

STRATEGIC PLANNING IN A TURBULENT ENVIRONMENT: EVIDENCE FROM THE OIL MAJORS

ROBERT M. GRANT*

McDonough School of Business, Georgetown University, Washington, DC, U.S.A.

The long-running debate between the 'rational design' and 'emergent process' schools of strategy formation has involved caricatures of firms' strategic planning processes, but little empirical evidence of whether and how companies plan. Despite the presumption that environmental turbulence renders conventional strategic planning all but impossible, the evidence from the corporate sector suggests that reports of the demise of strategic planning are greatly exaggerated. The goal of this paper is to fill this empirical gap by describing the characteristics of the strategic planning systems of multinational, multibusiness companies faced with volatile, unpredictable business environments. In-depth case studies of the planning systems of eight of the world's largest oil companies identified fundamental changes in the nature and role of strategic planning since the end of the 1970s. The findings point to a possible reconciliation of 'design' and 'process' approaches to strategy formulation. The study pointed to a process of planned emergence in which strategic planning systems provided a mechanism for coordinating decentralized strategy formulation within a structure of demanding performance targets and clear corporate guidelines. The study shows that these planning systems fostered adaptation and responsiveness, but showed limited innovation and analytical sophistication. Copyright © 2003 John Wiley & Sons, Ltd.

INTRODUCTION

Since the early 1980s, strategic planning—systematic, formalized approaches to strategy formulation—has come under heavy attack from management scholars. Criticisms have addressed the theoretical foundations of strategic planning, particularly the impossibility of forecasting (Mintzberg, 1994b: 110), while empirical evidence—both longitudinal case studies (e.g., Mintzberg and Waters, 1982; Pascale, 1984) and investigations of strategic decision making (e.g., Bower, 1970; Burgelman, 1983)—points to strategies emerging from the

weakly coordinated decisions of multiple organizational members.

Increased volatility of the business environment makes systematic strategic planning more difficult. Rapid change requires strategies that are flexible and creative—characteristics which, according to Hamel, are seldom associated with formalized planning: 'In the vast majority of companies, strategic planning is a calendar-driven ritual ... [which assumes] that the future will be more or less like the present' (Hamel, 1996: 70). Eisenhardt's research into 'high velocity environments' points to the advantages of 'semicoherent' strategic decision-making processes that are unpredictable, uncontrolled, inefficient, proactive, continuous, and diverse (Eisenhardt, 1989; Brown and Eisenhardt, 1997). If complexity and uncertainty render decision making impossible,

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*Correspondence to: Robert M. Grant, McDonough School of Business, Georgetown University, Old North Building, Washington, DC 20057, U.S.A.

then self-organization may be more conducive to high performance than hierarchical direction (Pascalle, 1999).

The goal of this paper is to explore whether and how companies' strategic planning practices have adapted to a world of rapid, unpredictable change. The study identifies the key features of strategic planning systems in an industry that transitioned from stability to turbulence—the world petroleum industry. It explores the changing characteristics of the oil majors' strategic planning processes and the changing role of strategic planning within the companies. The study fills a gap in the literature: despite the intense debate over the merits of strategic planning and continued interest in strategic decision processes within firms, we know little about the formal systems through which companies formulate their strategic plans. The paper contributes to strategic management knowledge in three areas. First, it provides descriptive data on the strategic planning practices of some of the world's largest and most complex companies during the late 1990s and how these practices changed in response to increasing environment turbulence. Second, it informs the long-running debate between the 'design' and 'process' schools of strategic management and suggests a possible reconciliation of the two. Third, it sheds light upon the coordination and control in large, complex enterprises operating in fast-changing business environments.

PLANNING AND ENVIRONMENTAL TURBULENCE: THEORY AND EVIDENCE

The literature

Interest in strategy as an area of management study followed the diffusion of strategic planning ('long-range planning') among large companies during the 1950s and 1960s. Articles on long-range planning began appearing in the *Harvard Business Review* during 1956–61 (Ewing, 1956; Wrap, 1957; Payne, 1957; Platt and Maines, 1959; Quinn, 1961) and by 1965 the first systematic, analytically based frameworks for strategy formulation appeared (Ansoff, 1965; Learned *et al.*, 1965).¹ Empirical studies of corporate planning

¹ Professional organizations for corporate planners stimulated the development of strategy ideas and techniques. The North

practices included, in the United States, Cleland (1962), Henry (1967), the U.S. House of Representatives Committee on Science and Technology (1976), Ang and Chua (1979), and Capon, Farley, and Hulbert (1987); and in the United Kingdom, Denning and Lehr (1971, 1972) and Grinyer and Norburn (1975).

As strategic management developed as an area of academic study, interest in companies' strategic planning practices waned. By the 1980s empirical research in strategic planning systems focused upon just two areas: the impact of strategic planning on firm performance and the role of strategic planning in strategic decision making. The first area spawned many studies but no robust findings. Ramanujam, Ramanujam, and Camillus (1986: 347) observed: 'The results of this body of research are fragmented and contradictory,' while Boyd's (1991) survey concluded: 'The overall effect of planning on performance is very weak.'²

The second area of research explored the organizational processes of strategy formulation. Longitudinal studies of strategy formation (Mintzberg and Waters, 1982; Mintzberg and McHugh, 1985; Mintzberg, Brunet, and Waters, 1986) and Pascalle (1984) identified a process of emergence that bore little resemblance to formal, rational, strategic planning processes. Corporate-level strategic decisions emerged from complex interactions between individuals with different interests and different perceptions (Bower, 1970; Burgelman, 1983). The resulting debate pitted the advocates of systematic, rational analysis (Ansoff, 1991; Goold, 1992) against those who favored the empirical validity and normative merits of emergent processes (Mintzberg, 1991, 1994a).

The contribution of both areas of research has been limited by lack of empirical investigation of the phenomenon itself. Planning–performance studies relied upon largely superficial characterizations of strategic planning practices based mainly

American Society of Corporate Planners was founded in 1961. It merged with the Planning Executives Institute to create the Planning Forum (later renamed the Strategic Leadership Forum). In the United Kingdom, the Long Range Planning Society (later renamed the Strategic Planning Society) was founded in 1966. Both societies launched journals: *Planning Review* (since renamed *Strategy & Leadership*) and *Long Range Planning*.

² Miller and Cardinal (1994) did find that 'strategic planning positively influences firm performance;' however, their 'meta-analysis' of 35 previous studies meant accepting the methodological weaknesses of prior studies.

upon questionnaire data.³ The ‘design vs. process’ debate has centered on a few well-known case examples—notably Honda’s entry into the U.S. motorcycle market (Pascale, 1984; Mintzberg *et al.*, 1996); yet the validity of the Honda case remains dubious—its author described it as a ‘small foundation of anecdote’ arising from a ‘quest for amusement rather than scholarly ambition’ (Mintzberg *et al.*, 1996: 112).

The impact of environmental turbulence

Changes in the business environment reinforced the case against formal strategic planning. In the last quarter of the twentieth century, macroeconomic disequilibrium, exchange rate volatility, the microelectronics revolution, and the emergence of newly industrializing countries marked the end of postwar economic stability. Since economic and market forecasts provided the foundation for strategic planning, inability to predict demand, prices, exchange rates and interest rates represented a fundamental challenge to companies’ ability to plan.

The challenge of making strategy when the future is unknowable encouraged reconsideration of both the processes of strategy formulation and the nature of organizational strategy. Attempts to reconcile systematic strategic planning with turbulent, unpredictable business environments included the following.

Scenario planning

Multiple scenario planning seeks not to predict the future but to envisage alternative views of the future in the form of distinct configurations of key environmental variables (Schoemaker, 1993, 1995). Abandoning single-point forecasts in favor of alternative futures implies forsaking single-point plans in favor of strategy alternatives, emphasizing strategic flexibility that creates option values. However, as recognized by Shell—the foremost exponent of scenario planning within the corporate sector—the primary contribution of scenario planning is not so much the creation of strategic plans as establishing a process for strategic thinking

and organizational learning. Shell’s former head of planning observed: ‘the real purpose of effective planning is not to make to plans but to change the mental models that decision makers carry in their heads’ (De Geus, 1988: 73). With scenario analysis, strategic planning is a process where decision-makers share and synthesize their different knowledge sets and surface their implicit assumptions and the mental models.

Strategic intent and the role of vision

If uncertainty precludes planning in any detailed sense, then strategy is primarily concerned with establishing broad parameters for the development of the enterprise with regard to ‘domain selection’ and ‘domain navigation’ (Bourgeois, 1980). Uncertainty requires that strategy is concerned less with specific actions and the more with establishing clarity of direction within which short-term flexibility can be reconciled with overall coordination of strategic decisions. This requires that long-term strategic goals are established, articulated through statements of ‘vision’ and ‘mission’ (Van Der Heijden, 1993), and committed to through ‘strategic intent’ (Hamel and Prahalad, 1989).

Strategic innovation

If established companies are to prosper and survive, new external environments require new strategies (Baden-Fuller and Stopford, 1994; Markides, 1998). Strategic planning may be a source of institutional inertia rather than innovation: ‘Search all those strategic planning diagrams, all those interconnected boxes that supposedly give you strategies, and nowhere will you find a single one that explains the creative act of synthesizing experiences into a novel strategy’ (Mintzberg, 1994b: 109); ‘The essential problem in organizations today is a failure to distinguish planning from strategizing’ (Hamel, 1996: 71). Yet, systematic approaches to strategy can encourage managers to explore alternatives beyond the scope of their prior experiences: ‘Good scenarios challenge tunnel vision by instilling a deeper appreciation for the myriad factors that shape the future’ (Schoemaker, 1995: 31). Strategic inertia may be more to do with the planners than of planning per se. If top management teams are characterized by lack of genetic diversity and heavy investments

³ In some cases questionnaire data were from managers not directly involved in strategic planning. Thus, Brews and Hunt analyzed relationships between strategic planning and ‘overall firm performance’ using written questionnaires given to ‘senior and mid-level executives attending 39 educational programs offered at three business schools’ (Brews and Hunt, 1999: 896).

of emotional equity in the past, breaking the conservative bias of strategic planning may require involving younger organizational members who are further from the corporate HQ (Hamel, 2000: 148). Strategic innovation can also be enhanced through sensitivity to emerging discontinuities in a company's evolution—these strategy/environment misalignments ('strategic inflection points') offer the potential for radical strategic change (Burgelman and Grove, 1996).

Complexity and self-organization

Mintzberg and Pascale's arguments in favor of strategy making as an organic, unsystematic, informal process have received conceptual reinforcement from complexity theory. Models of complex adaptive systems developed mainly for analyzing biological evolution have also been applied to the evolution of organizations (Anderson, 1999). These models offer interesting implications for organizational strategy. For example, faced with a constantly changing fitness landscape, maximizing survival (reaching high fitness peaks) implies constant exploration, parallel exploration efforts by different organizational members, and the combination of incremental steps ('adaptive walks') with occasional major leaps (Beinhocker, 1999). What kinds of strategy can achieve this adaptation? Brown and Eisenhardt's (1997) study of six computer firms points to the role of 'limited probes into the future' that involve experimentation, strategic alliances, and 'time-based transition processes' that link the present with the future. A key feature of strategic processes is the presence of 'semistuctures' that create plans, standards, and responsibilities for certain activities, while allowing freedom elsewhere (Brown and Eisenhardt, 1997: 28–29). One application of the semistucture concept to strategy formulation concerns the use of simple rules that permit adaptation while establishing bounds that can prevent companies from falling off the edge of chaos (Eisenhardt and Sull, 2001).

