery, the possibility of supplying and processing up to 100 thousand barrels a day, and the right to
participate in 45% of the Veba Combi Cracking unit, to be installed in the refinery, and access to technology at cost. PDVSA would have had to invest $250 million at the start.

With Veba's proposal in hand, PDVSA sought internal and outside advice on the legal, technical, financial, tax, accounting and labor aspects of it. In August 1982, the PDVSA Board approved a letter of intent whereby PDVSA would agree to pay $210 million and begin with 33% of the stocks, working up to 50% in 1986. The first shipments of crude were sent in December 1982, "as if" the contract were signed.

During the final negotiations several alternatives were explored. PDVSA decided to propose an initial participation of 50%, if Veba would reduce substantially the value of the assets to be acquired. Between August and December 1982 the PDVSA Board informed the Presidents of its affiliates in detail about the negotiations and met with the Executive Committee, the Extended Executive Committee and the Board of PDVSA. On December 2, 1982, the PDVSA Board approved the final version of the agreement, pending approval of the competent authorities of both countries.

Within the month, Veba obtained the necessary authorizations from Veba Oel and Veba AG, the Ministries of Economics and Finance, the Anti-Trust Office and the Office of Labor.

Early in 1983, PDVSA presented the proposed agreement to the Minister of Energy and Mines. The Minister, the Ministry's
Legal Counsel and the Director of Petroleum Economics studied the proposal and then the Minister asked the Attorney General of the Nation for his opinion with respect to the approvals required. The Attorney General replied that the proposed negotiation with Veba was not of the kind contemplated in Article 5 of the Nationalization Law; it was not a contract of national interest. For the same reason, neither did Article 126 of the Constitution apply--it requires Congressional approval for contracts in the national interest. (In November 1982, the Attorney General had given a similar opinion with respect to an association among PDVSA, Pemex and Petrobras to constitute a company in Panama to carry out overseas activities.) Nonetheless, the Attorney General warned that PDVSA should not condition the sale or supply of Venezuelan oil to the proposed joint venture, since that would be considered an activity reserved for the Venezuelan state.

Simultaneously, the Ministry communicated discreetly with the President of Venezuela and with selected members of Congress and the major political parties, to inform them about the progress of the negotiations. This was not an official requirement but it was considered necessary for the success of the agreement.

In April 1983, given the opinion of the Attorney General and after an extraordinary stockholders' meeting recommended by the Legal Counsel of the Ministry and the Attorney General, PDVSA was authorized to acquire 50% of the shares of Veba.
Oel's company, Ruhr Oel (excluding the hydrocracking unit), for $150 million. The formal signature followed.
d. The national environment reacts

As early as January 1983, and more intensely after April, members of Congress and the national press began to question, criticize and attack the joint venture agreement between PDVSA and Veba Oel. The debate continued throughout 1983--an election year--and into 1984 and 1985, first on the grounds of the legality of the contract itself and then on the grounds of presumed irregularities in the administration of the contract.

Some detail of the criticisms and the critics is necessary to illustrate the diversity of actors who could, in some measure, participate in the public debate about oil policy.

Who was most bothered, and about what? Radamés Larrazábal, a Congressman for the Communist party, called the arrangement "the transnationalization of the Orinoco Oil Belt", and said that it reopened Venezuela's doors to powerful foreign enterprises. Congressmen from other parties of the left protested that Congress should have been informed, in accordance with Article 5 of the Nationalization Law and Article 126 of the Constitution, and recommended an investigation.

Congressmen from URD--an important political party--criticized the agreement but chalked it up to the difficulties of the times.
Acción Democrática, the major opposition party, attacked the contract severely. Celestino Armas (Congressman from Acción Democrática and leading member of the House's Energy Committee) said that the Veba contract violated the Nationalization Law because it had been carried out "behind Congress's back". Later he said that Venezuelan interests were being managed by Germans. Carlos Andrés Pérez, AD President of Venezuela at nationalization, favored the agreement but expressed doubts about the applicability of Article 5. AD oil expert Arturo Hernández Grisanti (who was later Minister of Energy and Mines under President Jaime Lusinchi) asked the government to wait until the present agreement was reviewed before making other similar ones. On May 16, 1983, Acción Democrática's Executive Committee appointed a commission to study the technical and legal aspects of the contract, whose results would be taken to Congress.

Most Congressmen from Copei defended the contract. The Minister of Energy and Mines, Humberto Calderón Berti, refuted the allegations that Congress had to approve the contract. The President of Venezuela defended the agreement. In May 1983, Congress called the President of PDVSA, General Rafael Alfonzo Ravard, for a hearing. He stood firm on the grounds that PDVSA had simply followed the opinion and recommendations of the Attorney General, and this continued to be PDVSA's stance before critics.
Other oilmen, active and retired, emphasized the commercial good sense of the agreement.

The journalists were vehement. Rafael Poleo accused the Ministry and PDVSA of signing an agreement with a firm known as being a branch of the German Christian Democracy. The Capriles Chain (Rafael Villoria) spoke of the Copei fallacy, and said that PDVSA had lied to Congress and to the country.

Amadis (editor of El Universal, a major daily paper) said the country needed many more agreements of this kind, and other Universal journalists also supported it. The English paper, The Daily Journal, said the government feared that an open discussion in an electoral year could jeopardize the signing of the agreement.

Even the unemployed engineers got into the act, asking that the Colegio de Ingenieros de Venezuela make a statement, because national universities had research projects on heavy crudes that had not had enough support.

Later in 1983 the Veba case became part of the debates that preceded the national presidential and congressional elections set for December. In August the outgoing President of Venezuela appointed his Minister of Energy and Mines, Humberto Calderón Berti, as the second President of PDVSA. This added to the furor; it was seen by most observers as a political appointment, and both major Presidential candidates said they would not ratify him if they won. This added a sensation of political vulnerability to the industry, which
was still irritated that its oil dollars had been moved into the Central Bank in 1982 (this event is discussed in detail in Chapter VII).

In December 1983 AD candidate Jaime Lusinchi was elected President of Venezuela. He appointed Arturo Hernández Grisanti Minister of Energy and Mines and Brígido Natera, then President of Lagoven, President of PDVSA.

In 1984 the Veba case was still in the newspapers daily, but the nature of the criticisms had changed. Now PDVSA was accused of negligent administration of the contract. Radamés Larrazábal said Venezuela was losing money because of the agreement, because Veba paid in German marks. He also accused PDVSA of issuing double invoices and finally said that Humberto Calderón, Rafael Alfonzo and Wolf Petzall, one of the PDVSA Directors who had negotiated the contract, should be accused of violating the Law to Safeguard National Patrimony. Celestino Armas also said that Veba didn’t pay, and the Federation of Workers said the agreement was for heavy crudes but more conventional ones were being processed.

