Limited analysis of the adequacy of the strategic planning in the United States wood products industry

Patricia A. McCarty

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A LIMITED ANALYSIS OF THE ADEQUACY OF THE STRATEGIC PLANNING IN
THE UNITED STATES WOOD PRODUCTS INDUSTRY

By

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B.A., St. Olaf College, 1967

Presented in partial fulfillment of the requirements for the degree of
Master of Business Administration
UNIVERSITY OF MONTANA
1981

Approved by:

Chairman, Board of Examiners
Dean, Graduate School

Date 3/24/81
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CHAPTER I

PURPOSE AND ORGANIZATION

Statement of Objectives

The purpose of this research paper is to analyze strategic planning in the United States wood products industry. The first objective is to develop a strategic planning model and to evaluate the adequacy of strategic planning vis-à-vis the developed strategic planning model. The second objective is to derive an adequate strategic planning model for an organization in the United States wood products industry. The third objective is to use the derived model as the basis for analyzing the current strategic planning being done in the United States wood products industry.

The research is a "limited" research effort in that it is a first-time study done at a specific point in time in which an analysis of the strategic planning of the wood products industry is performed. This research has no prior work to use as a comparison with the research being done. Also, this research is not a comprehensive analysis of the entire wood products industry but rather an examination of arbitrarily selected organizations in the wood
products industry. Therefore, there will be constraints placed on the conclusions of this study based on the research methodology used, which is explained in Chapter II.

**Definition of Key Terms**

The following definitions were selected because they are crucial to the perspective of this paper. "Clear definition reduces the semantic difficulties and clarifies the logical structure of a theory."¹

**Strategic Planning**

Strategic planning is a formally structured decision making process. In strategic planning, an organization selects a predeter­mined course of action from the present into the long-range future. The initial phase in strategic planning is to identify and recognize the "strategic issues"² or crucial variables for the organization. Crucial variables are those long-range indicators or factors in the environment whose variations will have a significant impact on the organization. The strategic planning process should incorporate the hierarchy of planning—purposes, goals, objectives, policies, procedures, rules, and budgets. Effective planning must be future-oriented, innovative, flexible, consistent, and creative. It should also involve action.³ The strategic planning process should also be dynamic and continuous. Most importantly, though, it must be incorporated into the organization as a viable and integral part. The interval of twenty years is the
minimum time frame for the strategic planning process which takes the planning process beyond the operational or short-range level. The interval of twenty years provides the necessary perspective for thinking about the future; it facilitates the separation of the future from the past and present. This freedom from the past gives the planners flexibility in evaluating the future. The strategic planning process must be a rational, systematic, and integrative format for the collection of relevant data. The strategic planning process should also provide the framework for the identification of the systems interaction of the data. The strategic planning process is the tool for making current decisions based on a sophisticated evaluation of the future; this tool requires certain skills.

"Strategic" means that the very nature of the organization is involved; it describes the essence of an entity. Also implicit in the word "strategic" is the assumption that the top levels of an organization are committed to the strategic planning process and to the dynamic intergration of the process into the organization. Strategic planning is the determination of what the organization is going to be in the present and in the future. Strategic planning is an integrative activity which seeks the optimum organizational effectiveness vis-a-vis its environment.

Adequate

Adequacy refers to a minimal level of planning for the future that will make an organization socially and economically appropriate for the environment. Social adequacy is the awareness
of the relationship between the enterprise and its environment and
the socially accepted adoption of the enterprise to its environment.
Economically, adequacy is the viability of the organization.
Adequate strategic planning encompasses the strategic planning done
by the organization and the evaluation of the strategic planning
which was done: was it done?, how well was it done?, and was it
made a dynamic and integral part of the organization?

United States Wood Products Industry

Wood products are defined as commercial roundwoods of
sawlogs. Products derived from commercial roundwoods are plywood,
lumber, and particle board. Lumber refers to roundwood that has
been sawed or split into planks or boards. Wood products may come
from hard- or softwood trees. The wood products industry is composed
of those organizations that are involved in the manufacture of wood
products. The United States wood products industry consists of
public and private organizations which are involved, associated,
or concerned with wood products in the United States. For simplicity
sake, the term "wood products industry" will be used for the
United States wood products industry for the remainder of this
paper.

General Background Information

Strategic Planning

Planning has been performed to some degree by organizations
for centuries. Most organizations do some degree of thinking about
what they are going to do in the future, particularly in the financial area. Organizations have found that to remain appropriate, their time horizons have had to be extended. But remaining appropriate to the environment requires more than capital budgeting on the organization's part. To remain appropriate, an organization has to critically analyze what it is, why does it exist, and where it is going. **Strategic planning is more than developing pro forma financial statements.** In strategic planning, the essence of an organization is formulated. Because the future characteristics of an organization are established, strategic planning must encompass a long-range perspective. Strategic planning takes planning out of the traditional functional business area and places it as the origin of the planning process. As the world has become more complex, so has the planning process.

Since the Industrial Revolution, organizations have had to do more advanced planning. The acceleration of change occurring in an organizational environment has mandated a more careful scrutiny of what the future may be. The concept of formal strategic planning has rapidly matured during the last two decades.

The initial works on the subject are those of Alfred D. Chandler, Jr., Kenneth Andrews, and H. Igor Ansoff. Chandler's book is a pioneering work on corporate strategic development; Andrews concentrated on the role of top management in policy and strategy. Ansoff makes a serious inquiry into the rationale theory, and processes of corporate growth strategy. Recent writers, notably C. Roland Christensen, William E. Glueck, Thomas J. McNichols, and Charles W. Hofer, have made significant contributions through their textbooks and research findings, and their work provide broader interpretations of the framework.6
United States Wood Products Industry

Wood products and pulp and paper are the two major divisions of the forest products industry. The primary raw materials for the wood products industry have been softwoods. However, technologies have and are being developed to use hardwoods. Because the wood products industry depends upon the forest for its supply of raw materials, the following statistics will provide a perspective of the resources available to the wood products industry.

About 740 million acres or 33 percent of the nation's land is forest. Nearly 488 million acres is classified as commercial forest land. The commercial forest land is divided among three primary groups: farmers and other private owners who own approximately 58 percent or 284 million acres; forest industry's organizations which own nearly 14 percent or 68 million acres; and public land ownership which control 28 percent or 137 million acres. The National Forest System contains 89 million acres of commercial forest land and is managed by the Forest Service, which is under the Department of Agriculture. More than three million individuals own the 284 million acres of private, non-industrial forest, many of whom are small owners. Some small owners own less than ten acres. The following table, Table 1, gives a graphic breakdown of Commercial forest ownership by region.

Predominating the nation's inventory of timber is softwood. Because productivity varies among the forests, cubic feet is a more meaningful measurement of timber inventories than acres. Growing
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<th>Private Non-industrial</th>
<th>Public</th>
<th>National Forests</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td>North</td>
<td>17,521.8</td>
<td>108,635.3</td>
<td>30,106.6</td>
<td>9,491.1</td>
<td>156,263.7</td>
</tr>
<tr>
<td>South</td>
<td>36,009.1</td>
<td>145,688.8</td>
<td>18,637.4</td>
<td>11,543.5</td>
<td>200,335.3</td>
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<td>Rocky Mtn.</td>
<td>2,095.6</td>
<td>14,798.9</td>
<td>43,483.4</td>
<td>36,476.9</td>
<td>60,368.8</td>
</tr>
<tr>
<td>Pacific</td>
<td>12,349.2</td>
<td>14,034.6</td>
<td>44,374.3</td>
<td>31,495.7</td>
<td>70,758.1</td>
</tr>
<tr>
<td>Coast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>67,975.6</td>
<td>283,148.6</td>
<td>136,601.7</td>
<td>89,007.2</td>
<td>487,725.9</td>
</tr>
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stock and sawtimber is the classification unit that will be used in stating timber inventories. Softwoods account for 64 percent of the growing stock and sawtimber inventories in the forests. 10

Private, nonindustry commercial forests contain 22 percent of the softwood sawtimber and supply about 30 percent of the harvest. Industry-owned forest lands contain 16 percent of the softwood sawtimber inventory and supply 37 percent of the harvest. The federal government owns 57 percent of the total inventory of softwood sawtimber, of which 51 percent is contained in the National Forests and is managed by the National Forest Service. 11

The Pacific Coast contains 48 percent of the softwood growing stock and sawtimber inventories. 12 In the Pacific Coast area, the National Forest accounts for approximately 45 percent of the commercial forest land, 13 and 60 percent of the national softwood growing stock and sawtimber inventory. 14 "In 1976 Western softwood inventories provided for about two-thirds of the timber used to manufacture softwood plywood and two-thirds of the logs used for softwood timber." 15 (See the following table, Table 2, for softwood inventory.)

Lumber and plywood are used in the framing and sheathing for 90 percent of all United States single-family homes. 16 "Softwood sawtimber is the timber most used to make lumber, plywood, and other building products." 17 In the past decade, lumber's position as the most significant use of timber has been seriously challenged by pulpwood. 18

Historic research and development expenditures in the wood products industry have lagged vis-a-vis other industries. 19 Imports
<table>
<thead>
<tr>
<th>Area</th>
<th>Forest Industries</th>
<th>Private Non-industrial</th>
<th>Public</th>
<th>National Forests</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>12,844.7</td>
<td>23,840.3</td>
<td>8,848.1</td>
<td>3,321.9</td>
<td>45,533.1</td>
</tr>
<tr>
<td>South</td>
<td>23,291.6</td>
<td>61,463.8</td>
<td>12,049.3</td>
<td>8,245.8</td>
<td>96,804.7</td>
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<tr>
<td>Rocky Mtn.</td>
<td>5,126.0</td>
<td>14,362.5</td>
<td>75,446.3</td>
<td>65,050.8</td>
<td>94,934.8</td>
</tr>
<tr>
<td>Pacific</td>
<td>32,247.1</td>
<td>24,054.3</td>
<td>162,826.5</td>
<td>131,224.3</td>
<td>219,127.9</td>
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<tr>
<td>Coast</td>
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<td></td>
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<tr>
<td>Total</td>
<td>73,509.4</td>
<td>123,720.9</td>
<td>259,170.2</td>
<td>207,842.8</td>
<td>456,400.5</td>
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NOTE: Columns and/or rows may not add to totals because of rounding.

accounted for a significant portion of the domestic market. "The 1976 imports represented more than a fifth of the total United States consumption of timber products. In the mid-1970s, imports of pulp products amounted to 30 percent of the United States consumption (of pulp products)."²⁰

Limitations of the Study

Secondary data were the only types used in the research. The analysis of the strategic planning currently being done in the wood products industry was done from a business management perspective versus from a natural or forest resource management one. The analysis of the data was performed vis-a-vis the derived wood products industry strategic planning model.

It is also recognized that this research is not a definitive study in strategic planning. Part of the overall purpose of the research study is to re-define, clarify, and expand on previously published strategic planning models.

This research does not attempt to be a comprehensive study of the strategic planning in the wood products industry; it is a limited research effort. Rather, it attempts to analyze the strategic planning of the wood products industry from a non-forest management perspective. It was recognized that during the organization of the research that there would be areas where data were not available or were not obtained. These areas will be noted.
Another basic limitation of the study is found in the descriptive research methodology used. The primary focus was on the search for knowledge of strategic planning and the application of that knowledge. The research study was a search for insights into strategic planning and the wood products industry. The compilation of statistical facts was not one of the fundamental objectives of the research.

Nature and Order of Presentation

Chapter I gives a broad overview of the research study. A discussion of the methodology used follows in Chapter II. Presented next in Chapter III is a review of existing literature of strategic planning and the current strategic planning done by the wood products industry. The first research question of adequate strategic planning is discussed in Chapter IV, the general strategic planning model is developed in Chapter IV, Chapter V is the second research question where an example of a strategic planning model for an organization in the wood products model is presented. The analysis of the current strategic planning in the wood products is the third research question and is found in Chapter VI. This analysis is done vis-a-vis the strategic planning model in Chapter V. In Chapter VII, the general conclusions of the research are given. The general strategic planning model and the glossary are located in the appendices.
FOOTNOTES


2Ibid., p. 9.


4Ibid., p. 27.

5Ibid., p. 24.

6Chang and Compo-Flores, Business Policy and Strategy, pp. 3-4.


9U.S. Department of Agriculture, RPA Assessment, p. 306.

10Ibid., pp. 307-308.

11National Forest Products Association, Where Will Tomorrow's Lumber and Plywood Come From?, p. 3.

12U.S. Department of Agriculture, RPA Assessment, p. 310.

13Ibid., p. 306.


17 Ibid., p. 3.
19 Ibid., p. 100.
CHAPTER II

CONCEPTUAL FRAMEWORK AND METHODOLOGY

Research Methodology

This paper follows the descriptive research methodology. Descriptive methodology is the system of the description of something and of the collection of data for a definite purpose.\footnote{21}

Descriptive studies differ from exploratory studies in the rigor with which they are designed. Exploratory studies are characterized by flexibility, while descriptive studies attempt to obtain a complete and accurate description of a situation. Formal design is required to insure that the description covers all phases desired.\footnote{22}

The formal design begins with the statement of the research questions. A research question is a major, broad general question. It provides the means of obtaining the required information for the purpose of the research.\footnote{23} From the research question, investigative questions are specific questions which provide the framework for the answering of the research questions.\footnote{24} An investigative question may have its own sub-investigative questions; therefore, there may be several sub-levels of investigative questions. The hierarchy of investigative questions should adhere to the analytical reasoning process to insure its consistency. An integral part of the research
process is the definition of key words and/or concepts. These definitions are strategic in providing a clear and uniform understanding of the research. (See Appendix B - Glossary.)

Also part of the research design is how the actual research is conducted vis-a-vis the variables which are being researched. Any research is based upon variables upon which more information is desired. The gathering of the additional information about the variables is the focus of the research.

By experiment we refer to that portion of research in which variables are manipulated and their effects upon other variables observed.25

The variable which is manipulated is called the experimental variable.26 In this research, the experimental variable is adequate strategic planning. The current strategic planning being done in the wood products industry is "the other variable being observed in the research." The experiment in this research is the comparison of the adequate strategic planning model developed in Chapter V with the current strategic planning being done in the wood products industry.

The validity of an experiment and the valid inferences that can be made from the experiment depends upon the experimental design.27 The experimental design is how the "other variable being observed" is compared to the experimental variable. In this research, the experimental design is how the current strategic planning of the wood products industry is compared to the adequate strategic planning model as developed in this paper. In other words,
the experimental design is the frame of reference from which an observation is made of the effects of an experimental variable on the other variable which is being observed. In this research, observations are made on the effects of a comparison of the adequate strategic planning model developed and on the strategic planning currently being done in the wood products industry. There are two types of validity connected with an experimental design. The internal validity of an experiment is the controlling of the non-experimental or extraneous variables in an experiment so that it can be ascertained whether the introduction of the experimental variables make any difference in the experiment. The extraneous variables have to be controlled in the experimental design so that they are not confused with the stimulus from the experimental variables. There are eight extraneous variables which might effect the internal validity of an experimental design.

1. **History**—the events which occur between one observation and the next observation which could cause a difference in an experiment which is not attributable to the introduction of the experimental variable.

2. **Maturation**—this term is used here to cover all those biological or psychological processes which systematically vary with the passage of time, independent of specific external events.

3. **Testing**—the actual process of measuring or observing something may change that which is being measured; the act of observing or measuring may cause a response which is not from the experimental variable.

4. **Instrumentation**—autonomous changes in the measuring instrument which might account for the difference between two observations or measures; a change in the measurement instrument or observers may produce a response which was not due to the introduction of the experiment variable.
6. Selection—the process of choosing respondents for the comparison group.
7. Mortality—loss of respondents from the comparison group.
8. Selection-maturation interaction—which in certain of the multiple-group quasi-experimental designs is confused with, might be mistaken for, the effect of the experimental variable.30

The extraneous variables which effect the internal validity of an experimental design are those "factors which by themselves could produce changes which might be mistaken for the results of the experimental variable."31

External validity is concerned with the question of generalizing the results of the experiment to some larger population—can the results obtained from the experiment be inferred to some other group not contained in the experiment. External validity has to do with going from a sample to the population from which the sample was drawn. "The threats to external validity...can be called interaction effects, involving the experimental variable and some other variable."32 These interactions are threats to the generalizability of the results of an experiment.33

The factors jeopardizing external validity or representativeness...are:
1. The reactive or interaction of testing with the experimental variable. A pretest might increase or decrease a respondent's sensitivity or responsiveness to the experimental variable and thus make the results obtained for a pretest population unrepresentative of the effects of the experimental variable for the unpretested universe from which the experimental respondents were selected.
2. The interaction effects of selection biases and the experimental variable.
3. Reactive effects of experimental arrangements which would preclude generalization about the effect of the experimental variable upon persons being exposed to it in nonexperimental settings.
4. Multiple-treatment interference, likely to occur whenever multiple treatments are applied to the same respondents, because the effects of prior treatments are not usually erasable.

The experimental design of this research is a "one-shot case study...in which a single group is studied only once, subsequent to some agent of treatment presumed to cause change." The one-shot case study provides a snap-shot of a group at a specific point in time. Because there is no history, an explicit comparison cannot be made. The constraints placed on the conclusions of the one-shot case study is that all that can be said is that at a particular point in time, this is what happened. No comment can be made as to what has happened in the past or what will happen in the future.

The extraneous variables which effect the internal validity of the one-shot case study are history, maturation, selection, and mortality. For this research, the extraneous variables or biases which will effect the conclusions are history, maturation and selection. History is an extraneous influence in this research because of the significant relationship between the general economic activity and the wood products industry. Because of the scope of this research, the perishable nature of some of that data, and the type of data obtained, some information that had been gathered had expired before the end of the research was reached. Maturation effected the conclusions because as the research progressed, the natural process of being more sophisticated about the research
subjects took place. Selection is the most significant extraneous variable to effect the conclusions. The selection process was not done on a random basis and thus the selection process introduced a significant bias as to what information was obtained. Mortality was judged not to have an effect on the research as none of the selected organizations in the wood products industry was deleted from the research. The external variable which can effect the conclusions of a one-shot case study is the interaction of the experimental variable and selection. For this research, this translates into an effect between the adequacy of strategic planning and the selection of the data. The interaction between selection and adequate strategic planning means that the conclusions drawn from the analyses performed in this research cannot be extrapolated to include other wood products organizations that were not reviewed. The conclusions of this research will be limited to the differences, if any, of the strategic planning model developed and the strategic planning being done in the examined wood products organization at a specific point in time. No comparisons can be made because no explicit benchmarks were established in the research or in the experiment because of the experimental design used—the one-shot case study.

The experimental design in a research places constraints on the conclusions which may be drawn from the research and on the generalizations from those conclusions. The experimental design will
also indicate the weaknesses in the research question or questions.

From the discussion of research methodology, a discussion of the research questions follows.

In this paper, the research questions encompass the major areas of the research. Each research question reflects a specific objective of the research. The objectives are:

1. To develop a strategic planning model and its adequacy evaluation criteria.
2. To derive an adequate strategic planning model for an organization in the wood products industry.
3. To do a limited analysis of the current strategic planning being done in the wood products industry vis-a-vis the derived model.

Statement of Research Questions

Research Question: WHAT IS ADEQUATE STRATEGIC PLANNING?

Preparatory to the analysis of the adequacy of the strategic planning in the wood products industry, a general strategic planning model must be developed with its adequacy criteria. This first research question reflects the first objective of this paper of developing a strategic planning model and its adequacy criteria. Also, this research questions provides the foundation for the remainder of the paper.

Research Question: WHAT WOULD BE AN EXAMPLE OF ADEQUATE STRATEGIC PLANNING FOR AN ORGANIZATION IN THE WOOD PRODUCTS INDUSTRY?