Empirical evidence

Empirical evidence points to the coexistence of formal and informal strategic planning processes. Most large companies maintain some form of formal strategic planning. Bain & Company's annual survey of business techniques consistently

identifies strategic planning as the most popular and widely utilized of any management tool (Rigby, 1999), while studies by the American Productivity and Quality Center (1996a, 1996b) report features of strategic planning systems among leading-edge U.S. corporations. Yet most strategic decisions appear to be made outside of formal strategic planning systems. Analyzing 1087 decisions by 127 *Fortune 500* companies, Sinha concluded: 'the overall contributions of formal strategic planning systems . . . are modest' (Sinha, 1990: 489). In unstructured and fast-moving contexts, strategies tend to emerge: Mintzberg and McHugh (1985) identified a 'grass roots' process of strategy formulation, while Burgelman's study of Intel's exit from DRAM chips (Burgelman, 1994, 1996) pointed to the smooth and timely adaptation to external change that resulted from unplanned decision processes forming an 'internal selection mechanism.'

Evidence of the impact of environmental turbulence upon strategic planning is limited. Cross-sectional studies have produced inconsistent findings.⁴ Longitudinal evidence is fragmented, but more consistent: in response to increasing environmental turbulence, strategic planning systems have changed substantially from the highly formalized processes of the 1960s and 1970s. *Business Week's* (1996: 46) proclamation that 'strategic planning is back with a vengeance' acknowledged that 'it's also back with a difference.' Details of how strategic planning systems have been adapted to increasingly unstable, unpredictable business environments are sparse. Descriptions of strategic planning practices are available for some companies, e.g., General Electric (Aguilar, Hamer-mesh and Brainard, 1993; Slater, 1999), Royal Dutch/Shell (De Geus, 1997), MCI (Simons and Weston, 1990), and PowerGen (Jennings, 2000), while Wilson (1994) provides more general evidence on changes in strategic planning practices. Overall, the evidence points less to a 'decline of strategic planning' (Mintzberg, 1994a), than to fundamental changes in the ways in which companies undertake their strategic planning.

⁴ Lindsay and Rue (1980) and Kukalis (1991) found external uncertainty to be positively associated with completeness of planning processes. Similarly, Grinyer *et al.* (1986) found that the use of specialist planners was associated with the vulnerability of companies' core technology to external threats. However, Javidan (1984) found that increased external uncertainty had no significant impact on the extent of planning.

Investigating these changes in companies' strategic planning practices is likely to require richer data than that used in most prior studies. Boyd and Reuning-Elliott (1998) observed that researchers have represented strategic planning—a complex, multidimensional construct—by a few indicators. However, despite their finding that 'strategic planning is a construct that can be reliably measured through seven indicators: mission statement, trend analysis, competitor analysis, long-term goals, annual goals, short-term action plans, and on-going evaluation' (Boyd and Reuning-Elliott, 1998: 189), even multiple indicators may fail to recognize the characteristics of overall strategic planning configurations and their links with other processes of decision making and control.

RESEARCH QUESTIONS AND RESEARCH METHOD

The approach

To investigate how companies' strategic planning systems had adapted to increased environmental turbulence, I adopted an exploratory methodology in preference to formal hypothesis testing. This was for two reasons. First, a major goal of the research was to gather descriptive data on contemporary strategic planning practices in large corporations and their changes over time. Second, there is little theory relating to the design and functions of strategic planning systems within organizations. Analysis of the impact of organizational and environmental factors on the characteristics of strategic planning processes (e.g., Lindsay and Rue, 1980; Javidan, 1984; Grinyer, Al-Bazzaz, and Yasai-Ardekani, 1986) has been based upon ad hoc hypothesizing rather than any integrated theory of the design and role of strategic planning processes.

This is not to imply that my research was a-theoretic in motivation or conduct. My goal was not simply to generate descriptive data, but to shed light upon wider issues concerning the role of management in strategic decision making and corporate change. Despite the vast literature on organizational adaptation to environmental change,⁵ little

explicit attention has been given to the role of formal strategic planning. To understand the role of strategic planning systems in companies' processes of decision making and change, the first task is to recognize the characteristics of these systems.

The research questions

The primary questions that the research addressed were:

1. What were the principal features of the strategic planning systems of large, multibusiness, multinational corporations?
2. What has been the impact of increased volatility and unpredictability of the business environment upon companies' strategic planning processes?
3. To what extent do companies' systems of strategic planning correspond to the rational, analytic, formalized, staff-driven processes associated with the 'design school' of strategic management, and to what extent are they consistent with the emergent strategies associated with the 'process school'?

In researching these questions, I was guided by the existing literature. The research cited in the previous section suggested environmental volatility and uncertainty might have the following effects on firms' strategic planning systems:

1. *Redistribution of strategic planning decision-making authority.* Earlier studies pointed to environmental turbulence as encouraging decentralization of strategic decision-making authority from corporate to business level (Lindsay and Rue, 1980; Grinyer *et al.*, 1986) and diminishing role of staff planners relative to that of line managers (Wilson, 1994).
2. *Shorter planning horizons.* If strategic planning requires prediction, greater uncertainty about the future should shorten planning horizons. Empirical evidence is mixed: Lindsay and Rue (1980) and Javidan (1984) found no relationship between planning time spans and external stability; Kukalis (1991) found planning horizons were shorter in unpredictable markets with high levels of innovation and competition.

⁵ Theoretical streams include, *inter alia*, organizational ecology (Hannan and Freeman, 1989), punctuated equilibrium (Romanelli and Tushman, 1994), learning and evolution (e.g., March, 1981; Nelson and Winter, 1982).

3. *Less formality of planning processes.* Organizational theory predicts that less stable external environments should be associated with less bureaucratization and more flexible decision making (Burns and Stalker, 1961; Courtright, Fairhurst, and Rogers, 1989). In relation to strategic planning, formality relates to fixed timescales for the planning cycle, reliance upon extensive documentation and written reports, use of standardized methodologies, and deployment of planning specialists. The empirical evidence is mixed. Wilson (1994) found external instability led to greater informality (e.g., less documentation and more flexible schedules) and Kukalis (1991) observed that increased rates of external change (interpreted as 'environmental complexity') increased the flexibility of planning practices. However, this did not necessarily mean less detailed plans: Lindsay and Rue (1980) pointed to firms' attempts to counteract uncertainty with greater planning efforts.

Method

Most studies of strategic planning processes have used questionnaire data with samples of between 48 (Grinyer *et al.*, 1986) and 199 firms (Lindsay and Rue, 1980). The result is quantitative data that can be subjected to statistical analysis, but which fail to capture the richness and complexity of firms' planning practices. As Ramanujam *et al.* (1986: 348) observed: 'Planning systems are multifaceted management systems that are context embedded. Hence, they cannot be adequately described in terms of one or two characteristics such as "formality".' Not only are questionnaire-based descriptions of strategic planning systems overly 'thin,' they lack consistency (Boyd and Reuning-Elliott, 1998: 182). To gain insight into how the different characteristics of a company's planning system interacted and interrelated both with one another or with the other systems of decision making, coordination, and control, I adopted a comparative case study approach. Because my research did not involve hypothesis testing and because the goal was to identify *commonalities* among companies' strategic planning practices rather than analyze cross-sectional *differences*, the disadvantages of case study research in limiting the research sample were less critical.

The research site

I selected the international oil majors for my research site for four reasons. First, the oil majors were among the world's largest industrial corporations. By 1996, even after a decade of downsizing and depressed oil prices, 10 of the world's 40 largest industrial corporations (ranked by revenues) were oil companies. Second, the companies were unusual in their complexity. They were vertically integrated, diversified, and multinational, and the close linkages between their activities gave rise to complex coordination problems. Third, the companies had traditionally been at the leading edge of strategic planning practices: they had pioneered the creation of corporate planning departments and application of economic forecasting, risk analysis, portfolio planning, and scenario analysis. Finally, they had experienced a radical transformation of their industry environment from one of stability and continuity to one of uncertainty and turbulence. After several decades of stability and growth when they had been masters of their destiny, their competitive environment was thrown into turmoil by the oil shocks of 1973–74 and 1979–80, the nationalization of the reserves, and the growth of competition (Grant and Cibin, 1996).

The 10 leading oil and gas oil majors (as listed in the 1997 *Fortune Global 500*) which formed my study sample included the six surviving 'Seven Sisters'—Exxon, Shell, BP, Mobil, Texaco, and Chevron—together with a four comparative newcomers to the ranks of the international majors—Elf Aquitaine, ENI, Total, and Amoco. They are shown in Table 1.

Data collection

The research proceeded as follows:

1. I wrote to the head of corporate planning of each company, typically the vice president, director, or general manager of strategic planning, outlining the purpose of the research and requesting cooperation. Of the 10, eight agreed to participate (these are indicated in Table 1).
2. Interviews were arranged with the head of the corporate planning group and with one or two other strategic planning professionals, where possible, with the manager with responsibility for the administration and support of the strategic planning process. At five of the companies

Table 1. The world's 10 biggest oil and gas corporations, 1996

Company	Country	Sales revenue 1996 (\$m)	Employees 1996
Royal Dutch/Shell ^a	Neth./U.K.	128,174	101,000
Exxon ^a	U.S.	119,434	79,000
Mobil ^a	U.S.	72,267	43,000
British Petroleum ^a	U.K.	69,852	53,150
Elf Aquitaine ^a	France	46,818	85,400
Texaco ^a	U.S.	44,561	28,957
ENI ^a	Italy	38,844	83,424
Chevron	U.S.	38,691	40,820
Total	France	34,513	57,555
Amoco ^a	U.S.	32,726	41,723

^a Included in study sample.
Source: *Fortune Global 500*, 1997.

(Shell, BP, ENI, Elf, and Amoco) staff members from finance and/or human resources were also interviewed in order to explore the relationships between strategic planning and the other mechanisms for coordination and control. Table 2 lists the interviewees at each company. The interviews were conducted between March 1996 and April 1997. The interviews were semi-structured. Notes were taken during the interviews and full reports of the interviews were written up immediately after each interview. The interviews covered the following areas:

- the planning process, including the annual planning cycle, individuals involved, methodologies employed, and the content and role of meetings and documents;
- the structure and role of the corporate strategic planning department, and of strategic planning specialists at the business level;
- the role of the strategic planning process within the overall management of the corporation;
- the linkages between strategic planning and the other systems of decision making, coordination, and control including: capital budgeting, financial control, and human resource management.