Humberto Calderón Berti, now ex-Minister of Energy and Mines and ex-President of PDVSA, claimed full responsibility for the agreement but said that PDVSA had not defended the contract sufficiently and this was a sign that the new AD government was weak. Ex-Minister of Mines Moreno León (he had replaced Calderón Berti briefly in 1983) said that the approval was adequate and the country should focus its
attention elsewhere. In May 1984 the President of VeBa made
declarations to the Venezuela press, saying that VeBa had
paid, and that the contract was mutually beneficial.

But there were still criticisms of the proceedings. Navarro
Dona (El Universal) said there should have been private
session in Congress, if not a public one, before approval,
and Valmore Acevedo Amaya (Senator for Copei and head of the
Senate's Energy Committee) asked that the Supreme Court
determine the validity of the agreement. Alvaro Silva
Calderón, who had worked on the Nationalization Law, said
that Congress should have been consulted.

In July 1984, PDVSA put out a press bulletin about the
contract, to say that:
- PDVSA had received sixty million dollars from the
  agreement.
- Any kind of crudes could be sent to Germany.
- The contract had been a gain, not a loss, for the
  Venezuelan nation.
- There had been no double invoicing.
- The agreement did much more than acquire shares of a
  foreign company; it assured sales.

But on 23 August 1984, the AD Commission said:

- The agreement violated Article 5 of the Nationalization
  Law and Article 126 of the Constitution; it should have
  been submitted to Congress.
- It was disadvantageous for Venezuela because heavy crudes were promised and were then replaced with light and extra-light crudes.
- PDVSA's tax figures were false.
- There was double-invoicing.

And the Commission therefore recommended:

- Revision and modification of the contract.
- Increased participation and representation in the management of the Ruhr Oel refinery and more control over the market.
- Supplying only heavy crudes.
- Reducing the duration to less than twenty years.
- Investigation of the differences between balances and invoicing, as well as the income declared by PDVSA and the Central Bank.

The PDVSA Director concluded his presentation of the Veba case here.
2. The managers' reflections on the Veba case

Once the PDVSA Director had presented the Veba case, the managers discussed it. Most of their discussion took the form of questions about what I have called the central dilemma: how can we, as industry managers, respond to the competing demands from the organization's different environments? But toward the end of the discussion, a deeper question surfaced: who are we, here in the nationalized Venezuelan petroleum industry? It was clear from the intensity of the interventions that this question has not been fully answered, and this is an organizational issue that, I argue, shaped organizational behavior after nationalization.

I have ordered my notes of the managers' discussion around the organizational questions that they raised. They included questions that had not surfaced in the interviews, perhaps because it was a group session based on the Veba case. They began with an attempt to define the problem at hand.

a. What is the organizational problem that is illustrated by the Veba case?

As the managers reviewed the advantages and disadvantages of the Veba contract for Venezuela, they concluded that it was a successful business deal. But if the deal was advantageous for Venezuela, as they believed it was, then the managers wondered:

- Why was the national environment so hostile?
- How might the hostility affect industry actions, especially actions designed to implement further the strategy of vertical integration overseas?

- What did the criticism and its effect on industry actions imply for future industry communication with the national environment?

The problem for the industry as an organization was the criticism from the national environment, which this group of managers interpreted as a sign of organizational error, error in communicating with the national environment about the Veba agreement.

They did not try to achieve consensus among themselves but to identify and explore the issues. For an hour or two, they moved back and forth within a nest of questions about communicating with the national environment. For the purpose of this analysis, I have presented the questions separately, but it is easy to see that each one is entangled with the others.

b. Is it necessary to communicate to the national environment during a business negotiation? What for?

One set of interventions emphasized the difficulties and dangers of communicating to the national environment at all during a business negotiation. When there is a business negotiation going on, they said, it is very hard to inform
public opinion. Secrets are necessary so there will be 
flexibility to negotiate. The enterprise needs to establish 
credibility with third parties, in this case a foreign 
enterprise. When you negotiate, the other part thinks you 
have authority similar to his own. And you have to be able 
to make it stick right at the time.

The point was, you can't manage a business deal the way you 
manage politics, and you can't negotiate in a public forum, 
particularly not with oil. The oil business does not fit 
with ample participation of all of the sectors of national 
life. The nationalization law says that fourteen million 
shareholders have been put in the hands of a very few people. 
If the industry had communicated more to the national 
environment, in this view, the deal might not have come off. 
Sometimes you have to put up with criticism, just sit it out. 
Otherwise, Venezuela will have to get used to selling crudes 
and forget about anything else.

The other group of opinions centered on the dangers of not 
informing appropriately and on the need to learn how to 
manage communication with the national environment. The 
attacks on the industry with respect to the Veba case, they 
said, were more than idle criticism. The industry might lose 
autonomy, degrees of freedom to act. Now Congress was 
thinking of changing Article 5, or interpreting it more 
strictly. Maybe the industry had better see if that was 
required or not, whether or not the organization could learn 
to work within Article 5 instead of reforming it. Educating
the public would be one way. Venezuela has democracy and parties; industry managers must learn how to use them well. And democracy or not, this argument continued, these were legal requirements. It was a question of flexibility for the politicians. If Article 126 were regulated (specified), for instance, the politicians would lose degrees of freedom. The industry as an organization must learn to manage this. It was serious, so serious that the PDVSA Directors who worked on the negotiation might yet go to jail. "Our image"—the industry image—in the public eye might be damaged.

**PDVSA Director:** Remember when Rafael Alfonzo Ravard said, "We are different"? He meant we offer a model of efficiency. But to the Venezuelan public, it sounded like, "I work, and you, President and other citizens of Venezuela, don't". Can you do that? There you have a *problemática* (Interview 84.1).

All of this, according to the second set of opinions, could easily lead to more incursions by an indignant national environment into the very autonomy the industry needed to preserve in order to act like a business overseas. How much must the industry communicate in order to preserve that autonomy? How do managers do business, and also deal with the politicians? These were the questions, that was the issue. The negotiation process in the international world involved integration between national and international actors.
c. What to communicate?

Communication meant many things, many actions—to inform, to consult, to ask for advice, to seek approval. And different contents or messages might be communicated—the intent of the deal, the negotiating strategy, the daily details. It was a complex process and there were no easy answers.

d. To whom should the industry communicate?