From the general model developed in the first research question, an appropriate strategic planning model for an organization in the wood products industry must be derived, along with its
associated adequacy criteria. This second research question reflects the second objective of deriving an adequate strategic planning model for an organization in the wood products industry. The objective is obtained by constructing a specific strategic planning model from the format provided in the general model.

Research Question: HAS THE CURRENT STRATEGIC PLANNING WHICH IS BEING DONE IN THE WOOD PRODUCTS INDUSTRY BEEN ADEQUATE?

The previous two research questions have built the framework for analyzing the strategic planning in the wood products industry. This third research question reflects the third objective of actually doing an analysis of the strategic planning in the wood products industry. The model derived in the second research question was the standard for the analysis.

Data Sources

Sources include data from wood products companies, wood products trade associations, forestry schools, the federal government, two computer searches done by the Congressional Research Service of the Library of Congress, a computer search done by Abstract Information Digest Service (AIDS) of the Forest Products Research Society, Resources for the Future, Worldwatch Institute, the University of Montana, AFIT Extension, and the University of Montana inter-library loan service. Only secondary data were obtained. Information was requested from the Congressional
Clearinghouse for the Future but none was made available. Only a limited number of citations from the computer searches were judged to be appropriate to the research. Some of those citations were not obtainable. Requests to wood products companies brought no primary data.

In the initial phase of the research, a clear separation of the forest product industry was made between wood products and pulp and paper. As the research progressed, it was found that for major forest products organizations, a clear distinction was not often possible because of the integration of these organizations.

In the development of the investigative questions, it was anticipated that there would be questions for which data was not available, either because it was privy information or because it had not been generated. These areas will be noted in the paper as they appear.

The conclusions reached from the research questions will be constrained by the breadth and depth of the investigative questions and by the data that were gathered. In the analysis of the public sector of the wood products industry, only the federal government was reviewed. Such agencies as state, Bureau of Land Management, American Indians were not part of this limited analysis.

22. Ibid.


24. Ibid.


26. Ibid., p. 6.

27. Ibid.

28. Ibid., p. 5.

29. Ibid.

30. Ibid.

31. Ibid., p. 16.

32. Ibid.

33. Ibid., p. 17.

34. Ibid., pp. 5-6.

35. Ibid., p. 6.

36. Ibid., p. 8.

37. Ibid.
CHAPTER III

REVIEW OF EXISTING LITERATURE

Strategic Planning

Summary

Four basic strategic planning models were reviewed.

In their book, *Organization and Management: A Systems Approach*, Kast and Rosenzweig have four major areas in their strategic planning process: premises, plans, actions, and start on new cycle. (See following table, Table 3, for Kast and Rosenzweig's model.) The last area insures the continuity and the continuum of the process. Kast and Rosenzweig view strategic planning as "an integral part of the total planning process. Strategic planning deals with decisions regarding the broad technological and competitive aspects of the organization, the allocation of resources (human and material) over an extended period, and the long-run integration of the organization within its environment." 38

Recognizing that the time span of strategic planning is relative depending upon the type of business an enterprise is engaged in, Kast and Rosenzweig state generally that long-range refers to five-, ten-, or fifteen-year intervals. "For a firm engaged in
TABLE 3
Kast and Rosenzweig's Strategic Planning Model

growing timber as a crop, the outlook may approximate one hundred years."

The steps in Kast and Rosenzweig strategic planning process are:

1. Appraising the future political, economic, competitive, or other environment.
2. Visualizing the desired role of the organization in this environment.
3. Perceiving the needs and requirements of the clientele.
4. Determining changes in the needs and requirements of other interested groups—stockholders, employees, suppliers, and others.
5. Providing a system of communication and information flow whereby organizational members can participate in the planning process.
6. Developing broad goals and plans which will direct the efforts of the total organization.
7. Translating this broad planning into functional efforts on a more detailed basis—research, design and development, production, distribution, and service.
8. Developing more detailed planning and control of resource utilization within each of these functional areas—always related to the overall planning effort.

"Strategic planning relates primarily to setting goals and identifying key elements in master or comprehensive plans." Goals are defined as objectives, purposes, missions, deadlines, standards, targets, quotas, and so forth.

Kast and Rosenzweig's strategic planning model contributed to the model developed in this paper primarily in the area of the systems interaction that occurs in the strategic planning process. The systems interaction recognizes that any alteration that occurs during the strategic planning process will have an impact throughout the total process. When a deviation occurs, the results of that deviation must be systematically worked through the complete
strategic planning process to insure the continuity, consistency, and effectiveness of the strategic planning process. The futurity, creativity, implementation, and feedback aspects of strategic planning were other insights gained from this model.

Another strategic planning model is presented by William F. Glueck in *Business Policy: Strategy Formation and Management Action*. (See following table, Table 4.) Glueck defines strategic planning as "that set of decisions and actions which leads to the development of an effective strategy." Glueck defines strategy as "a unified, comprehensive, and integrated plan designed to assure that the basic objectives of the enterprise are achieved."

The two major components of Glueck's model are the "strategic planning elements" and the "strategic planning process." The strategic planning elements are the enterprise objectives and the enterprise strategists. The enterprise objectives are those basic economic and social purposes for which the enterprise exists. The enterprise strategists are the board, top managers, corporate staff, and/or people who are involved in the strategic planning process.

The strategic planning process is composed of appraisal, choice, implementation, and evaluation. Appraisal is the identification of the environmental factors and of the determination of the enterprise's comparative or strategic advantage factors. "Environmental factors are characteristics external to the enterprise which experts feel the executives should monitor." These include
TABLE 4
Glueck's Strategic Planning Model

<table>
<thead>
<tr>
<th>Strategic Planning Elements</th>
<th>APPRAISAL</th>
<th>CHOICE</th>
<th>IMPLEMENTATION</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise objectives</td>
<td>Determine present and potential threats and opportunities in the environment</td>
<td>Consider enterprise's comparative advantages</td>
<td>Choose the strategy</td>
<td>Develop medium- and short-range policies, plans, and programs</td>
</tr>
<tr>
<td>Enterprise strategists</td>
<td>Search the environment for governmental, technological, competitive, and social factors</td>
<td>To assure that the most appropriate strategy is chosen</td>
<td>To match structure to strategy</td>
<td>To assure strategy will achieve objectives</td>
</tr>
</tbody>
</table>

general environmental factors, supplier factors, and markets factors. Strategic advantage factors are those market, operations, finance and accounting, personnel and management, and ideational resources "where the firm has significant strengths so that it can exploit the opportunities and meet the threats of the environment." The results of the appraisal is the "strategic advantage profile."

Choice is the second phase in Glueck's strategic planning process. Choice is the identification of alternative strategies and the choosing of the most appropriate strategy. Strategic alternatives are characterized by being either active or passive alternatives, flexible or programmed alternatives, or business definitions and alternatives. Glueck states that the major strategic alternatives are ones of stability, combination, growth or retrenchment. "Strategic choice is the decision which selects from among the alternatives considered the strategy which will best meet the enterprise's objectives. The strategic choice involves the selection of criteria, the evaluation of the alternatives against these criteria, and the actual selection."

Implementation is the next phase in Glueck's strategic planning process.

Implementation is the process by which the top managers assures the strategic choice is communicated to the enterprise. The process involves also the organization of people and resources to reinforce the choice. Finally, implementation involves the development of consistent functional policies which will reinforce the strategic choice.
Evaluation is the final phase of the strategic planning process. It is where "the managers compare the results of the strategy (the means) with the level of achievement of the objectives (the ends)." The four steps in the evaluation process are (1) the motivation to evaluate, (2) a feedback system to provide the data for evaluation, (3) criteria for evaluation, and (4) decisions about the outcome of the strategic evaluation.

Glueck's model assisted in the flow of the model developed in this paper, particularly in the need to have clear, distinct phases in the strategic planning model. Insights were also obtained for the strategic profile.

A third strategic model that was studied was one developed by George A. Steiner and John B. Meiner in their book Management Policy and Strategy: Text, Readings, and Cases. (See following table, Table 5.) Steiner and Meiner's planning process is divided into two major phases: strategic planning and tactical planning.

Strategic planning covers: (1) expectations of major outside interest, (2) expectations of major inside interest, (3) the database, (4) the evaluation of the environment and company, and (5) the development of master strategies. With the master strategies, the company determines its "missions, basic purposes, objectives, policies, and program strategies."

Characteristics of the strategic planning process are:

1. The strategic planning process is the place where decisions of the highest significance to a company are made.
TABLE 5

Steiner and Meiner's Strategic Planning Model

2. The time spectrum covered ranges from the very short range to infinity.
3. The process is a continuous activity of top management.  

The translation of the master strategies into operational form is performed in the tactical planning phase. Tactical planning consists of (1) medium-range programming and programs, (2) short-range programming and programs, (3) implementation of plans, and (4) review and evaluation of plans.

Medium-range programming and programs, the first phase in tactical planning, may be defined as the process where specific functional plans are related for specific numbers of years to display the details of how strategies are to be carried out to achieve long-range objectives and company missions. Characteristics of medium-range programming are a time span of five years and coverage of major functional areas.

Results of the medium-range programming form the basis for the short-range planning, which is the second phase in tactical planning. The transition between the two phases is fluid thereby allowing for overlap between medium and short-range programming. Short-range plans can be broad in scope and can include production plans, facilities, work methods, inventory, employee training, job enrichment, management education, negotiations with unions and others. The yearly operation budget summaries are generally refer to short-range plans. Short-range plans focus on the coordination and control of critical internal flows of resources.
The third phase of tactical planning is implementation. Implementation is where action occurs to support formulated plans. This action is governed significantly by the degree of commitment from top management and by how effectively that commitment is communicated throughout the company.

The final phase in the tactical planning phase is the review and evaluation of plans. In this phase, analysis of the plans occur, and necessary revisions made. Revisions are then implemented to maintain the appropriateness of the plans.

The Steiner and Meiner model provided assistance in establishing the clear distinction between planning and programming. Additional perspective of the systems interaction in the strategic planning process was gained. This model also conceptualized the cascading effect of strategic planning; elements in the strategic plan should be found in the detailed short-range plans. After the Steiner and Meiner model, the fourth and final strategic model reviewed was one developed by Gluck, Kaufman, and Walleck.

Frederick W. Gluck, Stephen P. Kaufman, and A. Steven Walleck, in their article, "Strategic Management for Competitive Advantage," did a "systematic examination of the relation between formal planning and strategic performance across a broad spectrum of companies."

For the purpose of this study, "business strategy" was defined as a set of objectives and integrated actions aimed at securing a sustainable competitive advantage. Strategic management was defined as a system of corporate values, planning capabilities, or organizational responsibilities that couple strategic thinking with operational decision making at all levels and across all functional lines of authority in a corporation.
Gluck, Kaufman, and Walleck divided the strategic planning process into four sequential phases, each marked by clear advances over its predecessor in terms of explicit formulation of issues and alternatives, quality of preparatory staff work, readiness of top management to participate in and guide the strategic decision process, and effectiveness of implementation. (See following table, Table 6.) The four phases are basic financial planning, forecast-based planning, externally oriented planning and strategic management.

In Phase I—basic financial planning, organizations develop procedures to forecast revenues, costs, and capital needs to identify limits for expense budgets on an annual basis. Strategic planning is rarely formalized. The statement of a projected earnings growth rate, which may be constrained by financial objectives such as specified debt/equity ratio, may be the only signal that a business strategy exists. The successful execution of Phase I depends significantly on the CEO and the top team.

Forecast-based planning is Phase II of Gluck, Kaufman, and Walleck's model. Phase II consists of extrapolating past trends and trying to foresee the future impact of political, economic, and social forces. "Most long-range or strategic planning today is a Phase II system." The forecast-planning evolved out of basic financial planning by lengthening the time frame involved in the planning process and the incorporation of more advanced forecasting tools. These tools include trend analysis, regression analysis, and computer simulation models.
Gluck, Kaufman, and Walleck's Strategic Planning Model

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Phase IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic financial planning</td>
<td>Forecast-based planning</td>
<td>Externally oriented planning</td>
<td>Strategic management</td>
</tr>
</tbody>
</table>

**Exhibit**

Four phases in the evolution of formal strategic planning

<table>
<thead>
<tr>
<th>Effectiveness of formal business planning</th>
<th>Operational control</th>
<th>More effective planning for growth</th>
<th>Increasing response to markets and competition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Meet budget</td>
<td>Predict the future</td>
<td>Orchestration of all resources to create competitive advantage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Strategically chosen planning framework</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Creative, flexible planning processes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supportive value system and climate</td>
</tr>
</tbody>
</table>

- **Value system**
  - Meet budget
  - Predict the future
  - Think strategically
  - Create the future

Sooner or later plans based on predictive models fail to signal major environmental shifts that not only appear obvious after the fact, but also have a great and usually negative impact on corporate fortunes.  

Planning in forecast based planning has progressed beyond planning done in basic financial planning in the following areas: (1) management is forced to recognize the long-term implications of decisions; (2) management must ponder the potential business impact of discernible current trends; and (3) management must allocate resources more effectively. However, a deficiency in forecast-based planning is that it tends to be static and tends to be focused on current capabilities versus the search for options. "Phase II planning all too easily becomes a mechanical routine, as managers simply copy last year's plan, make some performance short-fall adjustments, and extend trend lines another 12 months in the future."  

The externally oriented planning or Phase III planning is characterized by strategic planners trying to comprehend the changes which occur in the marketplace, trying to recognize the key determinants of business success, and trying to develop a new level of planning effectiveness. "Phase III strategists try to look at their company's product offering and those of their competitors from the viewpoint of an objective outsider." The concept of SBU, strategic business units, emerges for diversified companies in external oriented planning. SBUs are:  

organizational entities large and homogeneous enough to exercise effective control over most factors affecting their business. The SBU concept recognizes
two distinct strategic levels; corporate decisions that affect the shape and direction of the enterprise as a whole, and business-unit decisions that affect only the individual SBU operating in its own environment.69

The crucial difference between forecast-based planning and externally-oriented planning is that in the latter, corporate planners are expected to offer a number of alternatives to top management.70

Strategic management is the final phase in the strategic planning process. Strategic management joins strategic planning and management into a single process.71 The essence of strategic management is the thoroughness with which management has linked strategic planning to operational decisions making. Strategic management is accomplished by means of a planning framework, a planning process, and a corporate value system. The planning framework expedites strategic decisions by establishing the necessary planning levels and assigning in each level explicit planning responsibility to an appropriate individual or group. Suggested planning levels are product/market planning, business-unit planning, shared resource planning, and corporate level planning.72 Stimulating entrepreneurial thinking is the essence of the planning process. While recognizing that entrepreneurial thinking is achieved by having a flexible and creative environment, the planning process directs the entrepreneurial thinking by stressing competitiveness, by focusing on a theme, by negotiating objectives, and by demanding strategic insights.73
The corporate value system is the last component of strategic management. Four common themes found in the value system are:

1. The value of teamwork, which leads to task-oriented organizational flexibility.
2. Entrepreneurial drive, or the commitment to making things happen.
3. Open communications rather than the preservation of confidentiality.
4. A shared belief that the enterprise can largely create its own future rather than be buffered into a predetermined course or corner by the winds of environmental change.\(^7\)

Gluck, Kaufman, and Walleck's model significantly contributed to the model developed in this paper by stating that the strategic planning process has to go beyond the forecast-based planning stage and that there has to be effective integration between strategic planning and functional planning. Although this model recognizes that the strategic planning process has to be flexible and has to allow for creativity, Gluck, Kaufman, and Walleck state guidelines on how to achieve the creativeness and flexibility which is desired in strategic planning.

Other strategic planning models that were reviewed were *Business Policy: Text and Cases* by Roland C. Christensen, Kenneth R. Andrews, and Joseph L. Bower; *Management: A Systems and Contingency Analysis of Managerial Functions* by Harold Koontz and Cyril O'Donnell; and *The Theory and Management of Systems* by Richard H. Johnson, Fremont E. Kast, and James E. Rosenzweig. *Business Policy* contributed to the general concept and overall understanding of strategic planning. From Koontz and O'Donnell,
the concept of strategic design was obtained as well as the assistance in developing the strategic programs, strategic controls, derivative decisions, and derivative programs. The Theory and Management of Systems greatly aided in the systems interaction of all the components in the strategic planning process and of the various planning and programming activities that occur during the process.

Critical Evaluation of Literature Reviewed

Overall, something was omitted or was not explained in sufficient detail in the models reviewed that created gaps in the flow of the strategic planning process. Difficulty in the flow of various strategic planning models occurred by starting on a broad basis and then suddenly switching to specifics without a smooth transition. Adequate discussion appeared at the front-end of the macro scene of a model but later discussion of planning and programming was limited. Comparative analyses between the strategic planning models were difficult because each model had its own nomenclature.

All models mentioned future orientation but how to obtain a future orientation was deleted. Basic to the future orientation is the asking of basic and essential questions of what are an organization's fundamental assumptions about the future vis-a-vis its recognized crucial variables. All models failed to start at the origin of the strategic planning process.
In Kast and Rosenzweig's model, the future orientation was found in "values of top management." The values of top management are important because they determine to a significant degree the nature of an organization but Kast and Rosenzweig did not adequately follow through on this concept. Glueck implicitly addressed the future orientation concept in his "enterprise strategists" but was premature in placing the enterprises objectives prior to selecting a strategy. The futurity of strategic planning is found in Steiner and Meiner's model in "expectations of top managers" but again, the discussion was limited.

All models recognized that an analysis of the company and its environment should be performed. However, the analyses suggested were not as systematic and comprehensive as they could be. The analyses also did not establish a framework which could be used during the remainder of the strategic planning process. In Kast and Rosenzweig's model, there was no clear and smooth flow from a company/environment assessment to the planning phase. In Glueck's model, the purpose is established before any environmental or company analysis has taken place and before the consideration of alternatives. There also exists a discontinuity in Glueck's model between choice and implementation. No framework was established that would be followed through the strategic planning process. Steiner and Meiner's analysis of the company vis-a-vis its environment was sufficient but there was no consistency or commonality between the
steps in the model; specific factors could not be traced through the strategic planning process. The flow between the analysis and the next step of master and program strategies is only implicit; a more detailed explanation is needed. Gluck, Kaufman, and Walleck's strategic planning model is the best example of a systematic and comprehensive analysis. This model has a smooth transition into the decision making area.

To some extent, all models recommended only traditional concepts for "strategies" (growth, non-growth, combination, static). The organizational structures also followed traditional functional lines—research and development, finance, production, and so forth. The statement of these traditional concepts inhibit the creativity and flexibility of the strategic planning process. Kast and Rosenzweig's discussion is on a broad, general spectrum but reference is made in the translation of the strategic plans "into functional efforts...research, design, and development, production, distribution, and service." Glueck specifically mentions "the four grand strategies: stability, combination, growth, and retrenchment." Glueck goes on to state that the dominant organization structures are functional, divisional, holding company, adaptive, or other. Glueck also mentions that the key functional areas are operations, finance and accounting, personnel, marketing and logistics, and research and development. Steiner and Meiner suggest the traditional functional areas, but allow the flexibility of an organization to
choose which areas would be most appropriate. Gluck, Kaufman and Wallack again did the best job of allowing for flexibility and creativity in this area. They recognize that what may be appropriate for a business today may not be appropriate for the future. The strategic planning process should not be constrained by the past.

In general, the strategic planning models were either too closely associated with operational or tactical planning or the synthesis of the strategic with the tactical planning was too nebulous. The notable exception was the Gluck, Kaufman, and Walleck's model. The time horizon for most models was too short or too closely linked with capital budgeting.

Conclusions

Although planning in some form has always taken place, the concept of strategic planning has gained momentum since World War II. Organizations are realizing that the rate of change in the environment is accelerating and that survival depends on how adequate they do their planning.