3. Interview data were supplemented with information from case studies, research papers, and company reports and documents. These were particularly useful sources of historical data

Table 2. The interviewees

Company	Position (at the time of interview)
Royal Dutch/Shell	Head of Group Planning Senior Strategist Manager, Group Planning Group Treasurer Head, Management Development
Exxon	General Manager, Corporate Planning Department Former General Manager, Corporate Planning Department Manager, Corporate Strategy Division, Corporate Planning Department Assistant Treasurer
Mobil	Vice President, Strategic Planning Global Industry Analyst, Strategic Planning Vice President, Planning, Downstream Division
British Petroleum	Strategy Coordinator Manager, Upstream Strategy Former head of Chairman's office
Elf Aquitaine	Director, Direction Prospective Economie Strategie Manager, Direction Prospective Economie Strategie
Texaco	Vice President, Corporate Strategy and Planning Director of Planning Manager, Corporate Strategy and Planning Director of Organization and Executive Development
ENI	Director, Planning and Control Department Deputy Director, Planning and Control Department Manager, Planning and Control Department Deputy Director, Personnel and Organization
Amoco	Director, Market Analysis, Strategic Planning Practice Leader, Competency Modeling Organization Effectiveness Consultant

- on the companies' strategic planning processes. For this purpose, some former strategic planning managers were contacted.
4. A case study describing each company's strategic planning process was prepared. Where gaps or inconsistencies were apparent, the

interviewees were telephoned to request clarification or additional information. Once written up, the case study was returned to the primary interviewee (typically the head of strategic planning) for comment and amendment.

The amount and quality of the data varied between the companies depending on their degree of cooperation and their concerns over disclosing proprietary information. For example, while Shell was very open about its strategic planning system and

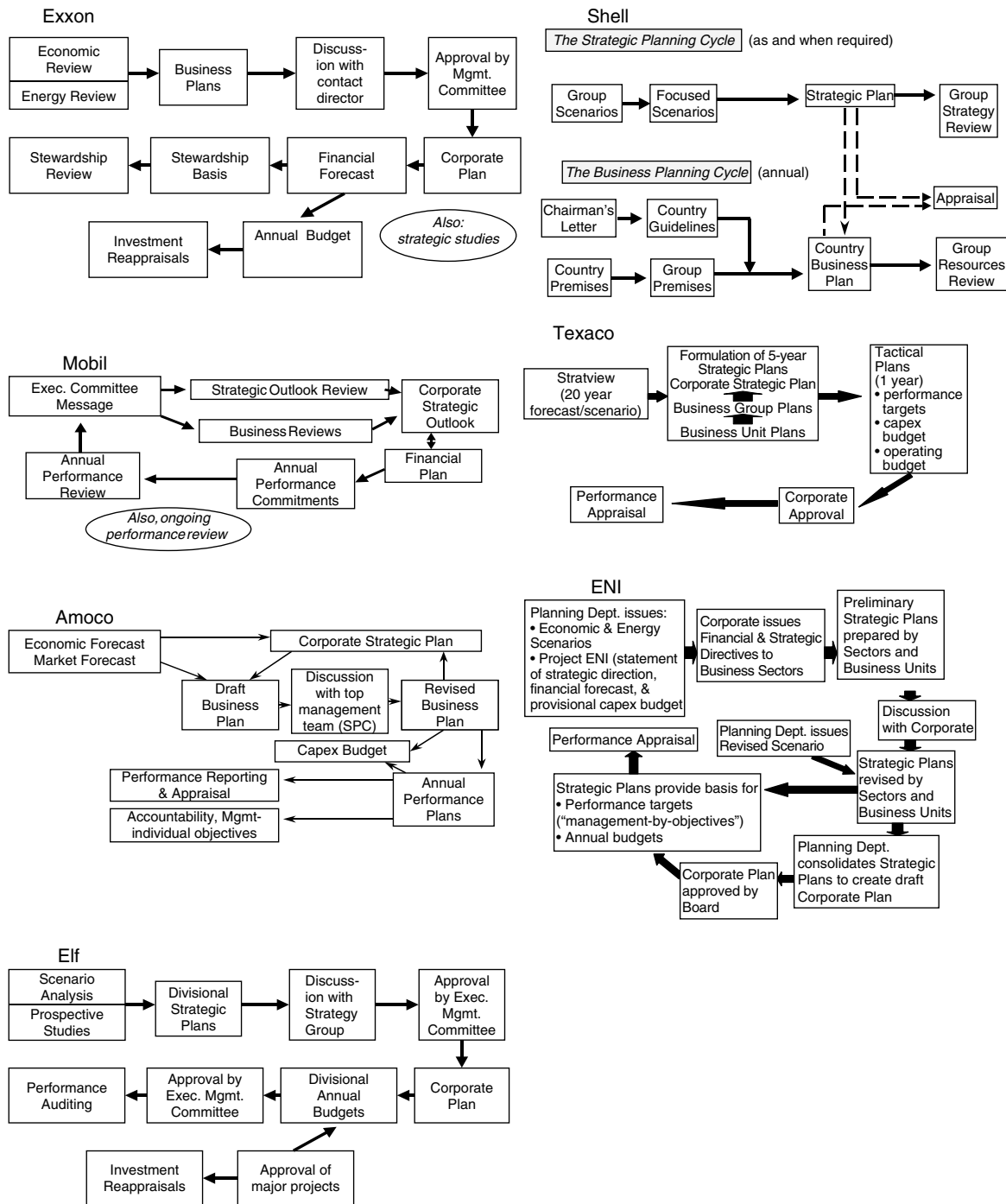


Figure 1. The companies' strategic planning cycles

methods employed, Exxon was highly secretive. At BP and Shell, data collection was hampered by large-scale organizational changes which meant that these companies' strategic planning systems were in transition phase. Nevertheless, a detailed case study was prepared for each company describing the main features of strategic planning, the changes in these systems over time, and their role within broader management processes.

THE MAIN FEATURES OF STRATEGIC PLANNING AMONG THE OIL MAJORS

The strategic planning cycle

All the companies in the sample engaged in a formal, strategic planning process built around an annual planning cycle. Each company's planning cycle (with the exception of BP, which declined to make available its planning framework) is shown in Figure 1. Despite differences between companies in the depiction of their planning processes and the terminology they used to describe it, the similarities were sufficient to identify a 'generic' strategic planning cycle (see Figure 2).

The principal stages of the planning process common to all the companies were the following:

1. *Planning guidelines.* The starting point for the annual planning cycle was an announcement by the corporate headquarters of guidelines and assumptions to be used by the businesses in preparing their business-level strategic plans. These guidelines and assumptions comprised two major elements. First, a view of the external environment: This typically included guidance

as to some features of energy markets over the planning period—demand, supply, prices, and margins—which were not so much forecasts as a set of assumptions relating to prices and supply and demand conditions that provided a common basis for strategic planning across the company. Some companies put greater emphasis on scenarios—alternative views of possible developments in the energy sector. Second, corporate management provided overall direction to the planning process through a statement of priorities, guidelines, and expectations. A key aspect of this direction was setting company-wide performance targets (e.g., 'raise return on capital employed to 12%,', 'reduce costs per barrel by 10%,', 'a 110% reserve replacement rate,' 'reduce the ratio of debt to equity ratio to 25% by 2000'). Guidance often related to resource allocation, e.g., 'to shift investment from downstream to upstream,' 'to refocus on core businesses,' 'to take advantage of opportunities in China and East Asia,' 'to increase the proportion of gas in our hydrocarbon reserves.'

2. *Draft business plans.* Strategic plans were formulated bottom-up: the individual businesses took the initiative in formulating their strategic plans.⁶
3. *Discussion with corporate.* The draft business plans were submitted to the corporate headquarters. After some initial analysis by

⁶ For most companies, strategic planning was a three-stage process: business unit strategy, divisional strategy, and corporate strategy. For simplicity, I treat strategic planning as a two-stage process distinguishing between corporate strategy and business-level strategy that comprised both divisional and business unit strategies.

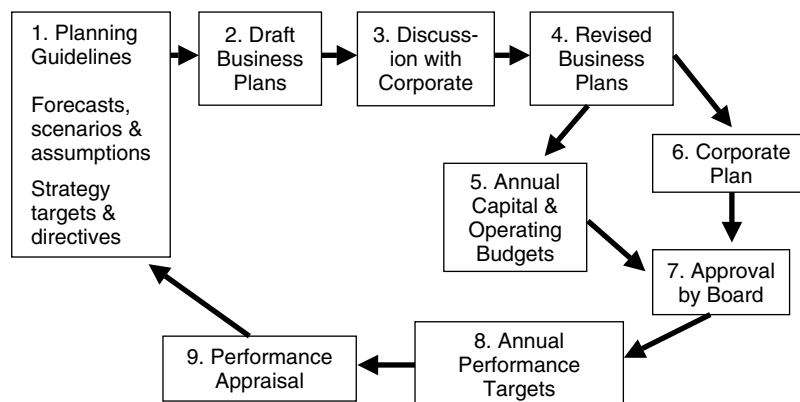


Figure 2. The generic strategic planning cycle among the oil majors

the corporate planning staff, a meeting was held between senior corporate and senior divisional management. These face-to-face meetings lasted between 2 hours and a full day and discussed the rationale for the strategies being pursued, the performance implications of these strategies, and the compatibility of the business strategy with corporate goals.

4. *Revised business plans.* The draft business plans were then revised in the light of the discussions.
5. *Annual capital and operating budgets.* The strategic planning process was closely linked with the annual budgeting process. Although budgeting is coordinated and administered by the controller's department, the first year of the strategic plan typically provided the basis for next year's capital expenditure budget and operating budget.
6. *Corporate plan.* The corporate plan resulted from the aggregation of the business plans, which was undertaken by the corporate planning department.
7. *Board approval.* The final formality of the strategic planning formulation was approval of the corporate and business plans by the board of directors.
8. *Performance targets.* From the corporate and business plans a limited number of key financial and strategic targets were extracted to provide the basis for performance monitoring and appraisal. Targets related to the life of the plan with a more detailed emphasis on performance targets for the coming year.
9. *Performance appraisal.* The performance plans provided the basis for corporate-level appraisal

of business-level performance. In addition to ongoing performance monitoring, a key event was the annual meeting between the top management team and divisional senior managers to discuss each business's performance during the prior year.

For companies whose financial years corresponded to calendar years, the planning cycle began in the spring, with corporate and business plans finally approved in November or December, and performance reviews occurring around the beginning of the following year (see Figure 3).

The role and organization of corporate planning staffs

All of the companies possessed a corporate staff unit responsible for strategic planning headed by a vice president or a director of corporate planning or strategy (or, in the case of Exxon, a general manager). The functions of these corporate planning departments included:

- Providing technical and administrative support to strategic management activities. In all the companies, responsibility for corporate strategy lay with the top management team. The corporate planning staff's responsibility was to support the corporate executive team in its strategic management role (for example, in providing information and analysis, and exploring the impacts of alternative assumptions and courses of action) and to administer the planning process.