The managers then began to specify the nature of the national environment more precisely, by identifying the key national actors in the Veba case: PDVSA and its affiliates, the Ministry of Energy and Mines, the President of Venezuela, the Attorney General, the Congress, the political parties, the press and some pressure groups like Fedecámaras. So the notion of "communicating to the national environment" was not a useful operational concept; it was necessary to think of what needed to be communicated and to whom.

In the Veba case, the opposition had come from Congress, above all, and from specific groups within the Congress—the Commissions of Energy and Mines in each house, for instance, and different parties. But Congress was not identical to the parties. And the declarations in Congress were published and discussed by the press and the public. It was hard to distinguish one group from another.

And this meant that the question, "To whom is the industry accountable?", did not have a simple answer. There were
groups to whom the industry was not formally accountable but who could nonetheless affect it indirectly, like the press and Fedecámaras.

e. When should the industry communicate?

Most of the managers who discussed the Veba case agreed that the Congress had to be informed about so important a contract. But when? Time meant different things in different contexts.

For instance time, flexibility of time, was necessary to negotiate contracts with third parties. In fact, the PDVSA Director said that the time for negotiating wasn't a problem in the Veba case; Veba knew all about the problem of timing. It had to refer to the German authorities (though for the final approval this took less than a month, in contrast to four months for PDVSA in Venezuela).

A couple of years, easily, was what the whole negotiation had taken. But during those years there was always the real possibility that Veba get an offer for a similar deal, from the Middle East, for example, and this could happen in the future, too.

Most transnational companies know they can't negotiate with state-owned enterprises so quickly, but a private enterprise might be short of time and private competitors can move faster, too. There was a case, said the PDVSA Director, where PDVSA was invited to participate in a refinery in the
States and was interested, but it couldn't move fast enough owing to the necessary approvals.

Time meant something different in the national environment. Part of the problem with the Veba case, as the managers saw it, was that Congress wasn't told "in time"—in time for Congress to put a stamp of approval and affirm its own credibility, for instance. But it might then also have objected. Former Minister Humberto Calderón Berti, for instance, had said publicly that if he had informed Congress, PDVSA wouldn't have signed.

Another meaning of time in the national environment relates to the cycle of national politics. 1983 was an election year. And that meant that the opposition was more ready than usual to exploit any error for political reasons.

Time could also refer to the oil market, whether it is weak or strong. Later—as will be described below—this kind of time, which is largely outside the control of the industry, turned out to be crucial for the international integration strategy.

PDVSA Director: Notice that Radames doesn't oppose the contract now. He just objects to some of the clauses (Interview 84.1).

"Now" was October 1985, when the oil market looked weaker and weaker.
f. How should the industry communicate?

From the complex problem of what it meant to communicate "in time"—in time to avoid irritating Congress, but not so soon as to jeopardize the negotiations; in time to keep the foreign company interested in a deal with Venezuela but not before the Attorney General's approval had been attained; at the right political moment; at the right economic moment—from this problem, the managers moved on to discuss the issue of how to communicate.

They talked about "the methodology of communication": it could be formal, with speeches or memos, or it could be informal, the invitation to lunch and a whiskey. And Venezuelans, they agreed, are very adept at informal communication, but it was missing or inadequate in the Veba case.

Others added that the error lay in not consulting with the highest political circles (los cogollitos) about the legal part. It was, they admitted, an important contract. It didn't have to be on the radio or in the press, but the Congress did have to be consulted.

Clearly whatever informal contacts had been made were insufficient. The people who were supposed to have control over the party members didn't really have it. Party discipline did not work; there were important politicians who weren't in agreement and they said it.
One manager proposed the law of bidding as a counter example. The Colegio de Ingenieros de Venezuela has to be informed of all of the processes. But with one simple conversation, that had been "taken care of". And the conversation had been possible because there were engineers on the Board of PDVSA.

g. Who communicates?

Given that effective and timely communication had been lacking, especially with the Congress, it still wasn’t clear to this group of managers that it was PDVSA’s job to communicate with the national environment about its business deals. In fact, the Minister of Energy and Mines at the time of the Veba contract, Humberto Calderón Berti, had expressly reserved that part of the deal for himself: communication with the political levels. It was a different kind of contract, it was important, and the Ministry was the industry’s link with the political world. The PDVSA Directors who negotiated the agreement were simply one piece of the negotiation process.

There had been, from the beginning of nationalization, a strong conviction within the industry that PDVSA should not get into politics. And yet a doubt emerged during this discussion about what it meant not to get into politics and specifically about whether or not the PDVSA Board should have political buffers. (Political buffers, as the managers used the term here, may be a synonym for what Kelly de Escobar (1982) calls commissars, whose interest lies primarily
outside the firm, in the political sphere, and whom she
distinguishes from engineers or traditional profit-maximizers
whose interest lies primarily inside the enterprise.)

The President of PDVSA at the time of the Veba negotiation,
General Rafael Alfonzo Ravard, had lived with this kind of
problem all his life—the interaction between autonomous
institutes and central government. That was one of the
reasons why he was put where he was, and his experience
probably enabled him to carry out his strategy with the
Congress, to hold firm with the opinion of the Attorney
General. Julio César Arreaza, and others who had had
experience in the government, were also adept at handling
relations with the political sector. Even so, something had
gone wrong. And if future PDVSA Presidents were to come
primarily from the industry, they would not have the same
background to prepare them for this kind of dilemma.

h. Who are we? Are we public or private?

And here the discussion returned for a moment to the
question of how the industry, as a public enterprise, should
manage communication with the national environment. But this
time the managers surfaced a different kind of issue, a
deeper question: who are we, as an organization? Ten years
after nationalization, the answer was still not easy. In
terms of the organization itself, how it perceived itself,
how the national environment perceived it, what its action
strategy was to be, how it was to adapt its internal behavior
to a course of action, the answer was not at all clear. These managers found, much as the former operations manager had found when he was representing both his transnational company and the Ministry of Mines, as he reviewed inventories in 1975 and early 1976, that belonging to a private industry that had been nationalized was "the most uncomfortable position you can imagine."

Then the managers took their reflections on the Veba case back to the meaning of nationalization. Nationalizing the industry meant that fourteen million people had the right to give their opinion. But suppose Exxon asked the stockholders every time it made a decision? And with the Law to Safeguard National Patrimony, they said, managers didn’t want to make decisions that implied risk.