Strategic planning is a combination of art and science. It is therefore not wise to "cook book" strategic planning according to a standardized format. Strategic planning is continually evolving to become more appropriate for its purpose. Perhaps the largest hinderance is the spectrum of meaning it has for its users.
Strategic Planning - Wood Products Industry

Summary

The strategic planning of the wood products organizations reviewed were the federal government (Forest Service), Resources for the Future, Boise Cascade, Champion International, and Georgia-Pacific. The strategic planning of the other public owners was not reviewed because it was judged that the Forest Service, which is responsible for the National Forests and which does the strategic planning for the federal government, dominates and significantly influences the strategic planning done by the other public owners. From the research, it was also judged that the Forest Service was a primary source of data that was used by the organizations in the wood products industry. Thus, the research concluded that the Forest Service has a unique position of having the possibility of significantly influencing the organizations in the wood products industry in their planning by supplying the data upon which the planning is done. Consequently, the validity and reliability of the data published by the Forest Service is crucial for the wood products industry. The Forest Service is responsible for 65 percent of the commercial forests in public land ownership. No review was done of the strategic planning by the wood products trade associations because very little useable data were found in the preliminary review of this literature. Resources for the Future was the only private, non-industrial organization reviewed. Resources for the Future was
judged to be the most appropriate organization because of their focus on the nation's resources. The strategic planning of the commercial wood products organizations reviewed were Boise-Cascade, Champion International, and Georgia Pacific. These companies were evaluated to be representative of the commercial wood products organization in terms of land ownership, location of land, and the degree of integration.

Federal Summary--The Forest and Rangeland Renewable Resources Planning Act of 1974 and the National Forest Management Act of 1976 require that the Forest Service do an assessment of forest and rangeland every ten years. The Forest Service is also required to develop alternative programs every five years, which are based on the assessment. The assessment and programs are then presented to Congress for appropriate action.

After comparing the 1980 Report to the Congress on the Nation's Renewable Resources and the two RPA review drafts--An Assessment of the Forest and Rangeland Situation in the U.S. and Alternative Programs Directions--, discrepancies were found. It was judged prudent to use only the 1980 Report as the most current source of planning done by the Forest Service. The 1980 Report contains a summary of the two supporting documents--the 1980 - An Assessment of the Forest and Rangeland Situation in the U.S. and 1980 - A Recommended Renewable Resources Program. The 1980 Report was extremely difficult to obtain. Local and regional agencies were all using the two RPA Review Drafts and did not have the final
report and supporting documents. Only through a Congressional inquiry was the 1980 Report obtained.

The Assessment and Program done by the Forest Service deals with the issue of forest and range lands, outdoor recreation and wilderness, wildlife and fish, and water. The focus of this research will only be on the forest lands and its resource of timber.

The Assessment is primarily concerned with prospective trends in supply and demand of renewable resources; the economic, social and environmental implications of these trends; the resource base; and the opportunities to manage and use is resource base in ways which will enhance the quality of life present and future generations.76

The Assessment also identifies various means to meet the demands, and for some resources, such as timber, analyzes the costs and benefits. The 1980 Program was based on the findings of the 1980 Assessment and was shaped by extensive public involvement and Department direction.77 The strategic planning of the Forest Service is found in the Assessment and the Program.

The major assumptions upon which the latest Assessment is made are:

1. Population.
3. Disposable Personal Income.
4. Environmental Factors.
5. Energy costs.
6. Capital availability.78

Population has an important effect on the demand for timber because population significantly influences household formation.
Household formation, in turn, affects the demand for the number and types of dwelling. The construction of dwellings then impacts on the demand for wood products, particularly lumber and plywood. Population also influences the size of the labor force, which is a major determinant of the economic activity level of the country. According to the 1979 Bureau of Census projections, the United States population will increase by approximately 81 million by 2030. This figure is based on a declining annual rate of increase. Data were not obtained as to how the Bureau of Census bases its projections.

Population will grow fastest in the South and Pacific Coast regions and to a slightly lesser degree in the Rocky Mountain region. But major concentrations of people will remain in the North Central region and along the Atlantic and Pacific Costs.

The gross national product is included in the major assumptions because changes in the consumption of wood products have been reflected in the changes in the GNP in recent decades. Gross national product is projected to double to $2,780 billion (1972 dollars) by the year 2000 and double again to $6,210 billion by 2030 (1972 dollars) according to a medium projection done by the Bureau of Economic Analysis. The composition of the GNP will alter; manufacturing and construction will decline while transportation, trade, and other services will increase. "These changes are consistent with long established trends." Despite the decline in the relative importance, the projected increases in manufacturing and construction are substantial. With the continued increase in
manufacturing and construction, the demand for raw materials will be great, including those related to energy sources.

Disposable personal income is another important determinant of the demand for wood products. It also influences household formation and the size of dwellings. The historical and relatively constant relationship of disposable personal income to GNP is assumed to remain the same through 2030. Disposable personal income has been approximately 70 percent of GNP since 1929. Data used by the Forest Service were obtained from the Council of Economic Advisors but the projections were done by the Forest Service. The Forest Service projections estimate that per capita disposable personal income will rise to $14,490 (1972 dollars) by 2030, up from $4,291 in 1977 (1972 dollars). This represents an approximate increase of 340 percent. The increase in disposable personal income along with an increase in population translates into a greater demand for wood products by more people with expanded purchasing power.

Environmental restrictions are not enumerated in the 1980 Report. Combining the 1980 Report and the RPA Review Draft - Assessment, it was concluded that environmental restrictions mean institutional and technological changes. Institutional changes are not explicitly stated. The examples given are increased urbanization and increased awareness of the environment. Urbanization creates a demand for large structures, thereby displacing timber products as a construction material with steel, concrete,
and other suitable materials. Increased awareness of the environment has stimulated demand for parks, wilderness areas, and wildlife refuges. Environmental awareness impacts on the National Forest lands because it is primarily with National Forest lands that these demands are satisfied. The 1980 Report states that 47.6 percent of the National Forest and Grasslands are designated as commercial forests. As land is set aside for parks, wilderness areas, and other nonmarket products from the National Forests, some of this set aside land will be commercial forests. Consequently, as nonmarket products are being satisfied, commercial forests in the National Forest System will decline. The decline in the amount of commercial forest land owned by the Forest Service is significant because the Forest Service is the single largest owner of commercial forest land in the U.S.

Technological changes include new products which stimulate demand for non-market uses, like freeze-dried foods-backpacking, wilderness, new glues which will expand the utilization of wood, new hardwood technology for products hitherto not possible from hardwood (hardwood panel products such as plywood), and new technological advances in metals and plastics which will result in a potential displacement of the traditional usage of wood products, such as furniture and containers.

Energy costs affect wood products through their indirect impact on the level of general economic activity and energy's direct impact on wood products usage. "It is apparent that a long
historical period has ended, during which improvement in technology offset the increase in costs associated with the extension of production of energy materials into lower quality and less accessible resources." The 1980 Report concludes that energy costs will rise faster than other prices in general.

Significant amounts of capital will be needed in the future to develop new energy sources, meet environmental protection requirements, provide for general economic activity, and meet the requirements for forest land resources.

For statistical purposes, the Assessment divides the resource base into forest land, range land, and water areas. However, when discussing the supply and demand situation, the 1980 Report categorizes the resources as recreation, wilderness, wildlife, forage, timber, and water. This paper will only focus on timber and forest land. It is appreciated, however, that the demands on forest lands are multiple.

Tables 1 and 2 give statistics regarding the ownership of forest lands in the United States and the placement of the softwood inventory. Softwoods comprise 61 percent of the timber on commercial forests; softwoods are used primarily for lumber, construction timber, plywood, poles, and pulpwood; softwoods are concentrated in the South and West, and hardwoods in the North. Much of the commercial forests in the North are small, private holdings. "Over 50 percent of the softwood sawtimber volume is currently on National Forests in the
Northwest, much of it in unroaded old-growth timber stands."

The 1980 Report discusses timber in a supply and demand context. Although the supply of timber is projected to increase during the next half century, the demand will increase at a faster rate. "During the next 50 years, demand for wood is expected to increase 60 percent under equilibrium price projections. Leading the list of most-sought after products is pulpwood, followed by lumber, plywood, and composition board." From the discussion of the Assessment, which has just been presented, The Report continues with the presentation of the 1980 Program.

The Recommended Program is bound by a high level and a low level of resource production. The High Bound would increase substantially the supply of renewable resources while providing increased protection of environmental values. The Low Bound places renewable resources programs in the context of the current economic situation that calls for constrained Federal spending and so provides for more modest outputs.

Economic analysis, careful environmental considerations, policy judgment response to the current economic outlook, and the Assessment over the long term are reflected in the Low Bound portion of the Program. The High Bound portion was similarly developed but was more reflective of public comments through an earlier and greater increase in production to meet the demands projected in the Assessment.

Under the High Bound portion of the Program, activity in the National Forest System would increase. Timber sales would increase from 11.9 billion board feet in 1981 to 12.5 billion board feet in

The Low Bound portion of the Program is less dynamic. National Forest Service activities would be more constrained in all areas. In the state and private forest activities, the Low and the High bound levels start at relatively the same position but over the projected time frame, the differences increase. The level of research expenditures and manpower is also significantly different between the Low and the High Bound levels. The Pro Forma Low Bound budget is less although the difference is greater in 1985 than in 1995.\(^{94}\)

Table 7, which follows, gives a comparison of the different levels of activities and expenditures between the two programs.
TABLE 7
Recommended Program - High and Low Bound Levels

<table>
<thead>
<tr>
<th></th>
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<td></td>
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<td></td>
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<tr>
<td>Projected National Forest System activities and cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Timber Sales</td>
<td>Billion board feet 12.2</td>
<td>High</td>
<td>11.9</td>
<td>12.5</td>
<td>13.7</td>
</tr>
<tr>
<td></td>
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<td>Low</td>
<td>11.0</td>
<td>12.5</td>
<td>13.0</td>
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<tr>
<td>Reforestation</td>
<td>Thousand Acres 411.3</td>
<td>High</td>
<td>460</td>
<td>470</td>
<td>446</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>345</td>
<td>382</td>
<td>409</td>
</tr>
<tr>
<td>Timber Stand Improvement</td>
<td>Thousand Acres 420</td>
<td>High</td>
<td>338</td>
<td>408</td>
<td>386</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>286</td>
<td>250</td>
<td>253</td>
</tr>
<tr>
<td>Workforce Staff</td>
<td>Thousand Staff Years 40.3</td>
<td>High</td>
<td>52.5</td>
<td>68.2</td>
<td>66.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>52.8</td>
<td>53.5</td>
<td>55.3</td>
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<tr>
<td>Total Appropriated NFS Costs</td>
<td>Million Dollars 1666</td>
<td>High</td>
<td>1666</td>
<td>2359</td>
<td>2300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>1827</td>
<td>1852</td>
<td>1912</td>
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<tr>
<td>State and Private Forest activities and cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timber Reforestation</td>
<td>Thousand Acres 326</td>
<td>High</td>
<td>545</td>
<td>1219</td>
<td>1303</td>
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<td></td>
<td></td>
<td>Low</td>
<td>1079</td>
<td>1149</td>
<td>1376</td>
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<tr>
<td>Stand Improvement</td>
<td>Thousand Acres 275</td>
<td>High</td>
<td>375</td>
<td>742</td>
<td>1029</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>687</td>
<td>943</td>
<td>1207</td>
</tr>
</tbody>
</table>
TABLE 7 – Continued

| Timber Prepared for Harvest | Million Cubic Feet | 225 | High | 237 | 386 | 544 | 670 |
|                            |                   | Low  | 302  | 340 | 346 |
| Total cost – State and Private Forests | Million Dollars | 117 | High | 89  | 117 | 192 | 196 |
|                             |                   | Low  | 136  | 173 | 176 |

Research

| Total Appropriated | Million Dollars | 1085 | High | 111 | 202 | 275 | 320 |
|                   |                 | Low  | 135  | 155 | 171 |

| Workforce | Thousand Staff Years | 3.1 | High | 3.5 | 5.4 | 7.4 | 8.2 |
|           |                     | Low  | 3.6  | 4.2 | 4.5 |

Projected Budget – Total Forest Service (Allocated and Appropriated)

<table>
<thead>
<tr>
<th>Unit of Measure</th>
<th>Range</th>
<th>1981</th>
<th>1985</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Million Dollars</td>
<td>High</td>
<td>1866</td>
<td>2738</td>
<td>2766</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2098</td>
<td>2180</td>
<td></td>
</tr>
</tbody>
</table>

Dollars given in 1978 constant dollars.

Private, non-industry summary--The private, non-industry organization reviewed was Resources for the Future. Resources for the Future is a non-profit organization for research and education in the development, conservation, and use of national resources. The strategic planning done by Resources for the Future may be found in the working paper Forest Policy for the Future: Conflict, Compromise, and Consensus, edited by Marion Clawson. In the chapter, "Conflict, Strategies, and Possibilities for Consensus in Forest Land Use and Management," Marion Clawson proposes three broad strategies or "alternatives for forest land management."

1. A low-intensity high-harvest acreage alternative model.
2. A high-intensity low-harvest alternative or model.
3. Various intermediate courses of action.95

In the low-level high-harvest-acreage model, the "average growth of wood is half the potential of fully stocked natural stands, and much smaller in relation to the potential of intensively managed forests."96 This model is similar to the present forest management model. The present forest management model deals with the forest productivity for wood by "site class." The low-level high-harvest-acreage model focused on wood fiber versus specific products. "Forest site productivity class: a classification of forest land in terms of potential cubic foot volume growth per acre at culmination of mean annual increment in fully stocked stands."97

Site classes I to V refer respectively to lands capable of producing growth of 165-plus, 120-165, 85-120, 50-85, and 20-50 cubic feet of timber per acre per year.98
The standard against which to judge particular ownerships or particular regions is that on an average, the United States forests have a capacity to produce 75 cubic feet of wood annually. However, actual productivity depends upon particular area and species growing on the land as well as the age of the trees.

In the high-intensity low-harvest-acreage model, all steps are taken toward a high intensity of management of the better forest sites provided that there is reasonable prospect of profitability. The high-intensity low-harvest-acreage model's outlines are:

1. Forests on which intensive management is applied. Intensive management is defined as artificial seedlings or planting as a general practice, including site preparation; high order fire control, thinning to extent and on timing necessary, fertilization, and high order genetic improvement.

2. Forests on which natural stand forestry would be applied; these would be either less productive forest lands, or would be owned or operated by owners unable or unwilling to invest management, labor, and capital necessary for high-intensity forest management.

3. Forests on which harvest might be deferred.

4. Forests which might well be "withdrawn" from harvest possibly by inclusion in some sort of reserved area, such as wilderness areas, possibly simply included in timber management plans as acres temporarily withdrawn.

Given these two juxtaposition for the future, numerous intermediate models could be formulated. Considerations which should enter into the formation of a model would include:

1. Economic capability of the site, including response of wood growth to intensification measures.

2. Capabilities of sites for nonharvest services.

3. Degree of compatibility or of trade-off of one kind of output with that of another.
4. Economic markets or demand for various outputs.
5. Cost of different degrees of intensity in forest.
6. Goals and objectives of forest owners.
7. Periods of time over which forest owners were willing to plan.
8. Ability of forest owners to carry out programs of different intensity.

Wood Product Commercial Summary—The three wood products organization reviewed were Boise-Cascade, Champion International, and Georgia-Pacific.

Boise-Cascade's primary purposes are to fulfill the basic human needs of shelter, communications, and packaging. One of the corporate goals is to increase the company's long-term value to its stockholders and to society. Another goal is to manage their financial, capital, timber, and human resources effectively. One of Boise's major financial goals is to become and remain one of the top return on equity performers in the industry. Corporate objectives in support of the above corporate goals are to annually increase the earnings per share of its common stock, to annually increase its return on common equity, to increase its annual dividends, to increase efficiency of its facilities and its resources, and to provide opportunities for employee growth. Included in the corporate policies are to be a fair employer, a dependable supplier, and a constructive community member. An ongoing corporate policy of Boise Cascade is to eliminate marginal operations. Each division must operate profitably so as to earn at least the cost of capital on incremental investment.
Boise's crucial variables upon which the annual planning premises are made are gross national product, demographic data, interest rates, and inflation. Favorable demand for housing and paper are primarily forecasted from demographic statistics.

Champion International purpose is the manufacturing and marketing of products which are basic to the economy: wood for construction, white papers for business and communications, and brown paper for packaging. A crucial variable upon which planning is founded in demographical data. One of Champion's premises is that the future demand for all their major markets will be positive. Other premises are that the North American forest products industry has strength in both its domestic and its international markets and that the industry will continue to be the world's low-cost producer of forest products.

Champion's goals include maintaining a balanced and diversified forest production organization. Other goals are to have high-volume, cost effective facilities and to aggressively expand in forest products. Financial goals include a stronger and improved balance sheet, better margins in fine paper operations, lower overhead expense in building products sales and distribution, and improved operating rates in general. One marketing goal is to improve the product mix. A dominant objective is its current $2.8 billion capital spending program. The capital spending program will include increasing capacity, particularly in white paper, and enlarging Champion's timberlands.
Champion obtains approximately 49% of its domestic fiber requirements from its own or controlled sources and is 67 percent self-sufficient in its energy needs. 105

Georgia-Pacific's major premises are for vigorous business activity and positive demand for its products during the 1980s. Georgia's purpose in all of its basic commodity markets is to have dynamic, well-managed growth. Its basic commodity markets are building materials, pulp and paper, and chemicals. Georgia-Pacific's goals include maximum integration, efficient management, and effective marketing. Another goal is to be the leading market manufacturer and distributor of building materials. Georgia's objectives include the diversification of products and/or acquisition of appropriate businesses, the modernization of its plants, the increased capacity and efficiency of its existing facilities, an expansion of its resource base, and the building of a stronger financial position.

A Georgia-Pacific policy is to pay out at least one-third of its net earnings in dividends. Georgia-Pacific has a decentralized organizational structure. With this structure, it has created a highly productive environment for its employees. Georgia-Pacific also has a policy of being a fast-moving, lean, adaptable company.

Specific planning for Georgia-Pacific's wood products include the expansion of its timberland near its existing manufacturing bases and the application of sound resource management of its timberlands
to insure a continuous supply of timber. Georgia-Pacific is also committed to maximizing the yield of its forest resources through product innovation and manufacturing improvements.106

Critical Evaluation: Strategic Planning of Wood Products Organizations

A critical evaluation of the strategic planning done by the wood products industry will be deferred until Chapter VI. Chapter VI is a limited analysis of the current strategic planning being done by the wood products organizations vis-a-vis the strategic planning model developed in Chapter V. Therefore, only broad, general impressions will be made in this section about the strategic planning currently being done in the wood products industry.

Most of the strategic planning currently being done in the wood products industry is deeply rooted in economic analysis and forecasting. Considerable attention is given to the subject of supply and demand. Sophisticated econometric models and linear programming techniques are utilized in the planning. Underlying all of the models used is the absence of relevant and timely data.

A major constraint in all of the strategic planning done by the wood products industry is the heavy reliance on the data generated by the Forest Service. Yet only in the past decade has the Forest Service been required to do planning (the Assessment) on a routine basis.
Another dynamic constraint is the increasing demand for nonmarket products by aggressive minority groups. Although this social trend is acknowledged, increased productivity from retained commercial forests within the National Forest System, from which most of the lands are being withdrawn, is still to be forthcoming.

The fragmentation of commercial forests and the ineffective strategic planning of the federal government are also major constraints. In general, the wood products industry has not significantly incorporated the impact of technological advances, sociological changes, or political shifts into the strategic planning process. Nor has there been adequate recognition of the systems interaction of these factors with the economic data.

Conclusions - Strategic Planning in the Wood Products Industry

The major focus in the wood products industry has been on natural resource management instead of a combination of natural resource management and business management.