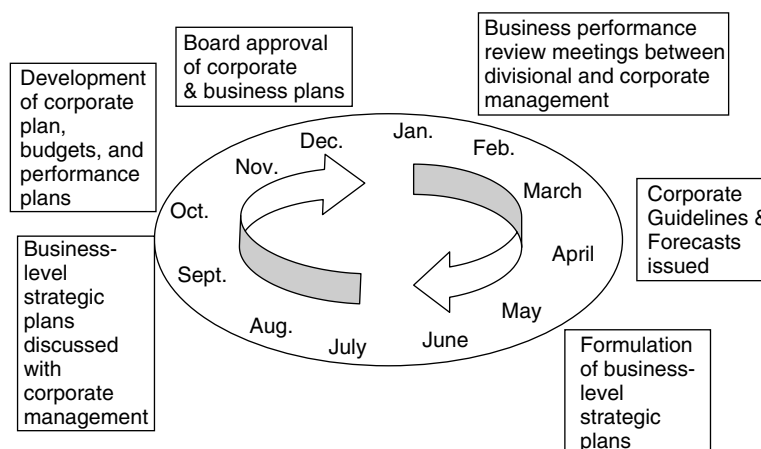


Figure 3. Timing of the planning cycle

- Preparing economic, political, and market forecasts, risk analysis, competitor analysis, and other investigations of the business environment to assist strategic planning through the company.
- Fostering communication between corporate and business management. In some of the companies—notably Shell, Mobil, ENI, and Amoco—corporate planners liaised with divisional managers and divisional planners, and fostered dialog through a common format and terminology for strategic plans. In other companies—notably Exxon and BP—high levels of involvement by corporate planning staff was viewed as a barrier to strategy dialog between business-level chief executives and corporate top management.
- Internal consulting. To the extent that corporate planning departments became repositories of expertise about strategy analysis and strategic planning techniques, they tended to develop internal consulting roles in relation to the businesses and other functions.⁷

Who are the corporate planners?

Unlike certain other corporate functions (finance, law, and information systems), none of the companies recognized strategic planning as a career track. Corporate planners were drawn from line management positions within the businesses and, in some cases, from other staff functions (e.g., finance and IT). Planners typically spent between 3 and 5 years in corporate planning posts before returning to a line management position. The only examples of career track planners were, first, the few professional economists that resided in corporate planning departments and, second, some corporate planning managers in two companies with significant public ownership, ENI and Elf, who spent 15 years or more within the planning function. Several companies explained that their staffing of corporate planning departments reflected their intention to combine the analytic skills of younger staff with the deep experiential knowledge of longer-serving managers. At all the companies corporate planning assignments were viewed as important career development stages offering corporate-level exposure and a

‘big-picture’ perspective for ‘fast track’ executives.

Differences between the companies

Within this common framework, there were some notable differences between the companies. In particular:

1. *Formality and regularity.* Several companies, notably Elf Aquitaine and ENI, had planning systems that were more formal (e.g., greater reliance upon written reports and formal presentations), more regular (in terms of a fixed annual cycle), and less flexible than those of the other companies. These differences were related primarily to differences in overall management styles—Elf and ENI had retained more traditional hierarchical structures and formal administrative styles, in contrast to the other companies (most notably BP and Texaco) that had encouraged a more entrepreneurial management style. The degree of formalization of the planning process was also linked to the emphasis given to performance targets in the strategic planning process. The companies that placed the biggest emphasis on establishing rigorous financial targets for their businesses—BP, Texaco, and Exxon, in particular—also had planning processes that were comparatively informal. Conversely, companies that emphasized strategic control—ENI, Elf, and Shell—placed greater emphasis on written strategic plans and formal approval processes. In terms of regularity, all the companies pursued an annual planning cycle; however, some companies—notably Amoco, Shell, and Mobil—had moved away from standardized, calendar-driven annual cycles; they updated environmental analysis and performance targets annually (or more frequently), but called for revision of business strategies only when circumstances required.
2. *The time horizon of strategic plans.* Strategic plans were typically for 4–5 years, although in upstream planning horizons tended to be longer—up to 15 years in the case of Exxon. Several companies—notably Shell, Texaco and Elf—operated a dual system of planning: long-term planning that extended for 10 years or more and was typically qualitative and scenario based, and medium-term planning that was

⁷ The activities of corporate planning departments are reflected in their organizational structures. Organization charts for the planning departments are available from the author.

more detailed and quantitative and involved a greater level of commitment. Shell had the longest horizon for its strategic plans—up to 20 years—however, these long-term strategic plans took the forms of long-term views of the business and the environment where the primary object was to encourage long term-thinking about the business in the light of underlying technological, political, and business trends. Texaco maintained 15- to 20-year strategic views, though, like Shell, Texaco's long-term plans involved no formal resource commitment.

3. *Differences in the role and activities of planning departments.* The emphasis placed upon different strategic planning activities varied across the companies. Among companies that had undergone major internal reorganizations, such as Amoco and ENI, the strategic planning function played a prominent role as a coordinating and integrating mechanism. Thus, following Amoco's 1995 reorganization around 17 business separate groups, the strategic planning department was actively involved in developing cooperation across the different business, e.g., in creating cross-business 'umbrella strategies' for individual countries. A more interventionist role of corporate planning departments was also apparent within those companies whose corporate planners fulfilled an internal consulting role. Although Shell's internal consulting unit was disbanded in 1992, Shell's planning group maintained an active role in promoting and diffusing strategic management ideas and techniques. Similarly, ENI's planning department maintained a strong advisory role and was active in disseminating corporate-level goals and priorities. Companies with the broadest roles for their corporate planners also had the biggest corporate planning departments.

Table 3 summarizes key features of the individual companies' strategic planning systems.

CHANGES IN STRATEGIC PLANNING SYSTEMS

All eight companies acknowledged major changes in their strategic planning practices over the previous decade and a half. While the basic framework of strategic planning—in terms of the strategic

planning cycle and its key phases—remained little changed, the content of strategic plans, the strategic planning process, and the role of planning within the companies' management systems changed considerably.

The planning heritage of 'Big Oil'

From the interviewees' accounts and prior research (notably, Grayson, 1987), I was able to identify the major features of the companies' strategic planning systems at the beginning of the 1980s. Corporate planning had been adopted by most of the companies during the early 1960s, in response to the increasing difficulties of coordination and control that the companies faced as they expanded their vertical, geographical, and product scope during the postwar period. Strategic planning began within their supply departments, where planning of international flows of oil and refined products had developed expertise in forecasting prices and market trends. By the late 1960s, most of the oil majors had established corporate planning departments.⁸

The primary task of these corporate planning departments was forecasting trends in energy markets and the general economy. Macroeconomic forecasts provided the basis for predictions of the demand, supply, and prices of oil and refined products upon which outputs, revenues, profits, and capital investment requirements were projected. Hence, all the planning departments included an economics unit typically headed by a professional economist.⁹ Diversification during the 1970s expanded the role of the corporate planning departments. By 1980 the corporate planning departments were involved in: forecasting demand, supply, prices, and profit margins; creating scenarios; undertaking country risk analysis; building corporate financial models to link economic and

⁸ Conoco established its planning department in 1953, Standard Oil (Ohio) in 1961, Atlantic Richfield in 1962, Royal Dutch/Shell and Elf Aquitaine in 1967, British Petroleum and Total in 1968, ENI in 1971, and Chevron in 1974.

⁹ The typical functions were to provide 'appraisals of domestic and international political-economic patterns and the potential economic consequences of these patterns; . . . macroeconomic studies and predictions of the U.S. economy; [and] political, economic and energy policy analysis and consultation in support of the development of policies, strategies, and environmental assumptions by the Planning Division, Governmental and Public Affairs Division, and other Company units' (memo by Robert Wycoff, Vice President, Planning, Arco, November 18, 1974).

Table 3. Features of the oil majors' strategic planning systems

	Types and duration of plans	Frequency	Strategic planning goals	Capital expenditure authorization limits	Special features of planning system
Amoco	Each of the 17 business groups and the whole corporation formulate: <ul style="list-style-type: none"> • 5-year strategic plans • 1-year performance plans that include financial targets, strategic milestones, and capex budgets 	Corporate plan annual; business group strategic plans updated when needed	Emphasis on: <ol style="list-style-type: none"> improving quality of decision making among the businesses more effective coordination among businesses creating emphasis on improved shareholder return 	For projects with outline approval within the business strategic plans, business heads could approve capital expenditures up to \$50m	Strategic planning central mechanism for system managing Amoco's newly decentralized structure and driving company transformation to becoming a global, high-performance company
BP	5-year strategic plans are formulated for each business and for whole company. In addition a longer-term qualitative view of the development of the company and its environment is created by the corporate planning unit. The 5-year strategic plans are closely linked with annual operating plans that are strongly financially oriented	Annual	Emphasis on: <ul style="list-style-type: none"> • Performance contracts between each business and the corporate center • Developing and exploiting distinctive competences 	Division-level authorization levels increased from between £5m to £15m in the mid-1980s; by 1996 only proposals involving expenditure above \$150m needed board approval	Post-1985, annual strategic planning cycle displaced by annual performance planning cycle and strategic planning became an informal process managed by the businesses with emphasis on continuous dialog between the businesses and the corporate center
Elf Aquitaine	Strategic plans formulated by each business unit, each division, and the corporation as a whole. Upstream plans for 10 years, downstream and chemicals for 5 years	Annual planning cycle	Emphasis on corporate control of the divisions, together with need for improved corporate performance	Divisional heads could approve up to FF60m (approx. \$10m)—higher for E&P, lower for Health and Beauty division)	Heritage of top-down, scenario-driven planning being moderated with increased attention to profitability goals

(continued overleaf)

Table 3. (Continued)

	Types and duration of plans	Frequency	Strategic planning goals	Capital expenditure authorization limits	Special features of planning system
ENI	4-year strategic plans formulated for each business unit, each sector, and for the group as a whole. The first year of the plan forms the basis for annual capital and operating budgets and annual performance objectives	Annual planning cycle	Emphasis on corporate control over operating company strategy and corporate pressure for efficiency and cost reduction	Up to 50 billion lire (approximately \$30m) could be approved by operating company presidents; larger sums required corporate-level approval. Limits increased in 1996	Corporate planning department played central role in 1994–97 privatization forcing financial discipline, cost cutting, and asset divestment upon the operating companies
Exxon	Business units and divisions formulate: <ul style="list-style-type: none"> • Strategic plans (upstream 14 years; downstream and chemicals 4–5 years) • 2-year financial forecasts • Annual operating and capital budgets • Annual stewardship targets including financial, operational, and environmental goals and strategic mileposts 	Annual planning cycle	Planning system primarily a means of setting stretch targets for the divisions and coordinating the division strategies	Divisional presidents could authorize expenditures up to \$15m (\$20m for E&P); individual members of the Management Committee could authorize up to \$50m	Since transformations of Exxon's corporate management systems in 1985–90, strategic planning emphasizes close informal collaboration between divisional presidents and the Management Committee
Mobil	Business units, business groups and the corporation as a whole each formulate 5-year strategic plans. The first year of the plan provides the basis for the Annual Financial Plan and the Annual Performance Commitments	Annual planning cycle	Planning system used to drive entrepreneurship among businesses and improve performance through quantitative targets	Corporate-level approval required for expenditures over \$10m	Strategic planning mainly decentralized to the businesses. Major emphasis on performance metrics

<p>RD/Shell</p>	<p>Strategic planning organized around two processes:</p> <ul style="list-style-type: none"> • 20-year strategic plans that grew out of Shell's scenario planning process • 5- to 10-year business plans that are formulated for sectors, countries, and regions 	<p>Strategic plans every 4 or 5 years Business plans annual</p>	<p>Planning system a means of enhancing the quality of operating company strategies and coordinating across sectors and regions</p> <p>In 1996, operating co. CEOs could approve up to \$1m and individual Managing Directors up to \$10m. After reorganization 'all discretionary levels were increased greatly to relieve the Committee of Managing Directors from having to approve endless numbers of individual projects'</p>	<p>Traditionally a communication-intensive planning process with coordination around sectors, regions, and functions. Break-up of Shell's matrix structure and increased emphasis on profitability causing Shell's planning system to become more performance oriented</p>
<p>Texaco</p>	<p>Strategic planning involves:</p> <ul style="list-style-type: none"> • 15- to 20-year scenario-based, qualitative 'strategic views' • 5-year quantitative strategic plans undertaken by the businesses and combined into the corporate strategic plan • 1-year tactical plans comprising budgets and performance targets 	<p>Strategic views each 3-5 years Strategic plans annual</p>	<p>Emphasis of strategic planning as a mechanism for 'capturing knowledge' and for driving shareholder return</p> <p>Capital expenditure authorization limits were not disclosed</p>	<p>Strong bottom-up strategic planning orientation with corporate-level focusing mainly upon performance requirement. Coordination achieved more through open communication than through hierarchical integration of plans</p>

market forecasts to company financial performance; administering the annual strategic planning cycle; developing planning methodologies and techniques; advising corporate and divisional management on strategic issues; and providing strategic analysis of major capital investment projects.