Others said that couldn’t be changed. Industry managers must learn how to manage the laws, how to manage the public enterprise, to know its own weaknesses. One man summed up this argument:

_I think we’ll learn to manage this as we have learned many other things, other laws. In three years I think we will have learned how to manage it. We are not a private enterprise._

This affirmation, "We are not a private enterprise," brought the managers’ discussion to a halt. What might the silence have meant? It was not implicit, not self-evident, at least not to this group of industry managers, that the industry was
not a private enterprise, and the rest of their discussion of the Veba case centered on this question. Later, one man made the question explicit:

*Are we public, or private? What is the real nature of PDVSA? Who are we? Legally, we are public, but evidently we still feel private, or we want to act the way we think a private enterprise ought to act: with professional capacity, independence and a business strategy. And that isn't selfishness or a wish for power, but simply the way to do it well, in a country which depends on how well it manages oil.*

The PDVSA Director tied the identity crisis directly to the possible political nature of the PDVSA Board:

*PDVSA Director: There is still an identity crisis in PDVSA. That was a problem we discussed in the PDVSA Board with the question of the political role of the Board. I used to say I thought we had to have a political role on the Board. We had to be a bridge. The Minister is a politician. To discuss with him, you must be in the political framework, there in PDVSA you must be political also, NOT just a naive technician. We still have to answer this (Interview 84.1).*

My own observation is that the term "state-owned enterprise" is, within the Venezuelan petroleum industry, a word charged with negative connotations. In a recent conversation with a man in PDVSA I said that I was studying how the industry was adapting to its status as a state-owned enterprise. He
responded with what I can only describe as horror: "Don't use that word here!" Words can be powerful, and if the industry insists on denying that it is a state-owned enterprise, even an unusual kind of state-owned enterprise, it will probably have trouble learning to manage its relations with the state.

In terms of the present study, the question is whether the organization can effectively deal with its frankly political environment by standing aloof from national politics, or if it can incorporate political buffers, commissars, into the organization design without falling into the trap of party politics getting in the way of efficient management.

The organization's identity crisis went beyond the public-private issue.

i. Are we going to become a transnational organization—again?

If vertical international integration were implemented, PDVSA would become an international organization in more than the sales function. It would possess and need to manage operations abroad. For ten years after nationalization the Venezuelan petroleum industry had circumscribed all of its activities except sales to the national territory. By 1985, half of the total workforce and more than half of the managers had been hired into an oil industry that operated only in Venezuela. And the change had begun to show in
subtle ways—younger managers, for example, might not speak fluent English—signs that nonetheless indicated real change, in this example the diminished contact with the international oil world.

What would it mean for the industry organization if it were to become an international industry again? It would not be the same kind of international industry as it was before 1975. The continuity had been broken and the partners would be different.

**PDVSA Director:** Before nationalization we were in fact internationalized and we had assured markets, within limits. Exxon balanced things among its companies but in fact it did take into account the Venezuelan political scene. Then we were nationalized and we severed the ties. And now we must rebuild ourselves. And the former transnational corporations who had concessions in Venezuela are kind of "out of bounds", because we divorced them in 1976 and we can't marry them again now! But you see, we were an international industry for years (Interview 84.1).

This idea seems to confirm Vernon's opinion, cited in Chapter III (Vernon 1983), that it is harder for twenty or more state-owned enterprises to achieve stability than it was for the seven sisters. But the Venezuelan petroleum industry, at any rate, continued to aim at a strategy of internationalization downstream.
j. What are the lessons for the future?

The Veba deal was a successful business negotiation; the managers agreed on that. It brought lots of criticism at home. But in the future, isn't it better to do the same thing again? When the next deal comes, and there is a long line, how would they manage it?

They did a little thought experiment: suppose we did the same thing in Italy right now and came back to say, "It is done". What would happen--applause? Most of the managers thought there would be anger again. Some believed that PDVSA would not make such arrangements again; it would think about Article 5. But the PDVSA Director believed that PDVSA would design a strategy for negotiating as it went along, learning from the Veba case:

PDVSA Director: Could we have made this kind of analysis without actually going through this process? Or was it necessary to take a first step with all of the risks?--of which we were not unconscious, by the way.

It was an exploration. It's funny. In our industry we are very used to spending hundreds of millions of dollars to explore. No one says anything. Dry wells, and no one objects in the Congress. So it isn't just a question of economics. It's more question of personalities, even more than parties. And they must be managed. I respect Radamés Larrazábal because of his coherence, the coherence of his
position, but this is very difficult to resolve. It is exasperating.

You have to negotiate more inside than outside. It is the national environment (Interview 84.1).

3. Epilogue

Late in 1985 and early in 1986, the international oil market got weaker and weaker. The average world price per barrel collapsed from over $25 to $15, as world demand diminished and as non-OPEC production increased.

In Venezuela, where oil revenues provide most of government income and foreign exchange and where foreign debt commitments were substantial, the drop in prices and the danger of losing export volumes seriously threatened the economy and the government’s financial strategy. And as prices fell, overt objections from the national environment—objections to the Veba contract in particular, and in general to the internationalization strategy that the petroleum industry proposed—lost their force and subsided almost entirely.

By 1986, the Veba agreement of 1983 had become simply the first painful step toward implementing the strategy of vertical integration overseas. The industry had extended the contract to cover half ownership in all of Veba Oel’s operations in Germany, which included two new refineries, petrochemical installations and transcontinental pipelines,
with the possibility of increasing to 150,000 barrels the daily shipments from Venezuela to the German market.

And PDVSA President Brígido Natera announced in February of 1986 that the industry was also drawing up an agreement with a Swedish firm, Nynas Petroleum, to develop asphalt and lubricants from Venezuelan heavy crudes for the European market. PDVSA, he said, was completing similar joint ventures with two North American firms. The one with Steuart Petroleum Company included the possibility of assuring 45,000 barrels a day of refined products from Venezuela to the Eastern seaboard of the United States. The other was with Southland Corporation, to acquire half of its subsidiary, the Citgo Petroleum Company, and to assure exports of 130,000 barrels a day of crudes and products from Venezuela, with the option to increase the volume to 200,000 barrels a day (Natera 1986).
ANNEX VII-1

THE GOVERNMENT PLANNER AND THE COMPANY DIRECTOR TALK ABOUT PLANNING

The oil company director spoke of different attitudes toward the future. The national planners were more "mechanical" than oilmen, he said:

*Company Director 2:* ... the methodology...isn't the question. It's attitude, what Pierre Wack calls the psychological basis. It has to do with the idea that you cannot prepare yourself for change, because the future is too much out of control. But very few people are concerned about this. The planners I have seen all seem to take a mechanical approach rather than a strategic one. They all talk about variables, lists—Cordiplán, I mean, and so on. They all seem to do that (Interview 26.2/5).

And in his interview, the government planner also talked about different ways of talking, different languages and styles. He also wondered how much of the oilmen's constant "changing and revising" of revenue forecasts was dictated by the market, and how much was habit.