Economic forecasting appears to be the dominating force in the strategic planning being done by the U.S. Forest Service and the other organizations in the wood products industry. Private, non-trade organizations tend to approach strategic planning from a broader perspective than the U.S. Forest Service. Overall, the strategic planning being done is not as sophisticated as it could be. Academic institutions, professional associations, and commercial enterprises are all involved in the advancement of the wood products industry through better land management and research. Significant basic
research has been dynamic but it appears that there has been minimal integration of the implications and/or application into the overall future perspective of the wood products industry. The wood products industry is growing trees today for harvesting in 50 years based on the current premise that wood products will still be significantly used in the residential housing market. Is this a valid premise?
FOOTNOTES - CHAPTER III


40 Ibid., p. 452.

41 Ibid., p. 457.

42 Ibid., p. 439.


44 Ibid.

45 Ibid., p. 11.

46 Ibid., p. 51.

47 Ibid.

48 Ibid., p. 88.

49 Ibid.

50 Ibid., p. 115.

51 Ibid., p. 185.

52 Ibid., p. 227.

53 Ibid., p. 259.

54 Ibid.


56 Ibid., p. 152.

57 Ibid., p. 159.
58 Ibid., p. 161.
59 Ibid., p. 163.
61 Ibid., p. 156.
62 Ibid., p. 155.
63 Ibid.
64 Ibid.
65 Ibid.
66 Ibid., pp. 155-156.
67 Ibid., p. 156.
68 Ibid.
69 Ibid., p. 157.
70 Ibid., p. 158.
71 Ibid.
72 Ibid., pp. 158-159.
73 Ibid., pp. 159-160.
74 Ibid., p. 160.
75 U.S. Department of Agriculture, RPA - Draft Assessment, p. 306.
76 U.S. Congress, House, Committee on Agriculture, Resources Planning Act Assessment, Hearings before a subcommittee on Forests of the Committee on Agriculture, House of Representatives, Statement of R. Max Petersen, May 6, 1980.
78 Ibid., p. 21.


81 Ibid.


83 Ibid., p. 17.

84 Ibid., p. 11.


86 Ibid., p. 4.


88 Ibid., p. 19.


90 Ibid., p. 35.

91 Ibid., p. 36.

92 Ibid., p. 1.

93 Ibid., pp. 7-17.

94 Ibid.


96 Ibid.

97 Ibid., p. 135.
98 Ibid., p. 137.
99 Ibid., p. 140.
100 Ibid., p. 157.
101 Ibid., pp. 175-176.
102 Ibid., pp. 180-181.
CHAPTER IV

STRATEGIC PLANNING MODEL

Strategic Planning Concept

The concept behind strategic planning is the anticipation of the long-range future and the necessary planning for that future. The purpose of strategic planning is the appropriate reaction and adaption of an organization to its environment.

Strategic Planning Purpose

Strategic planning is a formal decision making process where an organization selects a predetermined course of action from the present into the long-term future. The strategic planning process should be continuous and revolving, and not static. Through the strategic planning process, an organization remains economically viable for the present environment and possess the ability to adapt to a changing world while fulfilling its social responsibility to its environment. Prior to and during the actual strategic planning process, decisions must be made as to what are the crucial variables. The crucial variables are those long-term factors in the environment whose slight variance will have extraordinary impact on the organization. The crucial variables are the pivotal point around
which the strategic planning process evolves.

The strategic planning process developed in this paper contains eight phases. The eight phases are:

Philosophical position
Strategic Profile
Strategic Design
Strategic Programs
Strategic Controls
Strategic Comparisons
Derivative Decisions and Programs
Derivative Controls and Comparisons

Each phase builds the foundation for the next and all phases are interrelated.

After the crucial variables have been established, the strategic planning process begins with the philosophical position. The major philosophical position must be a recognition of where an organization stands regarding economic growth. Following the philosophical position, an appraisal of an organization's environment, industry, and itself is performed in the strategic profile. The strategic profile keeps in focus the crucial variables of an organization and provides a historical and contemporary perspective for the remaining of the strategic planning process. Succeeding the strategic profile is the strategic design. The strategic design is composed of the strategic premises and the strategic decisions. The strategic design starts the hierarchy of planning—premises, purposes, goals, objectives, policies, procedures, rules and budgets. The strategic decisions are the strategic purposes, goals, and objectives.
From the strategic design, the strategic planning process continues with the strategic programs. In the strategic programs, the appropriate strategic organizational structure is developed and the strategic policies, procedures, rules and budgets are formulated. The strategic objectives and budgets are two of the inputs into strategic controls. Strategic controls are executed through the strategic management information system and management control system. From strategic controls, the strategic planning process continues to strategic comparisons. Strategic comparisons are where the conclusions and/or results from the strategic profile, the strategic design, and strategic controls are appraised vis-à-vis each other in order to determine whether the organization is remaining appropriate to its present and future environments.

The translation of the strategic plans into day-to-day plans is accomplished in derivative decisions and programs.

Derivative decisions and programs represent the non-strategic/operational hierarchy of planning level. Derivative decisions are the operational purposes, goals, and objectives; the derivative programs are the operational organizational structures, policies, procedures, rules and budgets. The derivative controls and comparisons succeed the derivative decisions and programs.

The adjustment mechanism is the systems interaction influence in the strategic planning process.
Definitions of Terms

Crucial Variables—Crucial variables are those long term factors that significantly impact on the industry and the organization. The characteristics of crucial variables are the following: any variance in these variables will have extraordinary impact on the ultimate existence of an organization; these factors must always remain in sharp focus throughout the entire strategic planning process; these factors are limited in number; and these factors must be able to be quantified. The crucial variables form the cornerstone upon which the strategic planning process proceeds. Without the prudent selection of the critical variables, the strategic planning process flounders in its purpose.

Long-Term—The concept behind long-term is a time frame in the future, the near boundary of which begins with a distant point in time where the future can no longer be predicted with any degree of accuracy. The farther boundary is established by the characteristics of an organization within its industry. The essence of long-term thinking is to go into a relative suspended state where traditional values no longer constrain the thinking process. The nature of long-term enables strategic planners to develop uninhibited scenarios of the future. The wisdom in the strategic planning process comes in the ability to correctly formulate the most likely course of action into the future.
General Strategic Planning Model

The major activities in the strategic planning model are:

Philosophical Position
Strategic Profile
Strategic Design
Strategic Programs
Strategic Controls
Strategic Comparisons
Derivative Decisions and Programs
Derivative Controls and Comparisons

The strategic planning process is based upon the identification, recognition, and quantification of the organization's crucial variables. Without this preliminary step, the strategic planning process will lose its significant impact on the organization. The strategic planning model is found in Table 8, which follows.

Philosophical Position

A philosophical position is the basic value system of an organization. A value system is comprised of those fundamental values of the world's societies and individuals, both historically and contemporary. The statement of an organization's philosophical position is important because of the significant biases which are found in a philosophical position. These biases will have extraordinary influence on the strategic planning process. The philosophical position's biases will place significant constraints on an organization regarding its assumptions about the future. Part of the philosophical position is the recognition of those crucial variables as they pertain to the respective philosophical position.
A clear understanding of the basic orientation of an organization is gained by formally identifying and recognizing the origins of the accepted philosophical position or value system. The recognition of a philosophical position will help provide consistency in formulating the organizational plans. It is appreciated, however, that a stated value system will probably be somewhere between the two basic polar positions.

The fundamental concepts of the two basic polar positions are individualism and socialism. In individualism, the value system is oriented toward the individual whereas in socialism, warm and meaningful relations among people are paramount. The two polar positions may also be associated with the two major U.S. political parties: individualism is associated with the Republicans and socialism is associated with the Democrats. In a social-oriented philosophical position, an example of a constraint placed on the assumptions about the future would be that government control and regulation are good and needed.

A scenario of the basic polar position of individualism may be found in Herman Kahn's World Economic Development: 1979 and Beyond, which represents the Hudson Institute. A scenario of the basic polar position of socialism may be found in Limits to Growth, which represents the Club of Rome.

A discussion of the two basic polar positions will follow, beginning with the Hudson Institute.
Individualism/Pro-Growth Position—The Hudson Institute represents the polar position of pro-growth or individualism. For the remainder of the discussion, the term pro-growth will be used instead of individualism. The Hudson Institute believes that it is better to have economic growth than "to try to stop prematurely the growth process." From the analysis done, the following would appear to be the basic beliefs of the Hudson Institute: rapid worldwide economic growth, Third World industrialization, and the use of advanced (or at least appropriate) technology. Assuming the above basic beliefs, the crucial variables are economics, technology, culture, a historical perspective, and "flexible planning."

Economic growth means economic affluence. Culture means the style, values, national character and attitudes. Society is defined as "the whole."

An economic implication of the Hudson Institute position includes a relatively free market economy based on a fundamental assumption that, if culturally acceptable, self-interest and personal involvement are the most efficient incentives for rational and highly motivated behavior. "Freedom of market choice, market orientation, and market prices would improve the operation of most economies."

The marketplace is flexible, effective, and efficient in making realistic adjustment. It communicates precise and usable information to users as to how much more economical they should be without any political influence and without involving any personalities. The signals are quick, sure, unequivocal, and unarguable. The price is what the price is.
Another economic implication is that the gap, which is the difference of the average incomes of nations,\textsuperscript{115} is the basic "engine" of growth.\textsuperscript{116} "The great abundance of resources of the developed world—capital, management, technology, and large markets in which to sell—make possible the incredibly rapid progress of most of the developing countries."\textsuperscript{117} The Hudson Institute believes that the gap will diminish relatively over time.

A technological implication of the pro-growth polar position is that technology should not be restricted. Technology will have to have good management. The technology to be pursued without constraint will have to be selected on established priorities. Limits that will be placed on technology will be social ones.

A cultural implication of the pro-growth polar position includes the moral responsibility of the developed world to help the poor nations of the world to become reasonably well off (middle income). However, the developed world does not bear any overwhelming moral imperative to decrease the gap or to redistribute the income of the world equally.\textsuperscript{118}

A social implication of the pro-growth position is the need for high morale and commitment of a society. "Effective unity and commitment are more likely to arise from useful economic activities which the people or community concerned own, manage, and gain from than when they work for a state-owned and state-directed organization."\textsuperscript{119}
Because societies are assumed to have some form of growth, positive growth can occur more successfully if "flexible planning" takes place. In flexible planning, guidelines are given rather than the prescribing of everything in detail; ad hoc responses to changing conditions can happen to facilitate the efficient and rapid exploitation of unplanned successes. Fundamental to flexible planning is the concept of "image of the future." "The image of the future would provide coordination, created shared expectations, and give useful planning contexts." A political implication of the pro-growth position is that the "market place has the great virtue of being self-enforcing." Because of this self-enforcement, the government and society would be relieved of much of the enormous and difficult burden of staffing the many administrative and planning positions that are needed in a planned society. Political stability can be created by the economic development and progress of a country if its economic development and progress is seen by the populus as beneficial because of the short and medium-term rewards.

The preceding description was the philosophical polar position of pro-growth as represented by the Hudson Institute. The following description will be the other basic polar philosophical position of limits to growth as represented by the Club of Rome. Socialism/Limits-to-Growth Position—The other polar position is represented by the Club of Rome. The Club of Rome's position is one of limited economic and technological growth. They believe in
an egalitarian society and challenge the concept of progress. The Club of Rome campaigns against economic growth and puts forth a negative prognosis about the current capitalistic cultures.

The crucial variables for the Club of Rome are non-renewable resources, production of food, industrial output per capita, population, and pollution.

An economic implication would be the restriction of the growth of capital by requiring that capital investment equal depreciation. "Although the capital base is maintained at the same level, efficiency of capital goes down since more capital must be devoted to obtaining resources than to producing usable output." Economic activities would be directed at having the income evenly distributed among the world's population. Resource consumption per unit of individual output would be reduced. Society's economic preferences would be shifted toward services and away from industrial production. Production emphasis would be on agriculture goods versus industrial ones. As a result of the limit to growth economic position, there would be a lower final level of capital; industrial capital would have a longer turnover time.

Technological implications are that "technological development of . . . recycling, pollution control devices, and contraceptives will be vital to future of human society if they are combined with deliberate checks on growth." New technological advances must past an intense scrutiny on the impact of their side-affects, on social changes, and on the degree to which the technological advancement limits growth.
Major social implications include the equating of the world's population on an equal status and of a significant mandatory lower fertility rate. Social factors which would also presumably have to be controlled include peace and social stability, education and employment, and steady technological progress.\textsuperscript{131}

Political implications can be summarized by the succinct statement that all crucial variables would have to be deliberately controlled in order to limit growth. Regulations would be pervasive in society. Government would be the dominant, powerful force to bring the world into an equilibrium state.\textsuperscript{132} Government would have the burden of maintaining a delicate balance between the crucial variables, keeping population (births and deaths) and capital (investment rate and depreciation rate) in a constant equilibrium state.\textsuperscript{133}

**Philosophical Position Summary**—An organization begins its strategic planning process by the simultaneous activities of identifying its crucial variables and a statement of its philosophical position. The two basic polar philosophical positions are pro-growth and limits to growth. The Hudson Institute illustrates a pro-growth scenario and the Club of Rome illustrates the limits to growth. An organization will constrain its assumptions about the future by its philosophical position. In general, however, an organizational philosophical position will be a bias toward pro-growth
or limits to growth and will not be aligned to either of the two basic polar positions. After the philosophical position, the strategic planning process continues with the strategic profile.

**Strategic Profile**

A strategic profile is a process where a detailed historical and contemporary appraisal of the environment, of the organization's industry, and of the organization itself is done vis-à-vis the appropriate economic, technological, social and political factors. The purpose of the strategic profile is the recognition of the short-range impact and the long-range implication of the environmental, technological, social and political factors as they are related to the crucial variables. It is also recognizing the systems interaction among the variables. The strategic profile synthesizes these systems interaction into a coherent picture of the future for management.

The strategic profile also establishes the framework for the strategic process by structuring the process along economical, technological, social, and political guidelines. This framework is explicit so that no one sphere of influence (like economics) will dominate the process and so that an adequate perspective is maintained throughout the process. A dominant force in the strategic profile activity must be objectivity. The strategic profile is a comprehensive snapshot of an organization. In the strategic profile, there are several words which have broad meanings. To insure a uniform frame of reference, the following
definitions will be given.

**Definition of Terms**—The definitions which are given in this section are:

- environment
- economics
- technology
- social issues
- political issues

**Environment** is defined as the aggregate of the economic, technological, social and political factors which influence the existence of the organization on both a macro and micro level. It is looking objectively at the world in which an organization exists.

**Economics** refers to those factors or variables which are associated with the production, distribution, and consumption of goods and services. When economics is looked at in the strategic planning process, it will first focus on a macro or national level (worldwide, if appropriate to the organization). Macro economic factors include population, gross national product, and disposable personal income. Both current and historical data will be reviewed and their associated trends analyzed. When economics is being focused upon in the industrial and organizational phase, the economic factors will become narrower and more specific.

**Technology** are those elements or factors which have to do with applied science, engineering, or the methods of using tools and machinery. Again macro aspects of technology will be assessed in the environment and will become more specific during the industrial
and organization appraisals.

**Social issues** are those factors which pertain to the life, welfare, and relations of human beings in a community. The trending in these factors will also be evaluated. Examples of social issues include the concept of work, leisure, abundance, systems of beliefs and modes of conduct.

**Political issues** refer to the general course of factors which deal with government. The term government includes the federal, state, county, and municipality levels. Examples of political issues are tax rates, regulations, laws, monetary policy and fiscal policy.

From the preceding discussion of significant terms that will be used during the rest of this paper, the strategic profile begins with an appraisal of the environment in the environmental profile. **Environmental Profile**—The environmental profile is the assessment of the environmental economics, technology, social, and political issues and trends.

Environmental economics is composed of data of population growth, per capita consumption and expenditures trends, geographic shifts in population, and changes in the population composition. Other issues included in the appraisal of the environmental economics are savings amounts and patterns, inflation, employment, stability of the money system, the movement of general business activity and its leading and lagging indicators, private and public ownership of land, and the broad nature of the competitiveness of the market.
above is intended to be illustrative of the nature of the data that is classified as economics and it is not to be taken as an exhaustive list. Management must decide which the economic data are relevant to the organization. After the selection of the economic factors, a historical overview should be obtained by examining the trends in each factor. Conclusions should be stated regarding the historical and contemporary status of each economic factor. Also, a synthesis of the environmental factors should be given.

After the environmental economics have been reviewed, an appraisal of the state of the art of technology on a macro level takes place. This should be a selective review of the way things are done. A critical audit of technological breakthroughs and their applications are an intrinsic part of this appraisal. Technology includes inventions, techniques, organized knowledge, and the ways of doing things as goods and services are designed, produced, distributed or sold. Scientific development and their implications should also be included. Technology also refers to processes, machines, and tools. Integral to this function is the identification of the time lag between basic and applied technologies. The technological assessment provides a way to comprehend the wide scope of technological changes. Conclusions should be stated as quantitatively as possible.

The third phase in the environmental profile is a study of the environmental social trends. Social trends are those systems
of beliefs, systems of communications, modes of conduct, humanitarian values and man's satisfaction with life, including education, poverty, health and welfare and recreational facilities. Other issues that could be categorized as social are patriotism, religion, attitudes, preferences, and tastes. The appropriate issues should be chosen and trends identified. Social trends would encompass anything pertaining to the life, welfare, or relations of human beings in a community. Implications of the subtle shifts that occur should also be pondered and stated in the conclusions.

The final and fourth area examined in the environment is political trends. The political environment is that complex of laws, regulations and government agencies and their actions. Relevant issues would include defense policy, foreign policy (systems of tariffs, quotas, economic aid, monetary exchange controls, control of imports and exports), political stability, political organizations, changes in the law and other legal changes, legal rules and regulations, labor laws, and tax laws. Other issues considered political would be the type of bureaucracy. Trends and their implications of the significant political trends for the organization must be drawn in this conclusion.

A consolidated conclusion for the environmental profile should sensitize the organization to the systems interaction among the factors reviewed. After the systems interaction has been recognized, the essence of the appraisal should be developed.
From the macro level of the environment, the strategic profile goes to a scrutiny of the organization's industry.

**Industry profile**—The industry profile is the appraisal of an organization's industry in terms of the strategic planning framework—economics, technology, social trends, and political trends.

When examining the industry's economics, the demand and supply for the industry's products should be established. Specific areas to be reviewed are the usefulness and desire for the products, the stability of the desire for the products, and the stage in the product life cycle. Included in the findings should be the relationship between consumers and producers and also should include a list of potential customers. After determining the demand for the products, the supply end should be ascertained. Guidelines for appraising the supply end would include the capacity of the industry, labor costs; material and other costs.

Associated with the industry's supply picture is the competitive conditions of the industry. Included in this should be the market structure and the nature of the companies in the industry—size, type and number of competitors—as well as the diversification within the competitors. Other useful data would be the SIC classifications and their implications. A look should also be taken to see what other industries, if any, are competitors with the organization's industry.

As part of the industry's economic study, information on industrial guidelines and trends should be included. This would
include such data as the industry's pricing policies, promotional activity, product lines, channels of distribution, and the geographic concentration of the firms within the industry. It is also critical to calculate the generic price elasticity of the industry's market as well as the relative price elasticities for competitors.

Financial relationships should also be analyzed. These would include competitors sales volume, profit levels, rate of return on equity, market share, current ratio, working capital return, and sources and uses of funds. An organization should become sensitized to the relationships among these figures and surmise what their competitors' strategies are. The competitors annual reports should be scrutinized for percentage changes in plant investment, cash flow, and dividend policy.

In the industry economics conclusions, specific mention should be made of the key factors for success in the industry. Also, trends of the key factors for success should be addressed as well as the prospects for future sales and profits.