In administering the strategic planning process, the corporate planning departments became important intermediaries between corporate and divisional management—communicating corporate goals and priorities to divisional managers, assessing business-level plans presented to top management, and aggregating business-level plans into corporate plans. This pivotal role resulted in them exerting significant influence not just over the process of strategy formulation, but in many instances over its content as well.

Forces for change

The transformation of energy majors' market environment from stability and continuity to uncertainty and turbulence also created a far more hostile environment. The catastrophic fall in the price of oil in 1986 and increased competition at all stages of the companies' value chains put profits under considerable pressure. Simultaneously, a surge in acquisitions and leveraged buyouts created a more active market for corporate control that pressured top management to improve returns to shareholders. This transformation had far-reaching implications for the companies' strategies, structures, and management processes (Cibin and Grant, 1996)—including their strategic planning systems.

The changing foundations of strategic planning

The dangers of using medium-term forecasts as a foundation for business and corporate plans became painfully apparent during the 1980s, when the accuracy of macroeconomic and market forecasts—especially of crude oil prices—declined precipitously. As late as 1992, BP was brought to the brink of catastrophe as the result of a strategy that had assumed an oil price of \$20 a barrel. CEO John Browne subsequently remarked:

We gave up trying to forecast what would happen some time ago—we'd just learned from experience that even the most sophisticated models can't predict the reality of oil prices or any of the other key variables. All you can do is to look at the current

reality, and the recent pattern of the economic cycle and from that set yourself some guidelines against which you can judge your own performance.

During the 1980s and 1990s, all the companies reduced their forecasting efforts and downsized or eliminated their economist staff. Exxon's economic forecasting and analysis unit was reduced to a single staff economist. In place of forecasts, the companies' external analysis shifted in two directions. The first was scenario planning. While Shell was the only company to base its entire strategic planning process upon multiple scenario analysis, other companies adopted scenario planning to a more limited extent, for example, to explore particular issues (such as the future of OPEC or strategies for the former Soviet Union). Replacing single-point forecasts with alternative scenarios of the future had important implications for the nature of strategic planning. Instead of a single basis for competitive positioning and resource deployment, scenario analysis was a tool for contingency planning that fostered alertness and responsiveness among decision-makers to changing market circumstances. The reluctance of some companies to use scenarios more widely as a basis for strategy formulation was partly the result of the perceived costs of developing and disseminating scenarios in terms of management time.

The second response was to replace forecasts of key variables with assumptions about these variables. Thus, in relation to the prices of crude oil, natural gas, and refined products and key currency exchange rates, all the companies introduced 'reference prices' which provided a basis for financial projections and performance targets. Again, this shifting basis for planning had far-reaching implications for the nature of strategic planning.¹⁰ The purpose of reference prices and other fixed assumptions about the environment was not to provide a basis for strategic decisions, but to provide a consistent foundation against which financial performance could be targeted and monitored. This shift of planning from 'strategy-as-resource-deployment' to 'strategy-as-aspirations-and-performance-goals' is a key transition that I return to below.

¹⁰ Exxon and several other companies used the term 'reference prices.' BP used the term 'mid-cycle prices' (referring to price assumptions that were averaged across the economic cycle).

Growing informality of the planning process

The planning systems of the 1970s and 1980s were highly formalized in terms of documentation, formal presentations, emphasis on techniques and quantitative analysis, and the central role of specialist planners. By 1996–97, planning systems were far more informal: there was less emphasis on written documentation, strategic plans were shorter, and there was less emphasis on set-piece presentations and more on open discussion. To encourage discussion and the exchange of ideas new rules-of-play were adopted: BP discouraged the use of multiple graphs at strategy meetings; Amoco limited the number of slides at strategy presentations. Meetings between business-level and corporate executives became shorter and the balance shifted from presentation to discussion. All the companies reported that the annual meetings between corporate and business executives to discuss business-level strategic plans were increasingly focused around discussion of a few underlying issues. Similarly, at strategy and performance review meetings, discussion became focused around just a smaller set of performance variables. As a result, meetings become shorter:

- At Mobil performance reviews were downsized from 2-day meetings with each division with formal presentations by business managers to shorter, more informal interactions where business group management reported to the Executive Committee on ‘How we did. What we did. What we didn’t do.’
- At Exxon, the annual ‘stewardship reviews’ between the divisional president and the Management Committee were cut from 3 or 4 days down to a half-day. These meetings focused upon reports of key performance indicators and ‘Things we feel good about, and things we feel bad about.’

Less formality was also evident in a move from a regular, standardized planning cycle to more flexible and ad hoc process. As noted above, Amoco allowed its business groups to develop new strategic plans as and when needed, while the long-term, scenario-based projections by Shell and Texaco became less regular.

Shifting strategic planning responsibilities

Increasing volatility and uncertainty of the external environment was accompanied by two changes in strategic planning responsibilities: first, a shift of decision-making responsibility from corporate to business-level managers; second, a shift of planning responsibilities from planning staff to line managers.

From corporate management to business management

By the late 1990s, strategic planning was primarily a bottom-up process. The content of the strategic plans were determined mainly at the business unit and divisional levels under the principle that business-level chief executives were responsible for their businesses—including their business strategies. This concept of business-level management ‘owning’ the business and being responsible to shareholders and corporate executives for its management was a particularly strong philosophy at Exxon and BP. The corporate influence was primarily in establishing the context for business strategy formulation and intervening to question, criticize, and cajole business managers. Decentralization of strategic management authority was indicated by the increasing levels of discretion exercised by business unit and divisional managers over capital expenditures. As Table 3 shows, during the 1990s all the companies raised authorization levels of individual executives.

This transfer of strategic planning responsibilities from corporate to divisional level was part of a broader shift in the relationship between corporate and divisional management. The key priorities of the 1990s were speedier decision making to respond to fast-changing external circumstances and the increasing returns of shareholders. Strategic planning systems became less about planning the majors’ long-run growth and stability, and more about squeezing increased profitability from mature, slow growth businesses. If business-level managers were to take responsibility for strategic decisions, while corporate management was to be responsible for shareholder returns, decentralization of strategic decision making needed to be matched by divisional executives being unambiguously accountable for divisional performance. By 1996, the primary focus of the strategic planning processes of the majors was medium-term performance targets. If the primary responsibility of

divisional management was to achieve the levels of performance expected by corporate management, the inevitable corollary was that divisional management must be free to select strategies capable of delivering the required performance. The role of the corporate headquarters in strategic planning focused less on endorsing and approving business-level strategies and more on negotiation with the divisions over expected performance levels and questioning and challenging the thinking behind the proposed strategies in order to improve the quality of divisional strategic decision making.

From staff to line managers

Decentralization of strategic planning from corporate to business levels coincided with a declining role of planning staff as corporate and divisional line managers became increasingly responsible for strategic planning. This diminishing role of strategic planning staff reflected the increasing personal responsibility on executives at all levels. As chief executives became more accountable to shareholders for corporate performance and divisional heads became increasingly responsible to their chief executives for divisional performance, so these executives became individually responsible for strategy. The shift of responsibility from staff planners to executives is indicated by the shrinking size of corporate planning departments (see Table 4). This downsizing of corporate planning staffs was reinforced by the reduction in economic forecasting activities and the outsourcing of intelligence activities and analysis to consulting companies. In addition, planning staff became

increasingly located within the operating divisions. For example, at Mobil in 1996, corporate planning staff numbered only 13; however, each of Mobil's 13 business groups had its own planning units, and throughout the (approximately) 100 'natural businesses' there were some 470 planning staff. Similarly, at ENI, at the beginning of 1995, the 72 corporate planning staff were outnumbered by the 416 strategic planning staff located in the operating companies.

The content of strategic plans

A detailed analysis of the content of strategic plans was not possible owing to the reluctance of the companies to make available their plans. Only two of the companies made available recent planning documents. Nonetheless, it was clear from the interviews that some significant changes had occurred in the content of strategic plans over the previous decade. Three trends were common to all the companies:

1. *Shortening time horizons.* Table 3 shows the periods for which the companies prepared their strategic plans. All the companies reported a shortening of their planning horizons over the previous decade.¹¹ Among my sample, five out of the eight companies had planning periods of 5 years or less. However, the major contraction of companies' strategy horizons resulted, not from formal changes to their planning periods, but from shifting their emphasis from the long term to the short and medium term. For example, the companies that engaged in both medium-term strategic planning and longer-term scenario planning (Shell, Texaco, and Elf) increased their emphasis on medium-term planning at the expense of longer-term projections. Foreshortened planning horizons were most apparent among companies whose strategic priorities were dominated by restructuring, cost cutting, and the need to boost shareholder return (e.g., ENI's strategic plans period was only 4 years). A second trend was to link planning periods more closely to the lives of investment. Thus, Exxon and Elf each required their upstream sector to plan for 10–15 years as

Table 4. Numbers employed in corporate planning departments

	1990	1993	1996
Amoco	90	60	30
BP	48 ^a	12	3
Elf	n.a.	15	14
ENI	n.a.	72	65
Exxon	42 ^a	20	17
Mobil	38	n.a.	12
Shell	48 ^b	23	17
Texaco	40	n.a.	27

^a Estimated. In 1986 Exxon's corporate planning staff numbered 60.

^b Estimated. In 1985 Shell's corporate planning staff numbered 54.

¹¹ This was consistent with Grayson (1987), who identified only one oil company with a planning period of less than 8 years.

compared to 5 years for their downstream and chemical sectors.