*Government planner (Cordiplán):* There is a communication problem. ... The oilmen (los petroleros) have languages and styles that are different from the environment. ... The information on the volume of production and the prices changes every week. ... That is the dilemma. How much of the
changing and revising is needed by the market—how much is habit? (Interview 69.1/1-3).

Later, the government planners began to grasp how the oilmen worked:

Government planner: Only when (Company Director 2), a year and a half later, showed us in (his company) how they work internally, did we get any understanding at all. They work with a dynamic basis, while the Plan is relatively static. We work on a five-year perspective. They don't even work on a year, they work on quarterly pictures. They aren't even annual pictures. ... Now, we never understood this until much later. They thought we worked like them (Interview 69.2/3).

But the oil company director also worried that not enough attention was paid in the industry to long term change and to the corporate vision. Strategy, he said, can't be devised without the long term perspective and corporate vision. He discussed these dimensions of planning and offered several reasons for their lack in the Venezuelan petroleum industry after nationalization.

Company Director 2: I think the industry suffers at all levels from the same kind of attitude you detected in the planners: a very strong concern for the short term, a relatively smaller concern for the medium term and almost no concern for the long term. Maybe concern is the wrong term.
Certainly no concern for the long term change. There are two main reasons for this, maybe three.

One is the rapid expansion of the industry in the last few years, which made it imperative to concentrate all efforts on handling the volumes of expenditures, capital, and so on. Second, I don't think many people in the oil industry really realized the depth of change vis-a-vis how things were done before and the need really to devise a strategy. The third reason is historical. This industry had very, very, very few real corporate managers. They had very apt operators. But corporate planning as such and the environmental studies weren't done here. (One company) did some of this for two or three years before nationalization. You add to that that until yesterday, practically, PDVSA was a non-oil corporation in its representatives at the higher levels; if the people were familiar with the environment, they weren't familiar with oil.

It was difficult to structure the corporate planning function and the longer look. ... PDVSA wasn't doing it. Other companies refused to do it because they thought it was PDVSA's job. There was a confusion of roles. Basically corporate planning is an art that is not well-known. ... The organization doesn't understand. But some individuals do.

... Here we really think only about the next few years, that's true.
Interviewer: That is astonishing to me. Aren't the investments longer term than that?

Company Director 2: Technically we go for ten years. Ten is long-term for us, five is middle, two is short (Interview 26.2/4-5).

Late in the 1970s his oil company, however, did make an experiment in forecasting the future of Venezuela, first from the position of the oil industry and then from the perspective of national planners. The company director told how they first extrapolated the behavior of the oil market and then worked back to exploration and investment needs:

Company Director 2: Well, (our company) did make an effort ... to write a document called Venezuela 2000. ...It's interesting in the sense that there is a lot of extrapolation--local market will do this, light oil available will be the other, and so on. So, you need to have so many barrels, so you have to develop the Faja, so you have to explore the Faja, and so on. But it's all extrapolation.

Next they tried what they believed to be a national planners' approach, starting from target growth of GNP:

Company Director 2: Then (our company's planners) did something interesting. A feeble attempt but interesting. They said, "Let's keep oil out of it and say, 'What does the country want to do?' It wants to grow at, say, three per cent. What are the capital needs? The reserves? Foreign
exchange? What can the state-owned enterprises, aluminum and so on, do (and need)?" They made contact with the state-owned enterprises to do this. ... We met with the Banco Central de Venezuela, Cordiplán and the Corporación Venezolana de Guayana. Yes.

Then we identified the gap between needs and availability of foreign exchange. Those were the good old days: OPEC was in good shape and prices were strong. Our study said we needed to be producing...oh, I don't know, 4 to 6 million barrels a day! Can you imagine? (Interview 26.2/6).

The company director did not define what he meant by "strategic" and "mechanical" approaches, but he suggested that "mechanical" has to do with "variables, lists", in contrast to a different attitude, a psychological basis that "has to do with the idea that you cannot prepare yourself for change, because the future is too much out of control". In fact, both of the examples he then cited appear to be more "mechanical" than "strategic" (if strategic planning also means starting with an analysis of the forces that drive the market and the national political economy. Wack, cited in Chapter IV, identifies the driving forces of the market--producer countries, consumer countries and customers--as the driving forces from which Shell derived its scenarios.)

But the examples are interesting because they start from different points. The first experiment started with the oil market's possibilities and worked back to exploration needs
and, therefore, investment needs for the oil sector itself. The second one started with target growth of GNP and worked back to foreign exchange needs and required oil exports; it was still aimed at oil, and the company director thought that this second effort, too, fell short of questioning itself as to what other changes the country might face, such as changes in the demographic and social structures and what they might mean for the future of Venezuela.

According to the second experiment, foreign exchange needed for imports would have been huge. He wondered if anyone could have predicted, in the late 1970s, that by 1983 there would be a serious shortage of foreign exchange. This theme of growing uncertainty recurs and is central to the national planning process in Venezuela after the mid-1970s.

What made these differences in the approaches to planning become an issue in the late 1970s and early 1980s? Why were the different ways of thinking about the future not crucial in earlier plans, even before the petroleum industry was nationalized? The government planner saw at least two reasons:

**Government planner:** Because it was public investment now, competing for the public resources. If oil got it, education didn't.

**Interviewer:** Okay, but what about the income estimates? Wasn't the problem of the dynamic base a problem in earlier
national plans?

Government planner: Oh, yes. That was always a problem, but never in the same measure, because the price changes, up and down, were huge now.

But once again, the government planner wondered if the growing unpredictability of the market was the only explanation for the ever-changing income forecasts. Were there also problems of communication, distrust or control?

Government planner: I don’t know if it was a problem of communication, or distrust (desconfianza), but we didn’t get what we wanted (Interview 69.2/3).
ANNEX VII-2

THE PLANNING CASE

One or two top industry representatives communicate with the government. Maturity and teamwork.

After nationalization, as before, the Minister of Energy and Mines was in charge of developing the energy sector for the Plan. In the case of the Sixth Plan, this responsibility was delegated to the Vice-Minister. But Cordiplán and PDVSA could and did work directly with one another.

*Government planner (Cordiplán):* Historically, hydrocarbons has been the greatest part of that sector. Within the sector, the oil part was always fairly easy to put together. They had a planning unit in PDVSA, which took the responsibility for this. Mr. A (a Director of PDVSA) was always there. He always faced the public for the industry. Mr. B (another Director) did too, but he was more in finance and the international money market at that time. The others were Mr. C (at the managerial level) and two or three more, whose names I don't remember. They are always very close about who talks to the outside world. It was always A or B.