The next step in the industry's assessment is an evaluation of the technological environment. Accurate information on the level of technology and the lag time from basic research to application should be mentioned. The relationship between the technological developments occurring in the macro environment and what is occurring in the industry should be addressed. Also, mentioned should be made of the new basic and applied research
which is being done and the implications of these research efforts. An organization should also be aware of the rate of change of technology and of the internal and external and technological threats to the industry. In the conclusions, the most relevant technological trends should specifically be stated.

In the industry's social appraisal, a specific study should be made of the personalities of the competitors top management. The industry's personality is reflected in the people who run the firms in the industry. Social pressures should also be recognized as well as the perceptions of the consumers vis-à-vis the industry. Environmental issues of ecology, conservation, and pollution should be reviewed as to their relevancy to the industry. Also a part of the social dimension is the issue of organized labor. The conclusions for the social trends for the industry should stimulate an increased awareness of the crucial social issues which significantly impact on the industry. Part of this sensitivity would be trending and implications of the social issues.

Concluding the look at the industry's profile is an assessment of the industry's political trends. Analysis of these should include the government's tax structures; pending legislation and other political activity regarding taxes; laws and regulations having to do with controls, and the monetary and fiscal policy of the government as it is related to the industry. An organization should also keep current on the type of political
influence exerted on its behalf by the industry's trade associations and other interested parties. The conclusions should focus sharply on the crucial political issues, their trends, and their implications.

Taking the individual conclusions from the industry's economics, technological assessment, social and political trends, there should emerge a synergetic profile of the industry which is comprehensive and dynamic. Highlights should poignantly provide unique insights into the industry. The industry profile conclusions should also explicitly identify those key performance areas or crucial measures of success for the industry. Following the industry profile is the organizational profile, the last step in the strategic profile activity.

Organizational Profile--The purpose of the organizational profile is an in-depth look at where the organization has been and where it currently is. The organizational profile is the micro assessment which is done in the strategic profile.

In the organizational profile, the organization recognizes its strengths, skills, and specialization. The organization profile is where the organizations look to see what kind of an enterprise it is through an analysis of its products, markets, technology, and the aspirations and values of its top management.

The organizational economics is the first area that is examined. Items which are studied include the cost position of the organization. The cost position of the organization involves an
examination of the comparative advantages of the organization, its location, the relative efficiency of its plant and equipment, and any unique resource advantage that the organization has. Part of the resource study should include a look at the resource of labor: its costs (fringe benefits, guaranteed annual wages, and unions), its availability, and its quality. Also covered in an organization's cost position is its relative financial strength. To determine its financial strength, a comparative analysis should be performed vis-a-vis the industry's financial ratios and its competitors financial ratios. Included in the financial analysis would be profit levels, plant investment, cash flow, and dividends. Brand elasticity should be computed and compared with the generic elasticity of the industry.

Market position information is also a part of the organization's economics. The relationship of the organization's sales, market share, and profitability to its competitors should be determined and analyzed. Another part of an organization's market position is the relative standing in the market of the organization's products. The strength of the organization in its major markets as well as the size of the organization relative to the industry should be ascertained. Identification of the organization's major competitors is also an essential step.

Next in the organization's economic review should be a statement of the organization's economic objectives, strengths,
weaknesses, and constraints. Items which could be included are bookings, gross margin percentage, key account orders, lost orders, promotional indicators, or new customers.

In the organization's economic conclusions, the recognition of the systems interaction and of the trends of the data should take place.

Topics which should be included in the organization's technological assessment are the organization's statement of the basic technological objectives vis-a-vis basic and applied research. Also, there should be a statement of what are the organization's technological strengths, weaknesses, and constraints. Additional topics which should be addressed in the technological assessment are the type, sophistication, and the length of the development of the new techniques which have occurred in the areas of processing, machines, and tools. In the conclusions for the organization's technological assessment, mention should be made of the influence, implications, and trends of relevant technology in the way the organization designs, produces, distributes, and sells its goods and/or services.

The next area of observation is the review of the organization's social trends. As part of this analysis, there should be a statement of the organization social objectives, strengths, weaknesses, and constraints. The issue of unions should also be addressed; what influences do unions have on an organization and what are the current implications and impacts of union activities.
Other issues which should be a part of this analysis are the organization's employees and its local community; a review of their respective attitudes, expectations, beliefs and customs should also be made. A reference should also be made to the organization's policy on community support and involvement. A thorough perspective of the organization's social trends should be the result of this appraisal. This perspective should be found in the social trends conclusions.

The fourth area of analysis is the organization's political trend assessment. In this, issues which should be surveyed are the specific government laws, regulations, and controls which direct impact on the organization. Examples would be Civil Rights legislation, discrimination laws, OSHA, the Environmental Protection Act, and wage and price controls. A review should also be made on the direct influence of the government fiscal and monetary policies on the organization. Implications and trends of the appropriate political issues should be contained in the organization's political trends conclusion.

Next the organization should look at its organizational structure to determine whether it is serving its purpose and whether the structure is remaining appropriate to the strategic plan. Areas to be examined are the number and types of functional areas, the chain of command, and the span of control. Additionally, the information system should be appraised to find out how the information flows throughout the organization and to ascertain whether
the information is relevant and timely.

Another topic which should be specifically addressed in the organizational profile is the managerial competence of the organization. Facts to be looked for are the sophistication of the managerial skills used, the motivational level of management, and the leadership qualities of the top management. Furthermore, an objective statement of the managerial strengths and weaknesses should be included. If there is a management training program, it should be evaluated. Included in this evaluation should be how is the management training program organized, who is in the program, the degree of success of the program, and the degree of formality of the program. Also included in the management appraisal would be the personality and value system of the top management.

The organizational profile conclusions should be a dynamic scenario of the organization, in terms of where it has been and where it is at a specific point in time. The crucial factors for success should also be specifically given. These crucial factors tend to be similar to those given in the industry profile conclusion, although there could be additions and/or deletions.

Strategic Profile Conclusion—After the three spheres of influence—environment, industry, and organization—are analyzed, a consolidated strategic profile should be developed. From this consolidated strategic profile, an organization should receive a clear, distinct, and comprehensive portrait of itself. This portrait should
facilitate an understanding of the organization's strengths and weaknesses. The strategic profile also helps to determine which forces in each sphere of influence are significant in influencing decisions. Furthermore, the strategic profile conclusions should sensitize the organization to develop insights and wisdom into the future, including the seeing of future opportunities. Having completed the strategic profile, the strategic process continues with the strategic design.

**Strategic Design**

The strategic design is the third major activity in the strategic planning process. Strategic design is where the organization's strategic premises are formulated. Premises are the assumptive statements about what the crucial variables will look like in the future. Premises should be stated in as specific and quantitative terms as possible. The premises provide the parameters and foundation upon which the strategic planning is done. After the strategic premises are stated, the strategic decisions are developed. The strategic decisions are the strategic purposes, goals, and objectives. Strategic purposes define the essence, mission, or essential nature of an organization vis-à-vis its strategic premises. Strategic goals are those significant activities, tasks, or end results which must be accomplished in order to achieve the strategic purposes of the organization. Strategic objectives are the quantification of the crucial variables and are supportive of the strategic goals.
The purpose of the strategic design is to formally explore alternative courses of action and to select a set of strategic purposes by a predetermined decision model. The structure of the strategic design provides for the development of alternatives of action creatively and with perspective. The bottom line of the strategic design is the selection of the best strategic premises and strategic decisions for a specific situation. After the strategic design is completed, it is essential that it be effectively communicated throughout the organization.

The relationship between the strategic profile and the strategic design is that the strategic profile provides a backdrop against which the strategic planning can proceed. In the strategic profile, a historical perspective is gained, including trends and nuances. From the strategic profile, an organization can ascertain how successful its past course of action has been vis-a-vis its philosophical position. The strategic profile should provide an indication of how appropriate the organization has been. The purpose of the strategic design is accomplished by the establishment of the strategic premises for the future. The strategic premises are the benchmarks in the future around which the alternative strategic purposes are developed. With a predetermined decision model, the alternative strategic purposes are evaluated and the selection of the most appropriate strategic purposes occur. After the strategic purposes have been chosen, the strategic goals are formulated. The strategic goals support the strategic purposes.
The strategic objectives are derived from the strategic goals by the quantification of the crucial variables.

The strategic design is the beginning of the hierarchy of planning. The concept of the hierarchy of planning is rooted in the systems concept of planning; planning is a systems design. In the hierarchy of planning, "broad plans are established for the enterprise primarily in the form of goals and objectives at a high organization level. These broad goals and objectives are then translated into more detailed and specific plans, which are further translated throughout the organization to even more detailed and more specific plans. In effect, the planning process is one of spreading out the planning function through an entire organizational system." A classification of this planning from a macro level to a micro level is premises, purposes, goals, objectives, policies, procedures, rules, and budgets.

The strategic planning is done by the top management of an organization and the board of directors. These people are responsible for deciding the essence of an organization and the execution of that essence.

Prior to premising, a critical analysis of the appropriateness of the crucial variables should take place vis-a-vis the conclusions of the strategic profile. This is done to insure that the crucial variables are still appropriate or whether the crucial variables should be altered.
Strategic Premising—Once the crucial variables have been verified and updated, if necessary, strategic premising takes place. The concept behind premising is to establish benchmarks out into the long-range future to serve as the parameters for the remaining strategic planning process. Premising is the statement of those boundaries in terms of the crucial variables.

In premising, assumptions about what the future will look like are made in terms of an organization's crucial variables. Strategic premising is the activity where an organization states what it believes the crucial variables will be in the future. The strategic premises should be as specific as possible in order to provide a firm foundation for the remainder of the strategic planning process and to serve as solid benchmarks against which to judge future performance. Strategic premises should also portray a pessimistic scenario of an organization's future assumptions; a pessimistic orientation will better position an organization for the future than stating an optimistic one. When formulating the strategic premises, the trending of the crucial variables should be reviewed. Strategic premising, however, is more than an extrapolation of trends into the future; strategic premising involves the wisdom of top management. The strategic premises will have more credibility if a confidence level can be established.

Strategic Purposes—From the strategic premises, alternative strategic purposes should be formulated. Strategic purposes are the essence or mission of an organization vis-a-vis its strategic
premises. In the strategic purposes, the essential nature of an organization is defined. The strategic purposes should make an organization appropriate for its present and future environment. Alternative strategic purposes must have an interaction between the strategic premises and the resources of an organization. The alternative strategic purposes also recognize that there are different opportunities available which will be consistent and appropriate with the strategic premises.

**Decision Model**—The task of the organization's decision model is to select which alternative strategic purposes will be optimal for the organization. A decision model provides a conceptual framework for evaluating alternative purposes. The decision model should be a careful and searching evaluation of the purposes. The model should be a balance between quantified factors and qualitative ones. Decision models may be based on a single or multiple bank of criterion. Some criteria used for decision models are research analysis (operations research, simulation, game theory), risk analysis, marginal analysis, and cost-benefit analysis. These criteria are generally tempered with the experience of management. The decision model should be formalized before the selection of the strategic purposes; it should be specific as to what the weight of the qualitative and quantitative criteria are going to be.

Once the strategic purposes have been chosen, consideration should be given to the selection of contingency organizational strategic purposes. One decision which has to be made is whether
the same decision model that was used for the selection of the actual strategic purposes should be used again in the selection of the contingency strategic purposes. If not, then a decision model for the contingency strategic purposes has to be developed. Once the strategic purposes have been selected, the strategic design continues with a statement of the strategic goals.

**Strategic goals**—Continuing down the hierarchy of planning, strategic goals are formulated from the selected strategic purposes. Strategic goals are those significant activities or tasks which must be accomplished in order to achieve the strategic purposes of an organization. The strategic goals are the critical ends towards which achievement is directed. The strategic goals are developed from the strategic purposes and should be consistent, appropriate and supportive of the strategic purposes. The strategic goals identify those major areas of concern in which activity should be focused. In the strategic goals, management translates the general nature of strategic purposes into more tangible form; the strategic goals are the results which have to be achieved. After the strategic goals have been selected, the strategic design continues with the strategic objectives.

**Strategic Objectives**—Strategic objectives is the last activity in the strategic design and the last part of the strategic decisions. In strategic objectives, plans become more specific. The strategic objectives are the quantification of the strategic goals; strategic objectives are directly derived from strategic
goals. For those strategic objectives which cannot be reasonably quantified, an appropriate proxy may be used. Strategic objectives should be specific, verifiable, and support the strategic goals. They should also be clearly stated. The strategic objectives contain those variables which must be monitored to ensure the success of the organization. In strategic objectives, the strategic purposes and goals are further translated into more tangible, operational form.

In strategic design, the assumptions about what the crucial variables would be like were stated in the strategic premises which is the beginning of the hierarchy of planning. From the strategic premises, the strategic purposes, goals and objectives are developed. Each descending step in the hierarchy of planning becomes more specific. After the strategic design has been stated, the strategic planning process continues with the strategic programs.

Strategic Programs

The strategic programs are the fourth activity in the strategic planning process. The purpose of the strategic programs is to deal with the long-term operation of the organization. In strategic programs, the strategic design is translated into more specific courses of action. The specific courses of action in the strategic programs are the strategic organization structure, policies, procedures, rules, and budgets. Characteristics of the strategic programs are the answering of the questions of how, when, who, where. Strategic programs are the written courses of action.
which outline a sequence for the necessary activities which must be done in order for the strategic design to be achieved. Programming is the translation of plans whereas planning is a decision making process where alternatives are selected from an array of possibilities. The activity of strategic programs begins with the strategic organizational structure.

**Strategic organizational structure**—The first activity in the strategic programs is developing an appropriate strategic organizational structure which will be consistent with the strategic design. The strategic organizational structure is the principal vehicle for clarifying the roles of the people in the organization. The strategic organizational structure also assigns the authority and responsibility for the achievement of the strategic objectives. Likewise, the strategic organizational structure should be designed to influence and control the organizational behavior. Lastly, the strategic organizational structure should provide for the coordination of the authority and informational relationships in the organization, both horizontally and vertically. After having designed and graphically displayed the strategic organizational structure, the strategic programs continue with the strategic policies.

**Strategic Policies**—The second activity of strategic programs or the fifth step in the hierarchy of planning is the statement of the strategic policies. The strategic policies further clarify the
strategic purposes by being more specific and by having greater
detail than the strategic objectives. The strategic policies are the
general guidelines for actions and to thinking which allows for
flexibility in a decision making situation but which provide
consistency in the policy making activity, and the strategic planning
process in general. Strategic policy areas may include marketing,
research and development, production, procurement, personnel, and
finances. The strategic policies may either be formal or informal.
Strategic policies must be appropriate and consistent with the
strategic design and the strategic organizational structure.
Following the strategic policies, the strategic procedures and rules
are stated.

**Strategic Procedures and Strategic Rules**--The strategic procedures
and the strategic rules are the last two activities in the strategic
programs. Greater detail and specifics are given in strategic
procedures and strategic rules. Strategic rules are more specific
and detailed than strategic procedures. Strategic procedures are
a further clarification of the strategic policies; strategic
rules are additional clarification of strategic procedures. The
strategic procedures are sequential guides to actions which detail
the exact manner in which a certain activity must be accomplished.
Strategic rules are specific and definite action/nonaction which is
required for a given situation. The strategic procedures must be
appropriate and consistent with the strategic objectives and
policies; strategic rules must be appropriate and consistent with
strategic policies and procedures.
Strategic Budgets—The last activity in the strategic programs is the formation of the strategic budgets. Strategic budgets are the last time plans are made more specific and are further detailed. Budgets are the final step in the hierarchy of planning. The strategic budgets are directly related to the strategic goals and strategic objectives. Strategic budgets are numerical statements of what the expected results of the strategic purposes, goals, and objectives should be for a given future period. The purpose of strategic budgets is the reduction of previous strategic plans (strategic purposes, goals, and objectives) to definite numbers. These numbers must be consistent and appropriate with the strategic organization structure. The consistency allows for the delegation of authority without the loss of control. The numerical statements are both financial and nonfinancial in nature. Strategic budgets are "basically a means for providing a systematic method for allocating the resources of an enterprise in ways most effective to meet its goals." By emphasizing strategic goals and objectives, strategic budgets transcend the time frames of traditional accounting periods. By focusing on strategic goals and objectives in the light of available resources, strategic budgets place stress on the desirability of assessing costs against benefits in selecting the best course of achieving the strategic purposes. The strategic budgets should be examined to insure that they are appropriate and consistent with the strategic design.
The development of the strategic budgets completes the last activity of strategic programs. The strategic programs consist of the strategic organizational structure, policies, procedures, rules, and budgets. In the strategic programs, the strategic decisions are transformed into the long-term, specific courses of action for the operation of an organization. From the strategic programs, the strategic planning process continues with strategic controls.

**Strategic Controls**

Strategic controls are a set of actions that assures that the organization will receive relevant and timely information for the purpose of informing and evaluating. The strategic controls purpose of informing is accomplished through the strategic management information system, which is a systematic gathering of internal and external data that monitors the changing environment of an organization. The strategic control purpose of evaluating is accomplished through the strategic management control system, which is the formal evaluation activity of the organization.

The relationship between strategic controls and the strategic design and programs is dual. Strategic controls provide the information necessary in the decision making activity of developing plans; strategic controls are also the activity which evaluates the performance of plans which were based on the data received from strategic controls. Information for the management control system should be collected separately from the data which is obtained for the management information system. However, the structure of the
data may be similar. Both sets of information are gathered on a continuous basis. A difference, however, does occur in the management control system; the management control system does segment its data into discrete intervals for the evaluative function. The information collected may either be financial or nonfinancial.

Strategic controls is a total system which encompasses all of the aspects of an organization. In strategic controls, information is communicated to appropriate organizational levels; the information is evaluated and decisions are made regarding implementing any required activity. Therefore, strategic controls derive its existence from the informational prerequisites of the other functions of the organization. Strategic controls also serve the crucial function of insuring that the organization keeps on its predetermined course of actions.

For strategic controls to be effective, it must detect or anticipate significant deviations in the crucial variables. Strategic controls must be forward oriented so that not only explicit data is gathered but surveillance is maintained for those unusual and/or unexpected factors which may have a significant impact on the strategic planning process and the desired end results.

The primary difference between the management information system (MIS) and the management control system (MCS) is that the primary purpose of MIS is informing; the primary purpose of MCS is evaluating. The strategic MIS will be the first area discussed in the strategic controls.
Strategic Management Information System (MIS)—The strategic management information system (MIS) is an integrated collection, handling, and transmission of all the data needed for the operation of an organization. An effective MIS condenses, synthesizes, and analyses the data in order to reduce irrelevant information and to increase the usefulness of the information. Implicit in an effective MIS is the systematic and continuous flow of information within an organization. An effective MIS cannot be designed unless the end users have defined precisely their needs. A prerequisite for a MIS is that a MIS must be efficient and cost-effective. The overall effectiveness of a MIS is diminished if its design is not appropriate for the organization and if its costs exceed its benefits.

An effective MIS consists of:

1. decision process—which ascertains the informational requirements of the organization and selects those which are to be included in the MIS.
2. input device—provides for placing information into the system.
3. storage unit—provides for the accumulation of information (memory function).
4. control unit—selects the proper information from the storage unit and controls the operations of the processing unit.
5. processing unit—handles and interprets the data.
6. output device—presents the original information in usable form after it has been processed.