2. *A shift from detailed planning to strategic direction.* Increased environmental instability resulted, not only in less formality and rigidity of the planning process, but also in less precision and greater flexibility in the content of strategic plans. Strategic plans became less concerned with detailed programs of action, commitments to particular projects, and resource deployments, and placed greater emphasis upon more broadly defined goals. For example, Amoco's strategic plan of 1995–99 was specified almost entirely in terms of 'strategic themes' and 'specific strategies and goals'. These strategies and goals related to themes that included financial targets ('net income to exceed \$3 billion by 1998') and cost reduction ('achieve cost savings of \$1–2 billion from restructuring') and international expansion (e.g., 'to develop a global gas business'). This shift to broad strategic direction is also indicated by the adoption by all the companies (with the exception of Exxon and Elf Aquitaine) of statements of 'mission' and/or 'vision' to communicate and guide their strategies. Although these mission and vision statements were partly exercises in image management, the interviewees pointed to their significant role in the strategy-making process in terms of creating a sense of corporate, identity-setting boundaries for corporate scope and establishing long-term strategic intent.
3. *Increased emphasis on performance planning.* In discussing the shifting relationship between corporate and divisional levels in the planning processes, I noted the increasing emphasis placed on performance targets. During the 1990s, the strategic plans of all the companies shifted their focus away from forecasts and specific strategic decisions that specified timetables and resource deployments, and towards targets relating to financial and operational performance targets. Thus, of Amoco's six strategic themes of 1995–99, four were couched entirely in terms of performance outcomes rather than commitments to take specific actions. The growing preoccupation with performance goals was also evident in the increasing emphasis placed upon short and medium performance planning within the strategic planning process. Despite different terminology—'performance plans' (Amoco), 'management by

objectives' (ENI), 'stewardship basis' (Exxon), and 'performance commitments' (Mobil)—the elements were similar:

- *Financial targets.* These focused upon total profit (typically net profit and/or operating profit, and in some cases economic profit, e.g. EVA) and profitability ratios (return on capital employed was the most widely used). Several companies set targets for shareholder return (typically defining targets in relation to the sector as a whole, e.g., 'to achieve a return to shareholders in the top quartile of the industry').
- *Operating targets.* For upstream these might include production, wells drilled, lease agreements signed, reserves added. For downstream these might include throughput, capacity utilization, inventories.
- *Safety and environmental objectives.*
- *Strategic mileposts*—intermediate objectives which were indicators that a strategy was on track. For a division, strategic mileposts might relate to entry into specific countries, specific cost reduction targets, new product introductions, and divestments of specified assets.
- *Capital expenditure limits.*

Among these different objectives, the overwhelming priority for all the companies was financial targets. This emphasis was evident in the tools and techniques used by the companies' planning departments. Despite all the strategy concepts, tools, and techniques developed during the 1990s—from competitive analysis to the analyses of resources and capabilities—most of the new tools and techniques deployed by the oil majors during the 1990s were financial in nature. These included new measures of profitability (e.g., EVA), techniques of shareholder value analysis, and real options analysis.

The companies were acutely aware of the problems of reconciling short-term (annual) performance targets with longer-term performance goals—while effective performance monitoring required quarterly and annual appraisal, maximization of shareholder value required long-term profit maximization. Hence all the companies sought to combine short-term profit targets with strategic and operational targets that were consistent with building longer-term competitive advantage (e.g., the operating targets and strategic mileposts

referred to above). Mobil, Texaco, and Amoco used 'balanced scorecards' for achieving consistency between short-term performance targets and longer-term strategic goals. At Mobil, balanced scorecards played a key role in 'cascading down' corporate and divisional strategies to business units and individual departments.

The essential complements to performance plans were performance reviews. At all the companies, reviews of business performance against performance targets and strategic plan were central elements of the strategic planning process. Most companies had quarterly performance reviews based on the businesses submitting written performance reports with informal discussion between divisional and corporate management. The major business-corporate interactions were at the annual performance reviews that took place in the early part of the calendar year and involved face-to-face meetings between divisional and corporate top management.

THE ROLE OF STRATEGIC PLANNING

Changes in the oil majors' strategic planning practices pointed to a different role for strategic planning within the companies. The strategic planning systems of the 1960s and 1970s were mechanisms for formulating strategy—they planned growth and allocated resources. By the late 1990s, strategy formulation was occurring, for the most part, outside of the companies' strategic planning systems. When interviewees were asked to identify the sources of critical strategic decisions that their companies had made in recent years—acquisitions, divestments, restructuring measures, and cost-cutting initiatives—it was apparent that few had their origins in the plans that emerged from the companies' strategic planning systems. The typical sequence was the other way round: strategic decisions were made in response to the opportunities and threats that appeared, and were subsequently incorporated into strategic plans. If the purpose of the strategic planning system was not primarily to take strategic decisions, what role did it play within the companies' management? The interview data pointed to three key roles.

Strategic planning as a context for strategic decision making

Even if strategic planning systems were no longer the primary decision paths for making strategy, they created contexts that influenced the content and quality of strategic decisions. Even here, the mechanisms through which the corporate center conventionally influenced business-level strategies—providing forecasts and detailed scrutiny—had progressively eroded. This left two key processes through which the corporate planning processes contributed to the quality of business-level strategic management:

1. *Influencing the methodologies and techniques of strategic planning.* Although corporate planning departments continued to act as centers of excellence for strategy methods and strategy techniques, downsizing of planning departments downsized and increased reliance upon outside consultants for analytical expertise constrained this role. Some tools of strategy analysis were widely used, including Porter-type industry analysis, shareholder value analysis, game theory, appraisals of competencies and capabilities, PIMS analysis, and the identification of critical success factors. However, several companies, Exxon in particular, were skeptical of most formal strategy techniques and the jargon associated with them, believing that they created a barrier to deploying experience-based knowledge and hampered the shift of strategic planning responsibility from planning staff to line managers.¹²
2. *Providing channels and forums for communication and knowledge sharing.* All the companies placed greater emphasis on the communication and knowledge sharing role of planning processes. Indeed, the desire to promote dialog between businesses and the corporate executives on fundamental strategy issues was the main motive for reducing the formality of the planning process. This involved shifting emphasis of strategy meetings from formal presentations to face-to-face discussion where assumptions and beliefs were challenged and critical

¹² This was consistent with the experience of General Electric where simplification of the strategic planning system was accompanied by less reliance upon technical strategic analysis (Aguilar *et al.*, 1993).

issues identified. Shell and Exxon provide contrasting examples of this trend:

- Shell has placed particular weight upon strategic planning as a vehicle for organizational learning. Shell's scenario planning process was primarily a process for sharing and integrating multiple knowledge bases from both within and outside the Shell group. Shell's 'scenario-to-strategy' framework involved discussion workshops in which scenarios would provide the foundation for an interactive strategy formulation. To maximize the organizational learning occurring through the strategic planning process, Shell has attempted to make explicit the perceptions and judgments of the various decision makers within the strategy process through techniques such as 'mental mapping.'
- Exxon's emphasis was upon a strategic planning process that was tightly integrated within a management structure that stressed the close bonds of communication and accountability between each divisional president and the corresponding 'contact director' on the corporate management committee. Thus, while Exxon had a well-defined strategic planning system, the formalities relating to the submission, discussion, and approval of divisional strategic plans were inseparable from the regular communication and interaction between the division presidents and the management committee that allowed strategic plans to be informed and guided by the continual integration of divisional and corporate-level knowledge.

Strategic planning as a mechanism for coordination

Increased emphasis on planning as a process of communication and knowledge sharing was intended not only to influence and improve strategic decisions, but also to provide a basis for coordinating decentralized decision making. The interview data suggested that increased environmental turbulence had enhanced the role of the strategic planning system as a coordinating device. As decision making had become increasingly decentralized, there was a growing need for a structured process of dialog, adjustment, and agreement to coordinate these dispersed decisions. This increased emphasis on coordination was evident from a number of the changes already described, notably the

transition by the corporate center from detailed control towards more general direction and guidance, and the increased emphasis placed upon business–corporate dialog and consensus building. The priority accorded to this coordinating role of strategic planning varied between the companies. In general, the more decentralized was strategic decision making, the greater the emphasis on strategic planning as a coordinating device. Thus, Shell with its 200 separate operating companies had long regarded its strategic planning process as primarily a vehicle for coordination and consensus within its far-flung business empire. Similarly, once Amoco reorganized as 17 separate business groups, the corporate planning department became increasingly concerned with providing vertical coordination between corporate and business levels, and developing horizontal coordination, e.g., through involving different business groups in country 'umbrella strategies.' Exxon's emphasis upon strategic planning as a coordinating device was a central rationale for embedding its strategic planning process within ongoing dialog between the divisional presidents and 'contact directors.' Exxon's head of corporate planning described Exxon's strategic planning as having evolved from a 'product-based' to a 'process-based' system.

Strategic planning as a mechanism for control

Hierarchical control in organizations can be exerted through behavioral control which manages the *inputs* into decisions through supervision and approval, and *output* control which manages the performance outcomes of decisions (Ouchi, 1979; Eisenhardt, 1985). Establishing control over increasing large and unwieldy corporate empires was a major motive for the adoption of strategic planning. Corporate planning provided a medium- and long-term control mechanism that complemented the short-term controls provided by budgeting systems. Under the 'old model' corporate management's ability to approve (or reject) business-level strategic and the resource allocations to support these plans represented a form of input control.

By the late 1990s, strategic planning's function as a control system had shifted from one based upon strategy content to one based upon strategy outcomes defined in terms of the performance that the strategy would deliver. This shift was apparent from three types of evidence. First,

the corporate guidelines that shaped business-level strategic planning (stage 1 of the generic strategic planning cycle) places increased emphasis on company-wide financial performance goals. This shift was also evident in the ways in which the companies revised their statements of mission, vision, and business principles. By the late 1990s, pride of place was given to shareholder return and superior profitability. Second, most companies reported that the meetings to discuss business-level strategic plans (stage 3 of the generic planning cycle) had become increasingly focused around performance targets (especially for operating profit and return on capital employed). Third, as attention shifted to the setting and monitoring of performance targets, so the performance planning process (stage 8 of the generic strategic planning cycle) became increasingly prominent.

Preoccupation with shareholder return was translated into rising aspirations for ROCE. Belief in the efficacy of 'stretch goals' also influenced thinking about the role of strategy. Hamel and Prahalad's (1989, 1994) analysis of 'strategic intent' and 'strategy as leverage and stretch' suggests that strategy's biggest contribution to company's performance is not so much through superior strategic decisions as in raising levels of aspiration and commitment through setting challenging goals.

Increasing emphasis on performance and quantification of performance targets was accompanied by less detailed strategic plans. This was most evident among the companies that placed the biggest emphasis on performance planning—BP, Exxon, and Texaco. These companies argued that commitments by divisional presidents to ambitious performance targets required their taking responsibility for divisional strategy. The more corporate was involved in influencing divisional strategies, the greater the erosion of divisional responsibility and accountability. Increasingly the corporate message was: 'Here's the performance we require. You figure out how to deliver it.' This shift from strategic control to performance planning (supported by stronger performance incentives) was typically described by the companies in terms of 'empowerment'—divisional and business unit managers were accorded greater decision-making discretion, while becoming more individually accountable for results.¹³

¹³ The principle that tighter controls on performance targets inevitably require weaker controls over strategy is consistent

DISCUSSION

Implications for design vs. process debate

The evidence on the strategic planning practices of the major oil companies suggests that the long-running debate over the roles of rational design and organizational emergence in strategy formulation has been perpetuated by misconceptions of the reality of strategic planning. The vivid caricatures presented by each side of the other's conceptualization of strategy making bear little resemblance to the realities of strategic planning as pursued by large companies during the late 1990s.