The government planner admired the maturity the industry representatives showed as an institution, how they worked smoothly as a team and turned things in on time:

*Government planner: It's impressive. We had no problems with them in the formal part. Chronograms, all of that, fine*
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Oil executives in turn referred to the need for more dialogue with the state, of the real possibility of being heard, of learning to make effective use of informal communications channels with the Ministry and of the need to review the industry cultural value of "low profile" (Interviews 56.3/2, 38.1/5, 41.1/3-4, 53.3/1, 60).

Develop a coherent argument, based on the need for increased production potential and on profitability.

The oil plan was set up in the context of the energy plan, but in fact oil was distinct from the hydroelectric and thermic energy plans and the strategy was straightforward:

Government planner: ... the oil part wasn't hard to set up. First, there was a long-range strategy for the production potential. An increase in production potential was their war horse. And that meant, one, reinvest in old wells, which was much more expensive than new ones. Two, explore; exploration had fallen off because of the coming reversion (all the assets, plant and equipment belonging to the concessionaires would revert to the nation once the concessions expired). Exploring meant, particularly, off-shore exploration, that was novel, new. That was expensive and a big risk. ... (and third), the Oil Belt.

The argument they used went like this: one, this costs money. Two, we need funds. Three, this is the most profitable investment the country can make (Interview 69.2/1-
PDVSA Director I also spoke of the strategy of increased production potential. But he set it in the context of the long lead time of petroleum investments, which may take up to six years to mature. He worried that some national policy-makers did not understand how slow the industry is to change:

**PDVSA Director I:** We don't want to take actions today that would change our long-range objective—unless there are very specific reasons. ... This industry has a long start-up (lead time), but policy can change very fast. You can say, "Change production from 1.7 to 2.5 million barrels a day", in just a minute, but you can't do it that fast. That is related to state policy. ... there are great economic and political pressures that don't understand that we can't change so fast and that the reason for our existing can't change so much; the pressures can become very strong. How do we maintain certain stability of action that doesn't put the long-range stability in jeopardy?

... How the pressure is, why do you have so much idle capacity? Our concern is, when we need the money, where is it? (Interview 38.1/4-6).

It was the PDVSA Director who spoke of a long-range investment strategy and who worried that policy-makers would make sudden changes in the investment program that could jeopardize that strategy. But when it came to the market
forecasts, it was the government planner who worried—that the industry would change the income forecasts suddenly or overestimate them, and so endanger the financial framework of the national plan.

Use OPEC market forecasts and keep a reserve of information for negotiating

Next, the government planner recalled the market forecasts in 1980 and 1981:

Government planner: The second part of the oil sector was ... the information base on the exports of oil ... a document they called Taif, an OPEC thing. It was done by a commission presided by Yamani, which said there would be a twelve percent interannual increase in oil demand. That was drawn up in 1979-1980. Afterwards, I never understood why, the entire universe changed (Interview 69.2/2).

The PDVSA Director spoke differently about the OPEC work on prices. He saw a serious effort to put order in the pricing systems of member nations, nations that have very different needs that make it hard to exercise control in the cartel:

PDVSA Director 1: ... the countries are all very different, economically, and some have only small reserves and others huge reserves and don't want to hurry, whereas the ones with small reserves do, then you have completely different (needs). The formula of Taif had as the basic idea that there would be great control, so there wouldn't be a rapid price change, as there had been in the early 1970s ... We got
no agreement, but the effort was very serious. ... The theory
(was), order in the prices and avoiding an explosion.

He then pointed out how fast and unexpectedly international
demand could change:

**PDVSA Director 1:** Then came the Iran-Iraq war and prices in
the spot market took off, so the countries didn't or couldn't
keep prices down. In 1979 prices went from $15 to $30 a
barrel.

He expected domestic demand to grow, as the Venezuelan
economy expanded and became more energy intensive, and he
wanted the industry to be ready to respond:

**PDVSA Director 1:** With these two elements in mind—greater
international demand and greater domestic demand—we are
eventually going to need more production. So we can't let
the same thing happen that happened before: the investments
for such an objective or strategy weren't made. When demand
went up we had to break the inertia, just to maintain the
production level. We know these two or three years aren't
going to be very good, world demand won't be very high, so
our potential will be greater than demand, unless something
very strange happens—something in Saudi Arabia, or in the
Middle East, or between Iran and Iraq (Interview 38.1/3-4).

But the government planner was skeptical about the estimates
of increased prices and volume:
Government planner: The point is, the flow of funds was always the starting point for the plan. Ninety percent of foreign exchange is from oil and seventy percent of government income comes from oil (Interview 69.2/4).

... We saw these huge projects and huge estimates of income. So what did we do in Cordiplán? We said, we'll develop at least two scenarios! Since PDVSA's horizon looked so optimistic, we developed a low alternative for the oil sector. And the Plan was made on the basis of the lower one.

Interviewer: Did PDVSA and the Ministry help to develop the lower one?

Government planner: We agreed on it with them and then they tried to complicate it. It's not so hard. You just make a lower estimate. The rest is formulas. How many barrels, what prices, and so on. How much goes to the Treasury.

So Cordiplán seemed to harbor a kind of distrust toward the oil industry representatives, a feeling that they were complicating the methodology unnecessarily and a sense that they had lost perspective about the future of Venezuelan oil:

Government planner: We thought, if they make so many mistakes about the market, you can't believe them. ...

Remember, the changes came in 1974, the big hike. And in 1979, Iran and so on, the rebound. So they all began to stay on that high.

The formal part of the Sixth National Plan was completed in
November 1981, including a high and a low case, the two views of the market. The market weakened. The planner recalled 1982 with annoyance:

**Government planner:** And then things began to deteriorate. The market got worse. In March of 1982, we had to take the "Let's defend oil" tack. The argument was, respect the OPEC decision to keep the price up. So volume was limited to 1.5 million barrels a day ... lower than the lowest of the plan (1.7 million bbd). So, what did that mean? One, reduce expenditures. Two, increase income. So, here comes the next big fight. They WOULD NOT reduce expenditures. And the attacks began. ... What bothered me, and still does, was the conceit. They said, in 1982, when the market got weak, "Oh, everyone knew that". Well, if they knew it, why didn't they tell us? (Interview 69.2/5-7).

Another PDVSA Director pointed out that the forecasts of oil demand changed drastically the world over between 1973 and 1983:

**PDVSA Director 2:** Actual demand in 1983 was fifty percent of the 1973 hope. Now we have a new forecast, the conventional wisdom, and it's probably wrong, too. But we don't know in which direction!