Table 9, which follows, is a graphic summary of the types of information that can be gathered by a MIS.
## TABLE 9
Types of Information Collected by MIS

<table>
<thead>
<tr>
<th>Environmental Data</th>
<th>Competitive Data</th>
<th>Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>social</td>
<td>past performance</td>
<td>quantitative - financial</td>
</tr>
<tr>
<td>political</td>
<td>present activity</td>
<td>payroll</td>
</tr>
<tr>
<td>economic</td>
<td>future plans</td>
<td>revenues, expenses, investments</td>
</tr>
<tr>
<td></td>
<td>sales</td>
<td>capital expenditures</td>
</tr>
<tr>
<td></td>
<td>marketing</td>
<td>marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>manufacturing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>research and development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>personnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>qualitative - nonfinancial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>labor efficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>personnel turnover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>production</td>
</tr>
<tr>
<td></td>
<td></td>
<td>personal information network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>memos</td>
</tr>
<tr>
<td></td>
<td></td>
<td>individual initiatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>departmental synthesis</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The information which is collected by a MIS may be classified into three categories: decision-making/planning data; marketing data; and personnel/employee feedback data.

Decision-making/planning informational requirements include data which transcends organizational lines, which shows trends and covers long time periods, which contains nonfinancial data that is important, and which is future oriented.\(^ {181}\) MIS should provide the decision maker with a continuous update of information, should develop fresh information, and should detect changes in the dynamics of the complete organizational environment.\(^ {182}\) A MIS should also reduce and help eliminate uncertainty about an actual situation in the real world (the "state of nature") and in the crucial variables.\(^ {183}\)

Marketing information is the second category where data from MIS is used. To meet the marketing informational requirements, MIS must have a "set of procedures and methods for generating an orderly flow of pertinent information for use in making decisions, providing management with the current and future states of the market, and also providing indications of market responses to company actions as well as the actions of competitors."\(^ {184}\) Marketing information consists of internal data (sales analyses, cost analyses, financial records) and external data (secondary data, data purchased from syndicated sources, marketing research, studies done by the marketing research department).
Employee feedback is the third and final category for which a MIS collects data. Employee feedback is information about employees which is not punitive in nature and which an employee has access to for the purpose of self-evaluation. The access to information about his/her performance allows an employee to see how well he/she is doing. Implicit in this accessibility of performance information is management desire that if an employee learns of unfavorable results, the employee will take the initiative to correct the situation. From the discussion of the strategic MIS, the other major part of strategic controls, the strategic MCS is reviewed.

**Strategic Management Control System (MCS)**—A strategic management control system (MCS) is a system of checks that will tell managers, in time for them to take corrective action, that problems will occur if positive actions are not taken immediately. The purpose of a MCS is to verify whether occurred events have conformed to the developed plans; a MCS is to detect weaknesses, correct them, and prevent them from happening again. A MCS should be designed to maintain the quality of results necessary to achieve the strategic purposes of the organization. "There should be a direct correlation between the controlled item and the operation of the system." The controlled items are critical points in the operation of the organization which are limiting factors in the operation or which show better than any other factors whether the plans are successful. Critical points can either be characteristics or
conditions; critical points should also include the crucial variables.

Because the MCS is a subsystem of strategic controls, and because strategic controls are forward oriented, MCS must also be forward oriented to be effective. The forward oriented characteristics of a MCS are found in the following table, Table 10.

The requirements for an adequate MCS are:

1. Controls must be designed for specific tasks and persons they are intended to serve.
2. Controls should be tailored to plans and positions.
3. Controls must be tailored to individual managers and their personalities.
4. Controls should point up exceptions at critical points.
5. Controls should be objective.
6. Controls should be flexible.
7. Controls should be economical.
8. Controls should lead to corrective actions.

An essential part of a MCS is the maintenance of an information network. This information network should influence managers to take actions that will lead to the desired results. Characteristics of an information network necessary for a MCS include that the strategic organizational structure lines are followed, that the time spans are generally short, that the nonfinancial data are important, that the data be very detailed, and that the data are held in confidence.

The establishment of standards is also fundamental to a MCS. The standards are stated for the critical points which are to be controlled. Standards are measurement statements of the planned
TABLE 10
Management Control System - Forward Oriented Characteristics

1. The determination of the desired performance at the critical points which can be measured or verified - the standard. The performance is based on the prior strategic planning.
2. The measurement of the actual performance at the critical points.
3. The comparison of the actual performance at the critical points with the standard; the evaluation of the impact of the variance on the strategic purposes, goals, and objectives.
4. The direction of a correcting mechanism which is capable of bringing about a change at the critical points to the acceptable standard if the variance is unacceptable.
5. The development of a model which includes a phase that would regularly review the MCS to see whether the critical points and their interrelationships still represent realities.
6. The regular and systematic collection and input of the actual performance at the critical points.

performance which is to be accomplished at the critical points by predetermined data; standards must be verifiable. Standards can be either quantitative or qualitative. A verifiable qualitative standard should be a specific statement of the characteristics of the critical point and a definite date by which the performance at the critical point must be accomplished. Examples of standards include physical standards, cost standards, capital standards, revenue standards, program standards, intangible standards, and goals as standards.

The control devises of a MCS may be classified as budgetary and nonbudgetary. Budgetary controls would include the following budgets: revenue and expense; time, space, material, and product, capital expenditure, cash, balance sheet, and budget summaries. Nonbudgetary controls are given in Table 11, which follows.

Strategic controls is the formal activity that has the responsibility of insuring the overall performance of the organization through the control of critical points by predetermined standards and through the dissemination of relevant and timely information. After the overall performance of an organization has been established through strategic controls, the overall appropriateness of the organization is ascertained in strategic comparisons.

Strategic Comparisons

Strategic comparisons is the next phase in the strategic planning process after strategic controls. In strategic
TABLE 11
Management Control System - Nonbudgetary Controls

Internal audit—an appraisal of the degree of compliance with the organizational policies, procedures, and methods, and if necessary, the making of recommendations to insure the observance of established organizational practices; should be designed as a consultant function of a nonthreatening nature.

Management audit—a systematic appraisal of the overall performance of management, with the emphasis on the measurement of managerial performance areas—economic function, corporate structure, health of earnings, service to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor, and executive function.

Human resource account—this seeks to treat the expenditure in human resources as an investment in assets, thereby enabling one to predict the future performance as the rate of consumption of human resources relative to the rate of replacement of human resources.

Ratio analysis—the analysis of data which shows proportional relationships between two measures and which puts the two measures in perspective; an analysis of ratios highlight the magnitude of the relationships among the measures, including balance sheet and income statement accounts (financial data).

Breakeven analysis—the charting and analyzing relationships, usually between sales and expenses, to determine at what size or volume point an operation breaks even between a loss or a profit; it can be used in any problem area where marginal effects can be pinpointed.

Time-Event-network analysis—an analysis designed to watch how the parts of a program fit together during the passage of time and events; examples are PERT and CPM.

Statistical data—information which consists of or is based on numerical facts or data.
TABLE 11 - Continued

Special reports and analyses—activities which are performed to specifically furnish information for a particular problem; activities which do special investigative and analytical operations.

Personal observations—the means of securing control information applicable to all key performance areas; impressions gained by management and supervisors as the result of personal contact with subordinates.

comparisons, there occurs the continuous activity of evaluating the validity of the internal dynamics of the organization vis-à-vis the changing external forces. The purpose of strategic comparisons is to formally establish a procedure for the multidimensional scrutiny of historical strategic plans, present strategic plans, and the current state of the environment. The strategic comparisons is a function which is designed to keep the organization appropriate to the changing forces in economics, technology, society and politics. In strategic controls, the evaluation was focused more on a micro level. On the other hand, in strategic comparisons, the appraisal has a macro focus. The inputs into strategic comparisons are the results and/or conclusions from the strategic profile, the strategic design, and the strategic controls.

The strategic comparisons are an organization-wide appraisal which is performed to determine whether the organization is remaining appropriate to its environment. The relationship between the strategic comparisons and its inputs of strategic profile, design, and controls is that the function of strategic comparisons is to coordinate and appraise the organization to make sure that a particular activity does not operate in isolation but is effectively orchestrated into the activities of the total plan.

With the conclusions and results from the strategic profile, design, and controls, a comprehensive examination is done on the
organization's present overall performance and on the organization's probable future performance. An integral part of strategic comparisons is the comprehensive re-evaluation and challenge of the strategic premises vis-a-vis the current prospects for the future. Strategic comparisons are the formal safeguards in the strategic planning process against the tendency to let the strategic planning process become static and absolute, subject only to mechanical and ritualistic preparation.

In the preceding discussion of strategic comparison, the systems interaction of the strategic planning process was mentioned. Because this systems interaction is vital to the dynamics of the strategic planning process, a distinct discussion of the systems interaction will take place in the adjustment mechanism activity.

Adjustment Mechanism

If significant variances arise from the exhaustive appraisal done in strategic comparisons, the adjustment mechanism begins its function. The adjustment mechanism is the conscious process of the application of the systems interaction influence on significant deviations; given a significant variance in the plans, a formal process commences on the systems interactional impact of that variation on the total strategic planning system. The adjustment mechanism is the formal, strategic activity that implements the replanning that occurs because of major variances and assures that the impact of the replanning
recognizes the systems interaction of the strategic planning process. For any given adjustment or revised plan, a formal process must take place to think through the impact of that adjustment or revision on the whole strategic planning process. The strategic comparisons’ function is to sensitize the organization to the dynamics involved in the strategic planning process. Strategic comparisons should be a continuous activity. However, there should be predetermined, discrete intervals where a formal strategic comparison is made. If strategic comparisons are properly functioning, any crucial variances should surface, regardless of whether it is time for the formal strategic comparison. The continuous aspect of strategic comparisons imposes a demanding challenge for the MIS.

The preceding discussion of six of the eight activities of the strategic planning process have focused on the macro or strategic level of the organization. The six activities that have been discussed are:

- Philosophical Position
- Strategic Profile
- Strategic Design
- Strategic Programs
- Strategic Controls
- Strategic Comparisons.

From the macro level, the strategic planning process continues with the translation of the strategic plans as outlined above into the day-to-day or operational plans. This translation from macro to
The adjustment mechanism also permeates the operational level of planning.

**Derivative Decisions and Programs**

From the macro organizational level, the hierarchy of planning continues in the derivative decisions and programs. The relationship between the derivative decisions and programs and the strategic design and programs is that the strategic design forms the foundations upon which the derivative decisions and programs are based. In the hierarchy of planning, the subsequent levels build on the precedent levels; the precedent levels form the premises for the subsequent planning activities. This downward progression of the planning in a systematic manner builds the interrelated planning framework.

The levels below the strategic or macro level are the non-strategic or micro levels of an organization. The micro level is where the day-to-day operations of an organization are performed. The derivative level of planning is done at the operational level of an organization. From the strategic areas as outlined in the strategic organizational structure, the derivative areas of responsibilities flow. Each derivative area will go through the same hierarchy of planning: premises, purposes, goals, objectives, policies, procedures, rules, and budgets.
The further need for detailed and specific plans and more detailed and more specific plans will continue according to the size and complexity of the organization. Planning must be of adequate detail to insure that there is sufficient coverage but stops where there would be "over" planning. As the plans become more detailed and more specific, the hierarchy of planning in the derivative levels becomes more myopic.

The purpose of derivative decisions and programs is the continuing translation of the broad plans found in strategic decisions and programs into more detailed and specific plans. In derivative decisions and programs, the network of plans formed by the hierarchy of planning concept branches out into the subordinate levels of an organization. Vigilance must be maintained to prevent any planning step to occur in isolation; the systems interaction of the entire planning progress must be sustained. Therefore, to prevent discontinuity, at each stage in a respective planning sequence, vertical verification of consistency and appropriateness must take place. The responsibility for the horizontal verification for consistency and appropriateness must be done at the strategic level to insure that all plans are compatible and there is a continuity that flows from the strategic level to the derivative level; the flow goes from the macro to the micro.

The derivative decisions and programs are the subordinate and supportive level of planning for the planning done at the
strategic level. Strategic purposes, goals, and objectives are the derivative premises, upon which the derivative decisions and programs are based.

Paralleling the strategic level concept of crucial variables is the derivative equivalent of key performance factors. Key performance factors are those short-term "crucial variables" which significantly impact on the derivative areas. Characteristics of key performance factors are that any variance in them will have extraordinary impact on the ultimate existence of a derivative area or level, that these factors must sharply remain in focus through the development of the derivative decisions and programs, and that these factors are limited in number. Key performance factors are implicitly or explicitly derived from the strategic crucial variables. There should be a strong systems interaction between the crucial variables and the derivative key performance factors; the crucial variables are associated with the strategic level and the key performance factors are associated with the derivative levels.

**Derivative Decisions**—Derivative decisions are the plans which take place at the operational levels and areas as specified in the strategic organizational structure; for each derivative area or level, its purposes, goals and objectives are established by the persons at that respective level in the organization. Derivative decisions are the operational purposes, goals, and objectives of an
enterprise.

Likewise, once the derivative decisions for each operational level or area have been developed, the respective derivative programs have to be formulated for each of these levels. All derivative decisions and programs must be tailored to their specific level. A specific set of derivative decisions and programs for an individual level are unique for that level. So long as a respective set of plans remain appropriate and consistent with the total strategic planning process, no artificial boundaries should be erected. All subsequent levels of planning should remain consistent and appropriate with its precedent level. This verification should ultimately be carried through to the strategic purposes, goals and objectives. There should be a "systems" support between the various levels of planning.

Derivative Programs—The derivative programs are the derivative policies, procedures, rules and budgets. For each operational level there are derivative decisions and programs which have to be developed. These plans are developed along the format used in the strategic design and programs.

From the derivative decision and programs, the discussion of the strategic planning model is completed with a review of the derivative controls and comparisons.

Derivative Controls and Comparisons

Derivative controls and comparisons perform the same
functions as strategic controls and comparisons except derivative controls and comparisons focus on the operational or day-to-day activities of an organization.

Derivative Controls—The purpose of derivative controls is to inform and evaluate the operational areas of an organization. Derivative controls are comprised of derivative information systems and derivative audit systems. The important considerations which must be kept in focus in developing these systems are: (1) each system must be designed to optimally perform its purpose and (2) each system must be consistent with its strategic planning counterpart. As an example, a derivative information system must be appropriate for its area and be compatible with the strategic MIS.

Following the formation of the derivative controls, the derivative planning process of derivative decisions, programs, controls, and comparisons, is completed by the derivative comparison activity.

Derivative Comparisons—The purpose of derivative comparisons is a formal analysis of the derivative planning function to determine whether the derivative planning process is remaining appropriate for the operational levels and is being consistent with the planning at the strategic level of the organization.

Derivative Planning Summary

The derivative planning process parallels the strategic planning process. The following table, Table 12, gives a graphic
TABLE 12

Derivative Planning Process

Strategic Goals and Objectives → Derivative Premises

Derivative Decisions

Derivative purposes → Derivative goals → Derivative objectives

Derivative Programs

Derivative Organizational structure → Derivative Policies

Derivative Procedures → Derivative Rules

Derivative Budgets

Derivative Controls

Derivative information system → Derivative control system

Strategic Controls

Derivative Comparisons

Derivative purposes → Derivative Decisions → Derivative Controls
display of the derivative planning process from the strategic level to the derivative level, through the derivative planning process, and where the derivative planning re-enters the strategic planning process. The derivative premises perform the same function as strategic premises but the derivative premises are at the operational level; similar analogies exist between the derivative and strategic planning activities. A following table, Table 13, gives a summary of the distinctions between the derivative and strategic planning.

The development of the strategic planning model as just discussed is the first half of an adequate strategic planning model. Table 14, which follows, gives a summary of the strategic planning model's terms. The second half of an adequate strategic planning model is an evaluation of how well was the model used in a particular strategic planning situation.

Strategic Planning Evaluation

The strategic planning evaluation is the second half of the development of an adequate strategic planning model.

In the preceding section where a general strategic planning model was developed, the focus was on maintaining the appropriateness of the organization to its environment. The problem of the quality of the strategic planning was not mentioned. The quality of the strategic planning will now be addressed. The concept of
TABLE 13
Some Distinctions Between Strategic Planning and Derivative Planning

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Strategic Planning</th>
<th>Derivative Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of activity</td>
<td>Total operation; macro</td>
<td>Single activity or micro function</td>
</tr>
<tr>
<td>Judgment</td>
<td>Relatively much; Subjective decisions</td>
<td>Moderate to little</td>
</tr>
<tr>
<td>Nature of structure</td>
<td>Formal, broad general areas of responsibility</td>
<td>May be formal or informal, specific activities and responsibilities</td>
</tr>
<tr>
<td>Nature of information</td>
<td>integrates; sophisticated approximations; acceptable future and historical;</td>
<td>tailor-made to the operation; precise, often in real time; focus on key performance factors</td>
</tr>
<tr>
<td></td>
<td>focus on critical variables and things which influence them</td>
<td></td>
</tr>
<tr>
<td>Persons primarily involved</td>
<td>Management</td>
<td>Supervisor or none</td>
</tr>
<tr>
<td>Mental Activity</td>
<td>Administrative</td>
<td>Quasi-administrative</td>
</tr>
<tr>
<td>Time Horizon</td>
<td>years</td>
<td>day-to-day, weeks</td>
</tr>
<tr>
<td>Types of Costs</td>
<td>Discretionary</td>
<td>Engineered</td>
</tr>
</tbody>
</table>

TABLE 14

Strategic Planning Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Planning</td>
<td>A formal decision process for a course of action into the future.</td>
</tr>
<tr>
<td>Philosophical Position</td>
<td>A basic value system and its respective critical variables, including an economic growth orientation.</td>
</tr>
<tr>
<td>Crucial Variables</td>
<td>Those long-term factors that have significant impact on an organization.</td>
</tr>
<tr>
<td>Strategic Profile</td>
<td>A detailed appraisal of an organization's total environment.</td>
</tr>
<tr>
<td>Environment</td>
<td>The economic, technological, political and social factors which impact on an organization.</td>
</tr>
<tr>
<td>Technology</td>
<td>Applied science, engineering, or methods of using tools and machinery.</td>
</tr>
<tr>
<td>Social Trends</td>
<td>Factors which pertain to the relations of human beings in a community.</td>
</tr>
<tr>
<td>Political Trends</td>
<td>The general course of factors which deal with government.</td>
</tr>
<tr>
<td>Strategic Design</td>
<td>Key elements of a plan which emanate from the top of an organization.</td>
</tr>
<tr>
<td>Strategic Premises</td>
<td>Strategic premises, purposes, goals, objectives.</td>
</tr>
<tr>
<td>Strategic Purposes</td>
<td>The essence or mission of an organization.</td>
</tr>
<tr>
<td>Strategic Goals</td>
<td>Significant activities or tasks which must be accomplished.</td>
</tr>
<tr>
<td>Strategic Objectives</td>
<td>Quantification of the crucial variables.</td>
</tr>
<tr>
<td>Strategic Programs</td>
<td>A formal course of action outlining the sequence of activities.</td>
</tr>
<tr>
<td>Strategic Organizational</td>
<td>The framework for the responsibility and accountability of activities.</td>
</tr>
<tr>
<td>Structure</td>
<td></td>
</tr>
<tr>
<td>Strategic Policies</td>
<td>General guidelines for actions and thinking.</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Strategic Procedures</td>
<td>A sequence of actions.</td>
</tr>
<tr>
<td>Strategic Rules</td>
<td>Specific and definite action/nonaction.</td>
</tr>
<tr>
<td>Strategic Budgets</td>
<td>A statement of plans in numerical terms of the strategic purposes, goals, and objectives.</td>
</tr>
<tr>
<td>Strategic Controls</td>
<td>A set of actions that informs and evaluates.</td>
</tr>
<tr>
<td>Strategic Management Information System</td>
<td>An integrated collection, handling, and transmission of needed data.</td>
</tr>
<tr>
<td>Strategic Management Control System</td>
<td>A set of verification actions to insure that plans are being carried out and that is evaluative in nature.</td>
</tr>
<tr>
<td>Strategic Comparisons</td>
<td>The determination of whether an organization is remaining appropriate.</td>
</tr>
<tr>
<td>Adjustment Mechanism</td>
<td>Formal recognition of the systems interaction concept in the strategic planning process.</td>
</tr>
<tr>
<td>Derivative</td>
<td>The operational or day-to-day aspect of an organization.</td>
</tr>
<tr>
<td>Derivative Decisions</td>
<td>Derivative purposes, goals, and objectives.</td>
</tr>
<tr>
<td>Derivative Programs</td>
<td>Derivative organizational structure, policies, procedures, rules, and budgets.</td>
</tr>
<tr>
<td>Derivative Controls</td>
<td>Derivative information systems and controls systems.</td>
</tr>
<tr>
<td>Derivative Comparisons</td>
<td>The systems interaction of the planning process on the operational level.</td>
</tr>
</tbody>
</table>
adequacy is derived from the concept of quality. Broadly, adequacy is a minimal level of activity which is acceptable. Adequacy in reference to strategic planning means a minimal level in the quality of planning for the future that will insure that an organization will be socially and economically appropriate for its present and future environment. Adequacy and appropriateness have a systems interaction between them. The concept of quality is naturally very subjective and intangible. Quality can be made tangible by being explicit of the desired characteristics or performance desired.