Although hierarchical in structure with decision-making power ultimately vested in the top management team and critical inputs provided by corporate planning staff, the major oil companies' strategic planning systems of the late 1990s had little in common with the highly bureaucratized, top-down processes caricatured by Henry Mintzberg. In particular, strategic planning was primarily a bottom-up process in which corporate management provided direction, but primary inputs came from the business units and operating divisions. However, consistent with the process view of strategy formation, it was clear that the strategies of the oil majors were not created by their strategic planning systems. Strategic planning systems were mechanisms for improving the quality of strategic decisions, for coordinating strategic decision making, and for driving performance improvement. However, the critical strategic decisions that fundamentally affected the business portfolios and direction of development of the companies were, for the most part, taken outside formal systems of strategic planning.

By disbanding aspects of strategic planning conventionally associated with rational, top-down strategy design and embracing adaptive, emergent aspects of strategy making, none of the oil majors appeared to be deluded by Mintzberg's (1994b: 110–112) 'fallacies of strategic planning.' In terms of the 'fallacy of prediction,' none of the strategic planning systems relied upon precise predictions

with the tenets of control theory. A system may be controlled either by controlling outputs or inputs, but not both. If corporate controls the strategic decisions being taken at divisional level, it must accept the performance resulting from those decisions; conversely, if it is setting performance targets, then the divisions must be free to make the decisions needed to reach these targets.

of key external variables. In terms of the 'fallacy of detachment,' all the companies located primary strategy responsibilities with line managers. In terms of 'fallacy of formalization,' all the companies had substantially reduced the formality of their planning procedures.

In short, the strategic planning systems of the international majors could be described as processes of 'planned emergence.' The primary direction of planning was bottom-up—from the business units to the corporate headquarters—and with business managers exhibiting substantial autonomy and flexibility in strategy making. At the same time, the structure of the planning systems allowed corporate management established constraints and guidelines in the form of vision and mission statements, corporate initiatives, and performance expectations. In bringing together these bottom-up and top-down initiatives through dialog, debate, and compromise, the systems displayed aspects of the 'generative planning model' that Liedtka (2000) suggests is conducive to strategic change.

To what extent do these systems of 'both incremental learning and deliberate planning' (Goold, 1992: 169) assist the companies in adapting effectively to the challenges and opportunities of the 1990s? Distinguishing the contribution of strategic planning as distinct from other aspects of the companies' management processes is difficult. What is apparent, however, is that the major oil companies were exceptionally successful in adapting to the challenges of the decade. Key strategic adjustments by the oil majors included: rationalization of downstream and chemical businesses in the face of chronic excess capacity (especially through joint ventures and asset swaps), refocusing upon core energy businesses, upstream expansion into new geographical areas (especially China, the Former Soviet Union and Latin America), the adoption of new technologies (e.g., deep-water exploration, directional drilling, 3D seismic analysis, and environmentally friendlier fuels), adaptation to social and political pressures, and responsiveness to the demands of owners (especially Elf and ENI's transformation from state to shareholder ownership). Perhaps the strongest evidence of the effectiveness of strategic adjustment lies in bottom-line performance: despite the low oil prices that prevailed for most of the 1990s, profitability for most of the companies was higher than during earlier

Table 5. The oil majors' return on equity, 1970s, 1980s and 1990s

	1970–79	1980–89	1990–98
<i>Return on equity</i>			
Shell Group	10.76	13.87	13.82
Exxon	13.63	15.30	16.14
Mobil	11.15	11.57	12.87
BP	9.07	12.08	11.09
ENI	4.83	0.13	10.20
Elf Aquitaine	6.24	11.91	9.37
Texaco	10.30	8.93	12.30
Amoco	11.57	14.56	12.54
Average price of crude oil (U.S. wellhead purchase price at constant 1996 \$ per barrel)	17.1	28.6	17.4

Source: *Fortune Global 500*; WTRG Economics.

periods when oil prices were significantly higher (see Table 5).

However, as mechanisms for aligning the companies more closely and effectively with their changing environment and guiding their long-term development, the effectiveness of the companies' strategic planning may also have deteriorated in three respects:

1. The foreshortening of planning horizons may reflect a shift in top management priority from long-term development to short- and medium-term performance goals. When investment projects have lives that extended to 40 years, strategic planning horizons of 4 and 5 years limited the potential for companies to relate their current resource allocations with their longer-term vision.
2. The transfer of strategic planning responsibilities from staff planners to line managers, while resolving problems of formalization and detachment, also entailed a loss of analytical capability. One of the ancillary observations of our study was the limited use by the companies of recently developed strategy concepts and techniques. Despite the rapid diffusion of the tools and techniques of strategic management during the 1980s and 1990s, few of these found application in the strategic planning processes of the oil majors. Although performance management tools—shareholder value analysis, EVA, balanced scorecards, and the like—had achieved

significant uptake, the same was not apparent for concepts and techniques of strategy analysis. For example, while interviewees frequently referred to 'building competitive advantage,' 'exploiting key strengths,' and 'leveraging core competences,' only one of the companies (Amoco) had introduced any systematic process for assessing and developing organizational capabilities. It is possible that the priority accorded to financial performance targets in strategic planning squeezed out analysis. For example, the reluctance of several of the majors to introduce option valuation into their capital budgeting procedures stemmed from the fear that adding greater complexity might result in losing the discipline associated with unambiguous hurdle rates of return.

3. While breaking down the rigidities of the old formalized planning systems and embracing emergent strategy-making processes, the companies had done little in terms of positive measures to encourage innovation in strategy making. If competitive advantage in changing markets depends critically upon strategic innovation (Hamel, 2000; Baden-Fuller and Stopford, 1994; Markides, 1998), then the sources of strategic innovation need to be considered. While bottom-up, informal strategic planning systems offer the potential for innovative strategies to emerge, the absence of impediments to such innovation is not the same as positive measures to foster such innovation.

Implications for the management of complexity

In discussing the literature on the implications of environmental turbulence for strategic planning, I noted the potential contribution of complexity theory in providing a bridge between the opposing views of the strategy-as-design and strategy-as-process camps. Several of the features of the oil majors' strategic planning systems are consistent with the observations of other management scholars regarding the implications of complexity theory for business management. If scaling fitness peaks requires combining incremental steps with occasional major leaps (Anderson, 1999; Beinhocker, 1999), performance-focused strategic planning may facilitate this goal. Bottom-up strategic planning is conducive to incremental adaptation. Yet, as Shell, BP, ENI, and Texaco demonstrated,

when realized performance falls far short of targeted level, the natural bias towards incrementalism is supplanted by pressures for more radical strategic changes.

My characterization of the companies' strategic planning processes as ones of 'planned emergence' corresponds closely to Brown and Eisenhardt's (1997) concept of 'semistruktures': the planning systems created an organizational structure, a fixed time schedule, and defined goals and responsibilities, while offering considerable freedom for experimentation, entrepreneurship, and initiative at the business level. Two aspects of this 'semistrukture' character of strategic planning systems were particularly apparent. First, the strategy planning processes embodied the concept of simple rules which models of complex adaptive systems suggest can be remarkably effective in predicting and guiding the adaptation of nonhierarchical systems to changing environmental conditions (Gell-Mann, 1994; Eisenhardt and Sull, 2001). The strategy initiatives and guidelines established by corporate management in the form of mission and vision statements and targets for cost reduction, reserve replacement, and debt/equity ratios represented a framework of constraints and objectives that bounded and directed strategic choices. Second, existence of rigid annual planning cycles and the emphasis on breaking down longer-term strategic goals into short-term objectives in the form of strategic milestones, programmed targets, and scorecards corresponded to Brown and Eisenhardt's (1997) concept of time-paced transition from the present to the future.¹⁴

Implications for the theory of the multidivisional corporation

These observations of the characteristics and nature of strategic planning in large multiproduct, multinational corporations also have implications for the theory of the multidivisional organizations as developed by Williamson (1975, 1985) based upon empirical research of Chandler (1962). The efficiency of the multidivisional form ('M-form') in organizing activities spanning multiple product markets and/or multiple countries rests upon its efficiency both as a coordinating device and

¹⁴ Although Brown and Eisenhardt apply the concept to project management, the idea of linking change to a clear time schedule is common to both.

as a structure for goal alignment. In relation to goal alignment, the study shows how the oil majors' strategic planning systems embodied the opportunism-limiting features of the M-form. The linking of strategic planning authority with profit and loss responsibilities has created a management system much more closely aligned with Williamson's principles of 'effective multidivisionalization,' especially in relation to 'monitoring efficient performance,' 'awarding incentives,' and 'allocating cash flows to high yield uses' (Williamson, 1985: 284). In relation to efficiency of coordination, the evidence is only partly consistent with the existing theory of the M-form. Williamson draws upon Ashby's theory of cybernetics and Simon's theory of nearly-decomposable systems to argue that the efficiency of the M-form derives from its separation of high-frequency (operating) decisions from low-frequency strategic decisions. Given that the oil majors' strategic planning is located as much (if not more) in the divisions as in corporate headquarters, it appears that the critical distinction between corporate and divisional activities is based more upon realms of knowledge than decision frequency: the divisional managers focus on business strategy and corporate managers focus upon corporate strategy on the simple basis that decisions need to be co-located with the knowledge pertinent to these decisions.

CONCLUSION

The findings from this study, together with other recent evidence, show that strategic planning continues to play a central role in the management systems of large companies. At the same time, strategic planning practices have changed substantially over the past two decades in response to the challenges of strategy formulation in turbulent and unpredictable environments. Strategic planning processes have become more decentralized, less staff driven, and more informal, while strategic plans themselves have become shorter term, more goal focused, and less specific with regard to actions and resource allocations. The role of strategic planning systems within companies' overall management has also changed. Strategic planning had become less about strategic decision making and more a mechanism for coordination and performance managing. The growing prominence of performance targets within strategic plans has

changed the role of strategic planning as a corporate control system, permitting increased decentralization of strategic decision making and greater adaptability and responsiveness to external change.

Despite the apparently successful adaptation of strategic planning systems to unstable, uncertain environments, the study pointed to the limited impact of strategic planning processes upon the quality of strategic decisions. Decentralization and informality of strategic planning processes permitted access to a broader range of expertise, but there was limited use of new tools and concepts of strategic analysis and little evidence that the systems of strategic planning were conducive to strategic innovation.

The study has implications for the study of strategic management. The features of strategic planning revealed by the study suggest that much of the debate between the 'strategy-as-rational-design' and 'strategy-as-emergent-process' schools has been based upon a misconception of how strategic planning works in the real world. The process of 'planned emergence' evident in the companies' strategic planning systems is consistent with management principles derived from complexity theory and observations of complex adaptive systems, and offers insights into the design principles of the multidivisional firm.