But besides, these volume forecasts were also associated with price forecasts. High volume, in 1973, was associated with high prices, because we thought there wouldn't be enough oil.
to go around. And many decisions were based on that. (The Orinoco Oil Belt development) was based on a much more optimistic picture than we have now. ... We put on the brakes in 1983 because it would then have been mindless to continue with that policy when things changed (Interview 14.5/5).

So it was, it seems, very hard to plan in these years and finally the industry itself began to postpone major development plans. Later in his interview the government planner recalled early 1984, when Copei had lost the national presidential elections and high government officials were getting ready to leave. The planner continued to puzzle about the issue of uncertainty. Was it uncertainty? Or was it a reserve for negotiating?

Government planner: The minor conflicts of 1984 were the predictions about the behavior of the market: 1.475, 1.500, 1.800—that was important. He couldn't get an answer. Interviewer: You think that was inability of the industry?

Uncertainty of the market?

Government planner: No. I think it is their strategy. They MUST have a reserve for negotiating.

And the fluctuating income predictions provoked a reaction in Cordiplán, besides the elaboration of a "low case":

Government planner: Sometimes we had to ask for things in writing. They would give one figure to the IMF, another to the Central Bank, another to Cordiplán, and another to the banks. Every time the figure was different. Finally we had
to ask for a figure each quarter and hold them to it.

But PDVSA also told Cordiplán some discretion was necessary to handle the market within the OPEC restrictions.

**Interviewer:** Do you think that's true?

**Government planner:** I think so... That is probably true (Interview 69.2/11).

**Limit detail on investment allocation.**

The Sixth Plan was an energy plan and thirty percent of public investment was assigned to oil. And yet, as the Plan was drawn up in 1980 and 1981, the government planner found it hard to get detailed information on petroleum sector investment programs.

**Government planner:** So, the other point on this phase has to do with the detailed information of the four big programs: exploration, production, domestic trade and gas. ...The level of detail, we never could get. ...Just big programs and a LIST of the big projects, the two refineries. Such huge things, almost finished, and that is what we got. ... We have to know more detail (Interview 69.2/3-4).

But PDVSA Director I saw this situation differently. The refining projects had been undertaken in 1977, under the Acción Democrática administration. The rationale was to add secondary refining to the existing capacity, and so be able
to turn fuel oil into gasoline, naphtha and other products that respond to changes in the domestic and international markets. In 1979 a Copei government took office and the refineries, well under way, were questioned:

**PDVSA Director 1:** The investments made in 1977 resulted in the refining capacity we have now, that only began to produce in 1982. Amuay is the most recent one, and the biggest. In 1979 there was enormous pressure to cancel those projects. There the reasoning was, why make a project with Exxon? Also, it was going to be experimental, and why should we experiment? If we hadn't gone ahead with this project, we would now be importing gasoline and still overproducing fuel oil. I think it was one of the best decisions that we have made (Interview 38.1/6).

PDVSA Director 3 offered a different perspective on the issue of state control and the size of the petroleum industry investments. He thought the Venezuelan state had not yet come to grips with the fact that it was now in charge of producing oil and it was unused to the scale of the investments:

**PDVSA Director 3:** Also, we were a landlord state (*un estado rentista*). Take the money from one hand and put it in the other. I have to know how much, but I don't have to produce it. Now, I have to produce it!! And the state hasn't realized it yet. That's why they don't realize the importance of the investments, and they call investments big
ones, when they really aren't. They haven't really been a producer state, so they don't know how to produce (Interview 56.1/4).

So the state, like the industry managers discussing the Veba case, was not yet aware of its new identity, while the industry was still unaware of how the state reacted to it:

*PDVSA Director 3:* So you see, we aren't conscious of this. We think we are efficient. We think the state is ready to direct us. We think they love us. It can't be!! Neither of the two is ready. ... Everything was great with the state so long as there was enough money. ...So, there aren't any communications channels. We are still living the impact of the oil world. But it's changing. When you change those circumstances, you have to begin to face difficulties that are going to be reflected in different groups with different interests. Politicians, oil...(Interview 56.1/4).
Self-financing and a strong stance against indebtedness. The difficulties of "Buying Venezuelan" and a spiral of tension.

The government planner thought that the industry's insistence on self-financing and no indebtedness worked against it in the longer range, as it contributed in some measure to the eventual transfer of the industry's dollar reserves from PDVSA to the Banco Central de Venezuela. In the early 1980s, the central government needed foreign exchange, but beyond the financial reality, the planner experienced a spiral of resentment and tension in the other sectors. This is how he perceived the sequence of events:

**Government planner:** Now, what is the tension that is created between that sector and the other sectors? First, the other sectors see it as a privileged sector. It doesn't want to go into debt. ... (A Cordiplán representative) said, "Well, how come INOS (the water works) can go into foreign debt to build sewers, which will never give profit, but you can't go into debt for any of your own projects?" He was right! But boy, did they jump! And they have systematically refused to try to get dollars from the Arabs.

They have it as a principle, or a goal. You have to be self-sufficient. It is a strategic question: I lose control over the industry. So those sectors that had to go into debt got angry. They wanted to play by different rules from everyone else. They say their security is, never to owe anyone...but that's debatable.
Interviewer: All of the other sectors were angry?


The other sectors—particularly metallurgy—became more irritated with the oil industry with regard to the "Buy Venezuelan" decree (Decree 1234), one of the explicit objectives set by the state for the nationalized petroleum industry. Both the petroleum sector and Cérdiplán justified investment in the oil sector partly on the ground that it would then buy inputs from other domestic industries. But,

Government planner: The oil industry wouldn't buy nationally! And the whole metallurgy sector had expanded and geared itself to (the) ... market, above all the oil industry, and the big national projects—oil! When they go to sell, what does the oil sector say? It's cheaper overseas. Quality and design are better (Interview 69.2/6).

And yet the former operations and maintenance manager quoted in Chapter VI had found it hard to "Buy Venezuelan" during the years of rapid expansion after nationalization. Permits were needed for "everything" (to buy a boiler, for instance). If domestic manufacturers didn't make exactly what was needed, they might offer to do so, and this meant a loss of precious time. The former manager had found that working for a nationalized industry put him into a most difficult world, and others agreed.
Retired Company Manager 20: You can forego cheapness and buy national products if that is going to help industrialize the country, but you cannot risk a well, a plant because nationally made products do not conform with quality desired. And metallurgy plays a big part in this, since the oil industry depends a lot on all kinds of steels. I know what it is to keep your fingers crossed using casing made in Sidor. We lost two or three strings in the latter part of the 1960s in CVP—faulty threads! (Interview 60.)

Whatever the real difficulties of using Venezuelan inputs, the government planner sensed a growing spiral of tension in the other sectors.