The adequacy of strategic planning is determined by asking specific questions which probe for explicit answers to the questions.

The strategic planning evaluation is an independent, formal analysis of how well the strategic planning was done and the degree to which the organization remained appropriate to its present and future environment. This analysis addresses the adequacy of the strategic planning process.

The strategic planning evaluation is done in four major parts:

1. Was strategic planning done?
2. How well was strategic planning done?
3. Were the results of the strategic planning process used?
4. What was the frequency of the strategic planning?

The strategic planning evaluation follows the sequence of the activities in the strategic planning model developed earlier in this chapter (see Appendix A for model).
Actual Strategic Planning

The evaluation of strategic planning begins by analyzing whether strategic planning was actually done. If strategic planning was done, specific results will be determined. The following table, Table 15, illustrates the format used in the examination of the existence of strategic planning in an organization.

The evaluation format in Table 15 should not be a rote exercise. The evaluation is designed to ferret out specific, fundamental issues of an organization. For example, when looking at a philosophical position which has been stated, an analysis should be performed as to its juxtaposition with one of the two polar positions—economic growth/limits to growth. When studying the strategic design, the stated strategic premises should be comprehensively examined to verify that the stated premises are indeed premises as they have been defined. As each question is asked of the strategic planning activity under scrutiny, the answers should be placed in juxtaposition with the respective activity in the strategic planning model to verify the types of answer received.

Having completed the first part of the strategic planning evaluation of whether or not the strategic planning was done, the evaluation continues with a review of the sophistication of the strategic planning that was done.
**TABLE 15**

Evaluation Format for "Was Strategic Planning Done?"

1. Was a philosophical position stated? If so, what was it?
2. Was a strategic profile done? If so, what were the conclusions?
3. Was a strategic design done? If so, what were the strategic premises, purposes, and goals, and objectives?
4. Were the strategic programs done? If so, what were the strategic organizational structure, policies, procedures, rules and budgets?
5. Were the strategic controls done? If so, what were the management information system and the management control system?
6. Were the strategic comparisons performed? If so, did the organization remain appropriate to its environment?
7. Were the derivative decisions and programs done? If so, what were the derivative purposes, goals, objectives, policies, procedures, rules, and budgets?
8. Were the derivative controls and comparisons done? If so, were the day-to-day operations the desired performance planned for and did the derivative aspects of the organization remain appropriate to its environment?
Strategic Planning Sophistication

The strategic planning sophistication is the second part of the strategic planning evaluation. The strategic planning sophistication is a systematic analysis of how well the strategic planning was done. Again, each activity of the strategic planning process comes under scrutiny. Table 16, which follows, outlines the format for the evaluation of the strategic planning sophistication. As in the previous section, it is imperative to place the results just obtained in the proper juxtaposition with the strategic planning model. The strategic planning model performs the function of a standard by which the review of the strategic planning process is being evaluated. The juxtapositioning of the strategic planning model with the results of the strategic planning being reviewed enables the latter to be placed in proper perspective. Again the caveat that this part of the evaluation should not become a mechanical exercise. The appropriate perspective of each result should be determined. From an examination of the sophistication or how well the strategic planning was done, the evaluation of the actual strategic planning proceeds to an analysis of whether the strategic plan was implemented.

Implementation of Strategic Planning

The strategic planning implementation is the third area of the evaluation. The implementation evaluation is the searching for the breadth and depth of how comprehensively were the strategic
TABLE 16

Evaluation Format: "How Well was the Strategic Planning Done?"

<table>
<thead>
<tr>
<th>Strategic Planning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Position</td>
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<tr>
<td>Strategic Profile</td>
</tr>
<tr>
<td>Strategic Design</td>
</tr>
<tr>
<td>Strategic Programs</td>
</tr>
<tr>
<td>Strategic Controls</td>
</tr>
</tbody>
</table>

Analysis Performed on EACH Activity

1. How sophisticatedly was the planning done?
   a. What were the techniques and tools used in doing the planning?
      - statistical
      - operations research
      - human resources
      - economical
      - financial
   b. What was the quality of the data?
      - primary -- internal, external
      - secondary
      - Was the data timely?
      - Did the data supply the required information?
   c. Who was involved in the planning?
      - internally?
      - externally?

2. Was each activity reviewed?
   a. Was each part of the activity examined to see if further analysis was required?
   b. If a further analysis was done, what were the results?

NOTE: The analysis has to be done for each activity in the strategic planning process.
planning results utilized within the organization. The essence of the implementation evaluation is to verify whether there is a commitment by top management to the concept of strategic planning, and if so, what the degree of that commitment is. This is the most difficult area of the strategic planning evaluation because it is the most subjective; depending upon the reference point, the strategic planning results could or could not be said to have been implemented. The optimal method for this phase of the strategic planning evaluation is to step-by-step place the strategic planning results in juxtaposition with what is actually occurring in the organization. Objective judgment is then used to determine whether the strategic planning results were in fact an integral part of the organization. There should exist discernible indications of the integration. Some fundamental questions in the integration evaluation are:

1. Was there a commitment by top management to the concept of strategic planning?
2. Were the results of the strategic planning process integrated into the preexisting organization?
3. Was the systems interaction of the strategic planning results and integration recognized?

After having completed the third or implementation part, the strategic planning evaluation concludes with an examination of how frequently was the strategic planning process done.

**Strategic Planning Frequency**

The strategic planning frequency is the last part of the strategic planning evaluation. The strategic planning process
should be an ongoing activity so it is important to determine how often the actual strategic planning process is performed. The essential questions that must be asked are:

1. How frequently was the strategic planning done?
   a. Was the frequency discrete? If so, what was the length of the interval?
   b. Was the frequency continuous? Describe it.
2. Were the preceding strategic planning results revised?
   a. What were the revisions?
   b. Was the systems interaction of the revisions recognized?

Strategic Planning Evaluation Conclusions

After each step in the evaluation is performed, a composite evaluation summary should be developed. The significant variations of the strategic planning results with the strategic planning model should be specifically and formally stated. After all the significant variation have been collated, an objective perspective may be obtained as to the adequacy of the strategic planning being reviewed. The conclusions for each evaluation part must be seen in juxtaposition with each other and their respective strategic planning model counterpart in order to state an appropriate evaluation statement.

Summary

The purpose of Chapter IV was to develop an adequate strategic planning model. The adequate strategic planning model is divided into two parts: the strategic planning model and the evaluation of the applied strategic planning model. The strategic
planning model has eight major activities:

Philosophical Position  
Strategic Profile  
Strategic Design  
Strategic Programs  
Strategic Controls  
Strategic Comparisons  
Derivative Decisions and Programs  
Derivative Controls and Comparisons

The strategic planning evaluation consists of four principal areas:

Was strategic planning done?  
How well was strategic planning done?  
Were the strategic planning results used?  
How frequently was the strategic planning done?

The adequacy of the strategic planning model is derived by the systems interaction between the model and the evaluation of the application of the model. Adequate strategic planning is the minimal level of planning which occurs that makes an organization appropriate for its present and future environment.
FOOTNOTES - CHAPTER IV


110 Ibid., p. 3.

111 Ibid., p. 67.

112 Ibid., p. 445.

113 Ibid.

114 Ibid., p. 454.

115 Ibid., p. 465.

116 Ibid., p. 61.

117 Ibid.

118 Ibid., p. 465.

119 Ibid., p. 456.

120 Ibid., p. 446.

121 Ibid., p. 455.

122 Ibid., p. 452.

123 Ibid., p. 445.

124 Ibid., p. 463.

125 Ibid., p. 59.

127 Ibid., p. 167.
128 Ibid., pp. 169-170.
129 Ibid., p. 160.
130 Ibid.
131 Ibid., p. 55.
132 Ibid., pp. 176-177.
133 Ibid., pp. 178, 189.
137 Koontz and O'Donnell, Analysis of Managerial Functions, pp. 78-80.
138 Ibid., p. 80.
140 Koontz and O'Donnell, Analysis of Managerial Functions, p. 81.
141 Ibid., pp. 110-111.
142 Steiner, Long-Range Planning, p. 3.
145 Steiner, Long-Range Planning, p. 3.
146 Johnson, Kast, and Rosenzweig, *The Theory and Management of Systems*, p. 35.

147 Koontz and O'Donnell, *Analysis of Managerial Functions*, p. 236.


163 Ibid., p. 30.
164 Ibid., p. 11.
169 Ibid., pp. 136-137.
171 Koontz and O'Donnell, *Analysis of Managerial Functions*, pp. 138-139.
172 Ibid., pp. 659-660.
173 Ibid.
175 Ibid.
176 Ibid., pp. 6-7.
177 Koontz and O'Donnell, *Analysis of Managerial Functions*, p. 646.
178 Ibid., p. 651.
181 Ibid., p. 137.


185 Koontz and O'Donnell, *Analysis of Managerial Functions*, p. 646.


CHAPTER V

AN ADEQUATE STRATEGIC PLANNING MODEL FOR AN ORGANIZATION IN
THE WOOD PRODUCTS INDUSTRY

Strategic Planning Model

An adequate strategic planning model for an organization in the wood products industry is developed in this chapter, and the model will be referred to as the "derived" model for the rest of the paper. The derived model is an example of the application of the strategic planning model developed in Chapter IV. The derived model will follow the following format:

- Philosophical Position
- Strategic Profile
- Strategic Design
- Strategic Programs
- Strategic Controls
- Strategic Comparisons
- Derivative Decisions and Programs
- Derivative Controls and Comparisons.

The derived model will not be as comprehensive as it could be because of the scope of this research.

As mentioned in Chapter IV, the cornerstone of the strategic planning process is the identification of a set of crucial variables.
Therefore, the initial activity of the derived model is the statement of the crucial variables.

The first crucial variable is the amount and ownership of commercial forest land. The supply and availability of timber is crucial because it affects the raw resource base of the wood products industry. The majority of the wood products industry raw material, which is primarily softwood, is not in the commercial wood products organizations' ownership. "Who owns the land is important because ownership generally dictates the degree and type of management that the land will receive." A continuous and reliable supply of raw material, that is cost-effective, is significant for a commodity market like the wood products industry. Softwood lumber accounts for 81 percent of the total lumber products. Softwood plywood is the predominant type of plywood that is commercially manufactured and for which data are available. The largest end user of softwood products is the construction industry, and in particular, the residential housing segment. Residential construction accounts for the largest user of lumber—40 percent of all softwood lumber and 66 percent of softwood plywood. The major softwood owner is the federal government. The majority of the federal softwood lumber is contained in the National Forests. The National Forests contains 45.5 percent of the softwood growing stock and sawtimber. The second largest group of owners of softwood lumber are private, non-industrial owners, who account for 27 percent of the softwood growing
stock and sawtimber. The timber from the National Forests is dependent upon an annual appropriation for the Forest Service from Congress. The Forest Service is responsible for the timber sales from the National Forests. The availability of timber from the private, non-industrial owners depend upon the owners' awareness and desire to regard the timber as a crop and to make the necessary investment for cultivation of that crop.

The second crucial variable is the rate of interest. Interest rates are crucial because, in general, interest rates determine the level of activity of investment by both commercial and noncommercial parties. Investments by commercial parties would include capital expenditures for research and development, reforestation, and cost-efficient production facilities. Investments by private/noncommercial parties would be the ability and willingness to place money in building construction, specifically, residential housing. Interest rates also affect the willingness of private, nonindustrial owners to make improvements in their timber stands.

The third crucial variable is the availability of other building materials. Implicit in the availability of other building materials is the relative cost of the substitutes. Other building materials are crucial because of the relative price differential between them and wood products. Part of the price differential is the cost of energy to produce building materials. Currently, wood
products have a comparative advantage over the other building materials vis-a-vis the energy cost differential.

An average ton of plastics represents the energy equivalent of almost 6 tons of coal. A ton of aluminum ingot represents the energy equivalent of more than 9 tons of coal. A ton of steel in the form of house framing has an energy equivalent of almost 3 tons of coal; a ton of lumber requires the equivalent of about one-fourth tone of coal. House walls and floors built with wood require a small fraction of the energy required for equivalent structural elements built with other materials.204

Because of the energy cost differential, other building materials must be closely monitored.

In summary, the three crucial variables for the derived model are:

1. commercial timber lands—amount and ownership205
2. interest rates—commercial and private206
3. other building materials.207

Having identified the crucial variables for a wood products organization, the strategic planning process begins with a statement of the organizational philosophical position. It should be recognized that an organization would generally have a value system somewhere between the two polar positions of pro-growth and limits to growth. The organization, however, would have certain discernable biases toward one of the two polar positions. WPO will be used to designate an organization in the wood products industry for the remainder of this paper.

**Philosophical Position**

The philosophical position is a statement of the value
system for a specific organization. The values system for WPO will have a pro-growth bias. WPO would believe in the free market mechanism as the best process for determining a fair market price. WPO would also believe in pro-economic growth for the countries of the world and in the advancement of technology as a means to solve the world's problems. Advanced technology would exploit silvervulture practices, wood products applications, and total tree utilization.

Some social implications for WPO would be the awareness of the multi-use aspects of the forests. WPO would work with all interested parties in achieving the optimal solution for products, both market and nonmarket, that would come from the forests. WPO would become a more socially responsible citizen in its total environment.

WPO's political tendencies would be toward less government intervention and a decline in the laws and regulations affecting the marketplace. Important political biases for WPO would include positive capital gains tax laws; good investment tax credits, including reforestation costs and the ability to amortize the reforestation cost; and generous tax benefits and/or credits in the regards to federal gifts and estate taxes. WPO would also be an advocate for more aggressive federal leadership in the management of the nation's public timberlands. It should be noted that leadership does not imply regulation. The multi-use aspect of the forest would
be recognized but minorities would not dictate the management of National Forests.

A relatively close area of agreement between WPO and the pro-growth polar position would be in flexible planning and the concept of image of the future. Since WPO deals with a commodity which tales at least a quarter of a century before it can be harvested, WPO has to ascertain what the future will be like and plan accordingly.

This concludes the philosophical position of WPO. The strategic planning process continues with WPO strategic profile.

**Strategic Profile**

The strategic profile is the second step in the strategic planning process. The strategic profile gives a detailed appraisal of the environment, the wood products industry, and WPO vis-a-vis the economic, technological, social, and political factors as they pertain to the wood products industry. The first activity of WPO's strategic profile is the environmental profile.

**Environmental profile**—WPO's environmental profile begins with a look at the environmental economics. The environmental economics include forecasts for population, gross national product, and disposable personal income.

The United States population will increase to 300 million by the year 2030 as projected by the Forest Service. "The annual rate is declining now and is expected to decline to about 0.3 percent
by 2030.\textsuperscript{210} The South and Pacific Coast will continue to grow "but the major concentration of people will remain in the north central region and along the Atlantic and Pacific Coasts."\textsuperscript{211} The greatest age concentration of the population will occur in the late twenties to early fifties age bracket in a Forest Service projection to the year 2000.\textsuperscript{212}

By the end of the century we will become an older society, with the medium age of our population increasing from 28 to 35 years. The needs of society—employment, housing, social services, education, and recreational facilities—will change as the wave of baby boom children move across the older age classes.\textsuperscript{213}

From appraising the population and its trends, the gross national product is the next topic in WPO strategic profile. "GNP will double by 2000 and double again by 2030."\textsuperscript{214} The projected gross national product for 2000 is $3,530 billion in constant 1975 dollars.\textsuperscript{215} The composition of the gross national product will alter. The portion from transportation, trade, and other services will increase while manufacturing construction will decline. Although the relative portion of manufacturing and construction will decline, there will be a continued growth in these areas "requiring increasing large supplies of energy and raw materials."\textsuperscript{216} The cornerstone for the wood products industry is the activity in construction. Even though growth is predicted, the degree of growth for construction will not be as vigorous as it has been in the past. This would indicate that the wood products industry should look for ways to increase the amount of wood products used and/or look at
viable alternative for products made out of wood. Also, it must be remembered that construction is the primary end user of wood products, using 50 percent of the wood products production.

Succeeding the gross national product in WPO's environmental economics is a review of disposable personal income. "Disposable personal income will closely follow the trend of the gross national product. This, coupled with the projected increase in population, means more purchasing power for more people." Disposable personal income will increase from $7,066 to $14,212, constant 1975 dollars. Disposable personal income is an important determinant of certain products because disposable personal income "also influences household formation, size of dwellings, and furniture consumption—which influence the demand for timber and other timber products."

The trends in population, gross national products, and disposable personal income all show growth into the Twenty-First Century, although the population growth rate will stabilize around the year 2000. If inflationary trends do not erode the purchasing power of the dollar, there will be a sustained demand for wood products. However, there does exist the probability that the type of demand for wood products will change.

Some additional significant environmental economics include the growth of "pro-sumers"—people who do more for themselves/do-it-yourselfers. The wide spread use of electronics, the development
of new consumer markets, and the decline of mass marketing as it is known today are also part of the environmental trends. The era of inexpensive energy is gone; there will be plentiful expensive energy as conventional oil and gas become scarce. In conclusion, the environmental economics forecasts that there will be more people with greater spending power. Energy will be available, but will be more expensive.

The next step in WPO's environmental profile is the technology assessment and its associated trends. "Innovations in the metals and plastics industries has resulted in the displacement of lumber and plywood in products such as furniture and containers." Other technology that will influence WPO are computers, lasers, and genetic research. Already computers are helping wood products organizations to achieve better utilization of timber. In the future, computers may become indispensable in almost all phases of the wood products industry. Genetic research is also currently developing better, healthier trees; the future possibilities are unlimited. Perhaps lasers will help in the harvesting and processing of trees. In conclusion, technology will continue to be a significant influence in the wood products industry. The technological rate of change is expected to increase. This continuing rapid change in technology will demand that the wood products industry become sensitive to their environmental changes and be more adaptive to those changes.
Following WPO's technological assessment, an analysis is made on the environmental social trends. Recent social issues include the growing concern for ecology and the environment. These trends have had an impact on the wood products industry in the passage of RARE and RARE II (Roadless Area Review Evaluation) legislation. This legislation has taken some National Forest land and declared it as Wilderness areas. This has decreased the land available from the National Forests for commercial harvesting. The increase of the demand for nonmarket products has also occurred. The leisure time that people have and the people's desires to get away from the city have also increased. In conclusion, WPO's environmental social trends indicate that there will be continued pressure for nonmarket outputs from the forests. Also, people will become increasingly aware of their environment and demand laws which will protect the environment.