REFERENCES

- Aguilar FJ, Hamermesh RG, Brainard CE. 1993. General Electric Co.: 1984, Case 385315. Harvard Business School: Boston, MA.
- American Productivity and Quality Center. 1996a. *Strategic Planning: Final Report*. APQC's International Benchmarking Clearinghouse: Houston, TX.
- American Productivity and Quality Center. 1996b. *Reinventing Strategic Planning for a Dynamic Environment*. APQC's International Benchmarking Clearinghouse: Houston, TX.
- Anderson P. 1999. Complexity theory and organizational science. *Organization Science* 10: 216–232.
- Ang JS, Chua JH. 1979. Long-range planning in large United States corporations: a survey. *Long Range Planning* 12(April): 99–102.
- Ansoff HI. 1965. *Corporate Strategy*. McGraw-Hill: New York.
- Ansoff HI. 1991. Critique of Henry Mintzberg's 'The design school: reconsidering the basic premises of strategic management'. *Strategic Management Journal* 12(6): 449–462.
- Baden-Fuller C, Stopford JM. 1994. *Rejuvenating the Mature Business: The Competitive Challenge*. Harvard Business School Press: Boston, MA.

- Beinhocker ED. 1999. Robust adaptive strategies. *Sloan Management Journal*, Spring: 95–106.
- Bourgeois LJ. Strategy and the environment: a conceptual integration. *Academy of Management Review* 5: 25–39.
- Bower JL. 1970. *Managing the Resource Allocation Process*. Division of Research, Harvard Business School: Boston, MA.
- Boyd BK. 1991. Strategic planning and financial performance: a meta-analysis. *Journal of Management Studies* 28: 353–374.
- Boyd BK, Reuning-Elliott E. 1998. A measurement model of strategic planning. *Strategic Management Journal* 19(2): 181–192.
- Brews PJ, Hunt M. 1999. Learning to plan and planning to learn: resolving the planning school/learning school debate. *Strategic Management Journal* 20(10): 889–914.
- Brown SL, Eisenhardt KM. 1997. The art of continuous change: linking complexity theory and time-based evolution in relentlessly shifting organizations. *Administrative Science Quarterly* 42: 1–34.
- Burgelman RA. 1983. A process model of internal corporate venturing in a diversified major firm. *Administrative Science Quarterly* 28: 223–244.
- Burgelman RA. 1994. Fading memories: a process theory of strategic business exit in dynamic environments. *Administrative Science Quarterly* 39: 24–36.
- Burgelman RA. 1996. A process model of strategic business exit: implications of an evolutionary perspective on strategy. *Strategic Management Journal*, Summer Special Issue 17: 193–214.
- Burgelman RA, Grove A. 1996. Strategic dissonance. *California Management Review* 38(2): 8–28.
- Burns T, Stalker GM. 1961. *The Management of Innovation*. Tavistock: London.
- Business Week. 1996. Strategic planning. 26 August: 45–52.
- Capon N, Farley JU, Hulbert JM. 1987. *Corporate Strategic Planning*. Columbia University Press: New York.
- Chandler AD. 1962. *Strategy and Structure*. MIT Press: Cambridge, MA.
- Cibin R, Grant RM. 1996. Restructuring among the world's leading oil companies. *British Journal of Management* 7: 283–307.
- Cleland DI. 1976. *The Origin and Development of a Philosophy of Long-Range Planning in American Business*. Arno Press: New York. (Original PhD thesis submitted Ohio State University, 1962.)
- Courtright JA, Fairhurst GT, Rogers LE. 1989. Interaction patterns in organic and mechanistic systems. *Academy of Management Journal* 32: 773–802.
- De Geus A. 1988. Planning as learning. *Harvard Business Review* 66(2): 70–74.
- De Geus A. 1997. *The Living Company*. Harvard Business School Press: Boston, MA.
- Denning BW, Lehr ME. 1971. The extent and nature of long-range planning in the United Kingdom—I. *Journal of Management Studies* 8: 145–161.
- Denning BW, Lehr ME. 1972. The extent and nature of long-range planning in the United Kingdom—II. *Journal of Management Studies* 9: 1–18.
- Eisenhardt KM. 1985. Control: organizational and economic approaches. *Management Science* 31: 134–149.
- Eisenhardt KM. 1989. Making fast strategic decisions in high-velocity environments. *Academy of Management Journal* 32: 543–559.
- Eisenhardt KM, Sull DN. 2001. Strategy as simple rules. *Harvard Business Review* 79(1): 107–116.
- Ewing DW. 1956. Looking around: long-range business planning. *Harvard Business Review* 56(4): 135–146.
- Gell-Mann M. 1994. *The Quark and the Jaguar*. Freeman: New York.
- Goold M. 1992. Design, learning and planning: a further observation on the design school debate. *Strategic Management Journal* 13(2): 169–170.
- Grant RM, Cibin R. 1996. Strategy, structure and market turbulence: the international oil majors, 1970–91. *Scandinavian Journal of Management* 12: 165–188.
- Grayson LE. 1987. *Who and How in Planning for Large Companies: Generalizations from the Experiences of Oil Companies*. St Martin's Press: New York.
- Grinyer PH, Norburn D. 1975. Strategic planning in 21 UK companies. *Long Range Planning* 7(August): 80–88.
- Grinyer PH, Al-Bazzaz S, Yasai-Ardekani M. 1986. Towards a contingency theory of corporate planning: findings in 48 UK companies. *Strategic Management Journal* 7(1): 3–28.
- Hamel G. 1996. Strategy as revolution. *Harvard Business Review* 74(4): 69–76.
- Hamel G. 2000. *Leading the Revolution*. Harvard Business School Press: Boston, MA.
- Hamel G, Prahalad CK. 1989. Strategic intent. *Harvard Business Review* 67(3): 63–76.
- Hamel G, Prahalad CK. 1994. *Competing for the Future*. Harvard Business School Press: Boston, MA.
- Hannan MT, Freeman J. 1989. *Organizational Ecology*. Harvard University Press: Cambridge, MA.
- Henry HW. 1967. *Long-Range Planning Practices in 45 Industrial Companies*. Prentice Hall: Englewood Cliffs, NJ.
- Javidan M. 1984. The impact of environmental uncertainty on long-range planning practices of the U.S. savings and loan industry. *Strategic Management Journal* 5(4): 381–392.
- Jennings D. 2000. PowerGen: the development of corporate planning in a privatized utility. *Long Range Planning* 33(2): 201–218.
- Kukalis S. 1991. Determinants of strategic planning systems in large organizations: a contingency approach. *Journal of Management Studies* 28: 143–160.
- Learned E, Christensen CR, Andrews KR, Guth WD. 1965. *Business Policy: Text and Cases*. Irwin: Homewood, IL.
- Liedtka J. 2000. Strategic planning as a contributor to strategic change: a generative model. *European Management Journal* 18(2): 195–206.

- Lindsay WM, Rue LW. 1980. Impact of organization environment on the long-range planning process: a contingency view. *Academy of Management Journal* **23**: 385–404.
- March JG. 1981. Footnotes to organizational change. *Administrative Science Quarterly* **26**: 563–577.
- Markides C. 1998. Strategic innovation in established companies. *Sloan Management Review* **39**(Spring): 27–36.
- Miller CC, Cardinal LB. 1994. Strategic planning and firm performance: a synthesis of more than two decades of research. *Academy of Management Journal* **37**: 1649–1665.
- Mintzberg H. 1991. Learning 1, planning 0: reply to Igor Ansoff. *Strategic Management Journal* **12**(6): 463–466.
- Mintzberg H. 1994a. *The Rise and Fall of Strategic Planning*. Free Press: New York.
- Mintzberg H. 1994b. The fall and rise of strategic planning. *Harvard Business Review* **72**(1): 107–114.
- Mintzberg H, Brunet P, Waters J. 1986. Does planning impede strategic thinking? Tracking the strategies of Air Canada from 1937 to 1976. In *Advances in Strategic Management*, Vol. 4, Lamb RB, Shivastava P (eds). JAI Press: Greenwich, CT; 3–41.
- Mintzberg H, McHugh A. 1985. Strategy formulation in an adhocracy. *Administrative Science Quarterly* **30**: 160–197.
- Mintzberg H, Pascale RT, Goold M, Rumelt RP. 1996. The Honda effect revisited. *California Management Review* **38**(Summer): 78–117.
- Mintzberg H, Waters JA. 1982. Tracking strategy in an entrepreneurial firm. *Academy of Management Journal* **15**: 465–499.
- Nelson RR, Winter SG. 1982. *An Evolutionary Theory of Economic Change*. Harvard University Press: Cambridge, MA.
- Ouchi W. 1979. A conceptual framework for design of organizational control mechanisms. *Management Science* **25**: 833–848.
- Pascale RT. 1984. Perspective on strategy: the real story behind Honda's success. *California Management Review* **26**(Spring): 47–72.
- Pascale RT. 1999. Surfing the edge of chaos. *Sloan Management Review*, Spring: 83–94.
- Payne B. 1957. Steps in long-range planning. *Harvard Business Review* **35**(2): 95–101.
- Platt WJ, Maines NR. 1959. Pretest your long-range plans. *Harvard Business Review* **37**(1): 119–127.
- Quinn JB. 1961. Long-range planning of industrial research. *Harvard Business Review* **39**(4): 88–102.
- Ramanujam V, Ramanujam N, Camillus JC. 1986. Multi-objective assessment of effectiveness of strategic planning: a discriminant analysis approach. *Academy of Management Journal* **29**(2): 347–472.
- Rigby D. 1999. *Management Tools and Techniques*. Bain: Boston, MA.
- Romanelli E, Tushman ME. 1994. Organizational transformation as punctuated equilibrium. *Academy of Management Journal* **36**: 701–732.
- Schoemaker PJ. 1993. Multiple scenario development: its conceptual and behavioral basis. *Strategic Management Journal* **14**(3): 193–213.
- Schoemaker PJ. 1995. Scenario planning: a tool for strategic thinking. *Sloan Management Review* **23**(2): 25–34.
- Simons RL, Weston HA. 1990. MCI Communications Corp.: planning for the 1990s. Case number 1–90136, Harvard Business School: Boston, MA.
- Sinha DK. 1990. The contribution of formal planning to decisions. *Strategic Management Journal* **11**(6): 479–492.
- Slater R. 1999. *Jack Welch and the GE Way*. McGraw-Hill: New York.
- U.S. House of Representatives, Committee on Science and Technology. 1976. *Long Range Planning*. U.S. Government Printing Office: Washington, DC.
- Van Der Heijden K. 1993. Strategic vision at work: discussing strategic vision in management teams. In *Strategic Thinking: Leadership and the Management of Change*, Hendry J, Johnson G, Newton J (eds). Wiley: New York; 137–150.
- Williamson OE. 1975. *Markets and Hierarchies*. Free Press: New York.
- Williamson OE. 1985. *The Economic Institutions of Capitalism*. Free Press: New York.
- Wilson I. 1994. Strategic planning isn't dead—it changed. *Long Range Planning* **27**(4): 12–24.
- Wrap HE. 1957. Organization for long-range planning. *Harvard Business Review* **35**(1): 37–47.