Government planner: So, it was a chain of dissatisfaction. Besides, the other sectors felt abandoned. Health, education, urban development, were very, very resentful. Oil, electricity—that's where the Plan was. Everyone else—agriculture, transportation and communication, the others—had to wait. That was the conflict (Interview 69.2/6).

Even though the other sectors objected, the energy plan went ahead. The government planner thought it was owing largely to the successful interventions of the Minister of Energy and Mines, who "sold the energy sector very well", by emphasizing that the industry would both generate income and integrate itself into the rest of the economy. But by 1981 the Venezuelan foreign debt was clearly a major national problem, and the government began to approach the petroleum industry.
Government planner: The other thing is the question of indebtedness. They don't want to go into debt. They argue that oil resources are a good (financial) lever for the nation. There was a refinancing law in 1982, to change the debt from short to middle and long ranges (Interview 69.2/8).

The President of PDVSA stood firm on the question of indebtedness; the most he would do was offer to put financial experts at the disposal of the Minister of Finance. But by March 1982 the shortage of cash in the national government was severe. Cordiplán and the Banco Central de Venezuela asked PDVSA to buy bonds and so provide the government with cash. PDVSA refused, on the grounds that this would be a transfer payment. The President of the Banco Central was angry and vociferous. (Before nationalization the Venezuelan government, under similar pressures, had on occasion asked for and received cash advances from the transnational oil companies (Interviews 14.5/8 and 6.3/9), which had purchased government bonds).

Government planner: At the same time, the whole external situation was complicated. Mexico was devaluing. The Malvinas (with the crisis in the Falkland Islands, Venezuela's Central Bank ordered PDVSA to withdraw deposits from England). And the whole international financial market got stiff. Jumbo loans (one and a half to two billion dollars) were stopped. The refinancing was cut off, and the dollar flight began, in September 1982 (Interview 69.2/8-9).
Cordiplán prepared a memo, for the President of Venezuela and the World Bank, proposing alternative combinations of exchange controls and devaluation. The President of the Central Bank insisted that the dollar reserves of a nation are not earmarked and should be in the Central Bank, where they would increase the nation’s capacity to negotiate a refinancing of the debt. The President of PDVSA said the reserves should stay in PDVSA. Each one presented his case to the President of Venezuela, and each seemed confident that he had convinced the President with his arguments.

The government planner believed that the Minister of Energy and Mines was not in favor of the transfer of the funds (although it was legal, he thought it was a serious blow for the industry) but, perhaps for reasons of party discipline or perhaps he found that the conflict had gone on too long, the Minister did not now insist. Once again, PDVSA was asked to buy bonds; once again it refused.

On September 28, 1982, authorization was granted to move the dollar reserves from PDVSA to the Banco Central de Venezuela (Interview 69.2/8-10), but exchange controls were not instituted.

**Government planner:** The measure is taken, and it didn’t work. Dollars kept going out and the conflicts were worse.

... *(The oil industry)* bolívares *(were)* half immobilized in a trust fund in the Banco Central.
Cordiplán and the Ministry of Hacienda then proposed that PDVSA buy bonds with those bolívares. This was finally done. The conflicts were highly publicized and became a political issue of the 1983 Presidential campaign (Interview 69.2/10).

During the five months after the funds were transferred to the Banco Central de Venezuela, four and a half billion dollars, an amount equivalent to the PDVSA reserves in September 1982, were purchased by private citizens and sent abroad (Interview 14.5/6). On February 18, 1983, the bolívar was devaluated. To many Venezuelans, it simply seemed that the government had put off an inevitable devaluation and let billions of dollars leave the country through private hands into the bargain; those who had been able to purchase dollars before February 1982—necessarily the more wealthy Venezuelans—doubled the value of their foreign holdings immediately, with devaluation.

None of the oil industry interviews described the sequence of events that led up to the transfer of funds from PDVSA to the Banco Central de Venezuela, but there were several angry references to the event itself as "the first breach of faith" on the part of the government, after nationalization, that is, the first incursion, or threat of an incursion, into financial autonomy. (The second one was the ten percent salary cut decreed by the President of Venezuela in 1984, as part of an austerity program, for government employees who earned more than Bs. 16,000 a month. Most of these are oil industry executives.)
PDVSA Director 3, speaking to a group of industry managers in March of 1984, addressed the issue of financial self-sufficiency. He started by saying that during the first years after nationalization, financial autonomy was practically taken for granted, until the dollar reserves were transferred to the Banco Central in 1982. Then he described the petroleum industry's financial strategy:

**PDVSA Director 3:** For years, any presentation on Finance was identical to the previous years, ever since PDVSA was founded. We had certain guidelines, philosophy, about the industry's financial administration. The industry had financial autonomy and the subsidiaries were autonomous in their operations, except for the financial part ...

In September of 1982, the government decides to nationalize PDVSA's liquid funds. Then, by instructions of our only shareholder, the national government decides also to freeze a part of them, already in bolivares, and convert them into a trust fund. That means that PDVSA no longer controlled its dollar reserves,...almost more than the international reserves in the whole country (Interview 56.3/1).

In March 1984 PDVSA's financial strategy was the same as before, but it was getting harder to implement it; it required a different kind of industry response. Dialogue with the national government was now essential:
**PDVSA Director 3:** To have enough funds to manage our own business, to allow a corporate planning process...requires a permanent dialogue with the national government. We are in danger of losing our financial self-sufficiency. We thought we wouldn't have the funds necessary to cover our outlays in 1983, but we did, largely because we cut expenses and put off projects, and because the financial arrangements were changed, unfreezing the funds (Interview 56.3/2).

During 1983 cost control and financial planning both gained importance within PDVSA. The industry eliminated or postponed several major projects, including development of the Orinoco Oil Belt and large off-shore exploration efforts. Referring to this, the government planner raised the issue of control, saying that the cuts were the result of the industry's own perception that it was better to move slowly and not because of pressure from Cordiplán, Hacienda or other national sectors (Interview 69).

Inside PDVSA, Director 3 said that the holding would get more and more strict with the operators, and was even going to redefine the control and audit functions of the major projects, like Zuata. But he found that "red tape" from the government and "destructive criticism" in the Congress and press got in the way of effective financial planning and new marketing strategies.
Director 3: Financial planning ... has become a very important management planning tool ... as a part of our financial planning we deal in international markets, but now we have to consult them with the national comptroller's office. It requires quite narrow margins and as a result, to avoid red tape, we limit our possibilities for earning more. ... transparency: we try to be open, but even so we get destructive criticism, as in the case of Veba Oel (Interview 56.3/2).