Concluding WPO's environmental profile is an assessment of its political trends. Some legislation, such as RARE II, has had a systems interaction with social trends. Changes in the tax laws concerning capital gains, investment tax credit, and gift and estate taxes have also had a significant impact on the operations within the wood products industry. The gift and estate tax laws greatly affect the private, nonindustrial land owners. If an individual inherited commercial forest land, the individual may be forced to sell the land and/or cut timber from the land in order
to pay the estate taxes due. Either way, these actions will reduce the available supply from this source, both for the present and in the future. Federal monetary policy also has an extraordinary impact on commercial and private investments. With the federal monetary policies, the government attempts to control inflation by manipulating the supply of money. The supply of money directly affects interest rates. The environmental political trends' conclusion include that there will be increased legislation over the environment and ecological matters. There will also be continued use of federal monetary policy to control inflation.

From the above discussion, the environmental profile for WPO is drawn. By the year 2000, there will be more Americans with presumably greater purchasing power. Computers will be a significant influence in the every day lives of the population; computers will alter the traditional life style of the people by taking over many of the essential activities of living. Increased awareness of our environment will continue, resulting in a more sophisticated consideration of the costs and benefits of alternative courses of actions vis-a-vis the nation's resources. Government bureaucracy will decline; government will provide for an "image of the future." It will be recognized that the traditional concept of fine-tuning the economy is out-of-date and that the market place needs less government interference instead of more. The
image of the future will create the ability to accept and adapt to the changing environment.

With the conclusions of WPO's environmental profile, the strategic profile continues with the assessment of the wood products industry.

Wood Products Industry Profile--The wood products industry profile is the appraisal of the wood products industry vis-a-vis its economic, technological, social, and political issues.

The first phase of the wood products industry profile is a review of its economics. Included in this is the study of the demand for wood products. The demand for wood products has been integrally connected with the construction industry. A significant component of the construction industry is the residential housing segment, which is the largest user of wood products. In turn, the demand for residential housing has traditionally been based on demographic statistics. The per capita consumption of lumber has declined compared to an increase in the per capital use of panel products (plywood, flakeboard). The demand for lumber "will be influenced largely by the trend in construction, especially residential construction." The demand for softwood plywood relies primarily on the health of the cyclical housing market. Lumber has received "increased competition from other materials, which has resulted in a reduction in the average number of board feet of lumber used in a single-family home." Despite the increase in
square feet for a single-family dwelling. "The average single-family home built in 1978 contained some 1700 square feet, up substantially from the average size of past years."228 "The amount of softwood plywood used in single-family construction is almost double that of multi-family construction."229 Lumber consumption has remained at the average level of 46 percent of the total per capita consumption for all timber products from 1900 to 1975,230 indicating a product in the maturity stage of the product life cycle. However, softwood production is also beginning to enter the maturity stage. "Any growth in total softwood plywood output is expected to be more moderate in the future, since many markets are close to saturation and home building growth is likely to be less robust."231 Further verification of the maturity stage of softwood is found in the Forest Products Review, Winter 1979-1980, which states that "the softwood plywood industry in 1979 and 1980 should reach a leveling-off period primarily because of market inroad made by substitution products . . . waferboard, oriented fiber particleboard, and composite panels (such as com-ply with a core of particleboard sandwiched between veneers)."232

Having reviewed the demand for wood products, a look must now be taken on the supply side of timber.

The wood products industry is different from most other natural-resource based manufacturing industries in that it does not exert much control over its raw material supply. The wood products industry is dependent upon other landowners for much of the supply since only
17 percent of the softwood sawtimber is owned by the industry. More than 20 percent is owned by the Federal Government.\textsuperscript{233} (See Table 1, p. 7 for a complete breakdown of land ownership.)

Although exact data was not obtained, the capacity expansion in the wood products industry has been directed toward panel products, both softwood and hardwood. Capital expenditures have also been used to increase the timber holdings of the major integrated firms and to modernize existing facilities.

Raw material prices have risen for wood products as the raw material supply has tightened. "Stumpage prices and resulting log prices has escalated dramatically since the mid-1960s. Douglas fir peeler log prices (Douglas Fir is primarily grown in the Pacific Northwest) increased by 135 percent from 1971-1977. Southern pine log prices, in the same time period, increased by 104 percent."\textsuperscript{234} Specific data on the actual prices changes was not obtained. For lumber, this has meant that close attention must be paid to lowering the unit cost of production.\textsuperscript{235} For softwood plywood, 62-65 percent of the cost is for raw materials.\textsuperscript{236}

Advancing costs of labor, energy, and general problems are also facing the wood products industry. For lumber production, the average hourly earnings went from $3.30 in 1972 to $6.71 in 1979—a doubling of labor costs.\textsuperscript{237} "Glue costs (averaging 4 to 7 percent of the total variable costs of plywood) and availability are major concerns to the softwood plywood industry because of the dependence on petroleum products."\textsuperscript{239} General costs problems include
pollution controls and general compliance with environmental regulations.

The supply and demand characteristics of the wood products industry which have just been discussed are reflected in the competitive conditions of the industry. The wood products industry is closely aligned to a monopolistic market structure. "Although the trend toward greater concentration of production among large companies has been fairly consistent for the past ten years, the industry is still characterized by many producing units operated by a large number of companies." The number of sawmills and planing mills has decreased 7.2 percent from 1972 to 1977. In 1978, the top five lumber producers accounted for 22 percent of the total estimated production of lumber in the United States. "The top ten (lumber) producers accounted for nearly 30 percent of total production (in 1978). This represented almost a 4 percent increase from 1977, although the total production levels were about the same for both years.

Weyerhaeuser is the largest lumber producer and Louisiana-Pacific is the second largest. Georgia-Pacific is the largest plywood manufacturer. The top ten producers of softwood plywood are believed to represent more than 50 percent of the total market. Other United States producers of lumber, plywood, and related producers are Champion International, Boise Cascade, Evans Products, Crown Zellerbach, International Paper, Potlatch Corporation, and Diamond International." Specific market shares for the major companies was not obtained.
From the above statistics, it may be inferred that economies of scales in production would be limited for lumber (sawmill size) but may have some bearing in softwood plywood facilities.\textsuperscript{244} The concentration in the wood products industry is focused around timberland ownership, geographical location, and technological sophistication in silviculture practices and production processes.\textsuperscript{245} The geographical concentration is influenced by where the commercial forests are located and the cost of transporting the raw materials to the production facility as well as the transportation costs of the finished product to the customer.\textsuperscript{246} Most of the major wood products industry organizations are highly integrated from growing the raw material to marketing the final product. A key performance measure for the integrated organization is the degree to which they are self-sufficient in supplying their fiber needs.\textsuperscript{247} Another factor in the wood products industry market structure is the influence of the import/export market.\textsuperscript{248} The volume and the value of wood products crossing U.S. borders as imports and exports has grown rapidly since 1950, although world trade in wood products has grown more rapidly. Wood products imports and exports must be considered in any question of U.S. timber supplies.\textsuperscript{249} The U.S. is a major importer of wood products in the world. "Imports average nearly 25 percent of the total lumber consumption."
The U.S. is the second largest lumber producing country in the world and ranks fourth in lumber exports. However, lumber exports from the U.S. represent less than 6 percent of total domestic production.250

A dominant influence on the market structure of the wood products industry is the dual nature of its organizations. "Part of our timber is produced and owned by private industry operating under competitive market forces and part is publicly owned and managed."251

Part of the market structure is also revealed in the Standard Industrial Codes classification. The following table, Table 17, lists the major industries within the wood product industry 252 that were judged to be important.

The data obtained was noticeably weak in the pricing policies of the wood products industry. For WPO, which is assumed to be a commercial enterprise, the price of its raw materials based on the acquisition cost of its timber land, which is carried on WPO's books at acquisition cost. For commercial wood product organization which have purchased their timberlands in the past, they are supplied with a low-cost raw material base. Commercial timberland for purchase is becoming increasingly scarce. Recent commercial timberland purchases have been the results of acquisitions and/or mergers with other firms. The cost of stumpage offered by the Forest Service in its timber sales is based on some fixed price
<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>241</td>
<td>Logging camps and logging contractors</td>
</tr>
<tr>
<td>242</td>
<td>Sawmills and planing mills</td>
</tr>
<tr>
<td>243</td>
<td>Millwork, Veneer, Plywood, and Structural wood members</td>
</tr>
<tr>
<td>244</td>
<td>Wood containers</td>
</tr>
<tr>
<td>245</td>
<td>Wood Buildings and mobile homes</td>
</tr>
<tr>
<td>249</td>
<td>Miscellaneous wood products</td>
</tr>
<tr>
<td>503</td>
<td>Lumber, Plywood, and Millwork</td>
</tr>
<tr>
<td>521</td>
<td>Lumber and other building materials dealers</td>
</tr>
</tbody>
</table>

index minus manufacturing and logging costs. Timber sales in the
States of Washington in February, 1979, brought in one of the
highest bid stumpage price that State has ever experienced. "More
than 200 million board feet of lumber, appraised at $25.4 million
received an actual bid price of $65.5 million." 253

The wood products market structure is also characterized
by a relative degree of standardization with a negligible difference
within a specific grade. 254 Lumber and plywood are sold by standard-
dization and objectives grade. 255

The market demand for wood products also contains the
potential for expansion, both within and outside the housing
industry. Opportunities for increasing the use of wood in home
construction lie in those parts of the house where nonwood materials
have traditionally been used; foundations and underfloor wood
plenum systems. Nonresidential construction opportunities include
low and medium-height commercial industrial, agricultural, and
institutional buildings. 256

The last area of the wood products economic assessment
includes a review of the major organization's financial ratios and
a comparison with the wood products industrial ratios as computed by
Dun's Review and Robert Morris. Table 18, which follows, lists the
financial ratios and a comparison with the wood products industrial
ratios as computed by Dun's Review and Robert Morris. Table 18,
which follows, lists the financial ratios that can be computed from
TABLE 18

Financial Ratios

Liquidity

current ratio

\[
\frac{\text{net sales}}{\text{net working capital}}
\]

Asset Management

\[
\frac{\text{net sales}}{\text{inventory}}
\]

\[
\frac{\text{net sales}}{\text{total assets}}
\]

Profitability

\[
\frac{\text{net profit}}{\text{net sales}} = \text{net profit margin}
\]

\[
\frac{\text{net profit}}{\text{tangible net worth}} = \text{return on net worth}
\]

Operating ratios

\[
\frac{\text{earnings before taxes}}{\text{tangible net worth}} \times 100
\]

\[
\frac{\text{earnings before taxes}}{\text{total assets}} \times 100
\]

Market value

Value Lines composite average annual price/earnings ratio

WPO price/earnings ratio as computed by Value Line
TABLE 18 - Continued

Debt management

<table>
<thead>
<tr>
<th></th>
<th>Net fixed assets</th>
<th>Tangible net worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total liabilities</td>
<td>Total liabilities</td>
<td>Tangible net worth</td>
</tr>
</tbody>
</table>

annual reports or statistics found in Value Line and which may be compared with the industrial ratios found in Dun's Review and Robert Morris. Table 19, which follows Table 18, contains a list of terms used in financial ratios which are translated to a common base.

Because of the scope of this research, an actual comparative financial analysis was not done. However, the preceding tables, Tables 18 and 19, provided the basis for such an analysis.

Continuing with an analysis of the wood products market structure, a look is taken at the actual inventory of raw material. The wood products industry is constrained in its fiber inventory from a lack of contemporary assessment of the wood fiber available from its supply. "We (the wood products industry) not only need to know in detail our wood inventory in volume sizes, and species, but we must be able to carefully evaluate the cost of varying cultural practices." 

The conclusions for the wood products industry's economics include the following. The wood products industry will be influenced by the inflationary trends in materials, labor, and energy cost. The ever-present problem of adequate timber supply will be exacerbated by the competing and conflicting use of timber between market and nonmarket products. Even market products—lumber and panelboard (plywood)—will be competing for the same raw material. Some key performance factors for the wood products
TABLE 19

Financial Terms

tangible net worth = net worth
preferred stock plus common equity

common equity = common stock, paid-in-capital and retained earnings

net profit = net income
= earnings
= net income after taxes

total capital = long-term debt (debt held over one year) plus net worth

net profit margin = net profit
sales

net operating income = operating income
= earnings or profits before interest and taxes
= gross profit - all expenses except interest and taxes

gross profit = sales - cost of goods sold

operating margin = net operating income
sales

working capital = current assets - current liabilities
= net working capital

cash flow = net income + depreciation

payout ratio = dividends paid
net profit

dividend yield = dividends paid previous year
current stock price
TABLE 19 - Continued

| capital                          | = generally refers to common stock |
| price/earnings ratio            | = price per share                  |
|                                 |   earnings per share               |

industry and the initial set of crucial variables for the wood products industry are listed in the following table, Table 20.

Following the conclusions of the industry's economics assessment, WPO's strategic profile continues with an appraisal of the industry's technology. "The technology is available or under developed for increasing the yield of lumber from logs, converting residues structural products more efficient engineering-use of wood, and improved pulping systems." These technologies contribute to the justification for intensified forestry, including genetic research.

One of the problems which plagued foresters is that changes in utilization and conversion occur within a few years, while the trees grow at a rate dependent upon nature, so that the forest management system gets out of step with the current wood conversion situation.

Technology is available to increase the per-acre harvest of wood fiber as much as 50 to 100 percent, to substantially increase the yields from logs at the mills, and to make greater efficient use of wood products in construction and manufactured items. The following research objectives have been identified by the Forest Service through their forest products utilization research program.

1. Design efficient and environmentally acceptable harvesting systems.
2. Economically use low-quality and dead trees and residues.
3. Extend the resource base and conserve energy by improving processing efficiency.
### TABLE 20

Initial Set of Crucial Variables and Key Performance Factors

**Crucial Variables**
- commercial forest land
- interest rates
- other building materials

**Key Performance Factors**

- **Crucial variable: commercial forest land**
  - key performance factors: ownership, management techniques used, integration

- **Crucial variable: interest rates**
  - key performance factors: residential housing mortgage rates, interest paid to savers, commercial loan rates for modernization and intensive management

- **Crucial variable: other building materials**
  - key performance factors: energy production costs, environmental costs, availability of other building materials
4. Devise more efficient and economical methods for wood construction and protection of wood in use.

5. Develop efficient, economical methods.

A significant omission in the current technological picture of the wood products industry is an in-depth awareness and recognition of what future-oriented architects are designing and the technology in building materials that will be required to implement the future oriented architectural designs. "An innovative architectural movement is now focusing on structures that are partially or full beneath the surface of the earth." New materials and techniques have freed architects from many past limitations. "Architects must recognize the growing need to protect people from unpleasant sights and noise and to provide simpler and more flexible personal space." New materials include plastics, new forms of steel, filament wound system, ferrocement, concrete, MACS extrusion process, and urthane foam. New technologies also are found in future-oriented building systems: kinetic structures, fiber glass sandwiched component systems, and modular housing.

The new materials and building systems help make a wide variety of structural forms both more possible and, in some instances, more desirable. These structures include the following: cellular structures, clip-on, plug-in architecture, bridge structures, diagonal structures, container structures, biostructures, marine structures, space structures, and fantasy structures.

These future oriented architectural design, some of which are possible now, are presented to illustrate that the wood products industry has noticeably failed to recognize possible changes in
traditional architecture and how the future-oriented architectural
design translate into building material requirements. This perhaps is the greatest technological threat to the wood products industry.

In conclusion, the technology that is taking place within the wood products industry appears to be directed on more cost-effective processes for the entire operation of harvesting the raw materials to production of the finished products. Computers are being integrated into the total system to enhance productivity. From the survey done for this research, it would appear that the majority of the technology efforts are based on the premise that building construction will follow along the traditional lines of the past.

From the technological assessment, the next area in the industry profile is an examination of the wood products industry social trends. Social trends which affect the wood product industry include the trend that Americans are becoming pro-sumers/do-it-yourselfers. Some implications for the wood products industry are that the wood products in the future will have to be of a size that an individual, and not a construction company, can easily handle. The pro-sumers movement is the result of more leisure time that Americans have. More leisure time places a greater emphasis on the nonmarket products of the forest—recreation, wilderness and wildlife and fish. Segments of the population have
and will become more aware that they are living in an ecological system with natural equilibriums that must be maintained. An intuitive observation from the research done is that the wood products industry is still perceived as a negative force in the environment by the general public. The general public is not aware of the positive changes that have taken place and are taking place in the wood products industry. The conclusions of the wood products industry's social trends would include increased ecological and environmental awareness by the general public and increased demand for the nonmarket products of the forest. It will be the wood products industry's responsibility of making the general public aware of the costs and benefits of such social trends.

The final area in the wood product industry profile is a review of the relevant political trends. A significant political trend is the decline in National Forests land through RARE II legislation. The continuing decline of commercial forest lands would increase lumber prices and decrease consumption (of lumber). The exact increase and decrease would depend upon the amount of land withdrawn and on the ability to increase imports from Canada. Congress holds the keys to unlock the potential growth on federal and private, non-industrial commercial forests. Steps to accomplish the realization of this potential growth would include the following:
1. Prompt and ultimate resolution of the RARE II program.
2. Applications of "reasonable limits" for further wilderness withdrawals.
3. Improvement of forest management practices on federal lands through increased funding of, and removal of manpower cutting from the United States Forest Service.
4. Incentives to encourage private, non-industrial woodlands owners to reforest and otherwise manage their land for commercial growth. These would include tax changes to stimulate investments and full funding for the Forestry Incentives Program.268

The wood products political trends conclusions end with a statement made in May, 1978, to Congressional members by the then National Forest Products Association President Gilbert L. Oswald.

We do not have a national policy regarding our forest lands. In the absence of that policy, those of us whose business forces us to look 30 to 100 years, in terms of our essential resource, are faced with some very real and basic uncertainties.269

Having looked at the economics, technological, social and political aspects of the wood products industry, the following is the industry's profile conclusions. The supply and demand of the wood products industry raw resource of timber has extraordinary impact on the industry. The supply is crucially linked to the composition of the commercial forest land ownership; the demands for wood products are crucially interwoven to the interest rates. Technology is directed toward more cost-effective and efficient production processes for the total system of harvesting through finished manufacturing. A noticeable gap in the wood products industry technology is an awareness of the implications of the
future-oriented architectural designs. Social and political trends have a strong interaction in the areas of increased demand for nonmarket products of the forests and the ability to meet those demands. The national leadership of the Forest Service will be encumbered by the political process under which it operates. The effectiveness of the current leadership does not appear to be changing nor can it be expected to change radically in the future; the Forest Service leadership will relatively remain status quo.

After the wood products industry profile, the strategic profile focuses on the micro level—the WPO's profile (WPO—an organization in the wood products industry). WPO's profile is the last stage of the strategic profile.

**WPO Profile**—The profile of WPO should provide a perspective of where WPO has been and of where it is at the present. WPO's profile follows the established format of looking at economics, technology, social and political trends.

The first area of focus in WPO's profile is its economics. WPO has timber holdings in the Pacific Northwest and in the South, both regions containing good commercial forest lands. WPO's production facilities are optimally near its timber base to minimize raw material transportation cost. The fiber requirement for WPO is equally obtained through its own timberlands and long-term leases. Through an aggressive capital expenditure program, which has been going on for the past three years and is projected to continue for
the next two, 75 percent of its wood production facilities, including sawmills and manufacturing plants, will be completely modernized and will have the state-of-the-art in cost-efficiency machinery. The remaining 25 percent of the facilities are being comprehensively reviewed for modernization or closure. Part of the capital expenditure programs has also been directed to increase WPO's timber holdings, both through purchase and long-term leases. A crucial part of the capital expenditure program has been the acquisition of a complementary wood products firm. The acquisition has strengthened WPO by broadening its product mix.

WPO's aggressive expenditure program was possible because of its good financial standing. For the past five years, the financial ratios have steadily improved through a strict control on all the facets of the organization and on the introduction of active planning on all operational levels. The finance department does a formal quarterly comparative analysis of financial ratios of WPO's major competitors vis-a-vis WPO.

Although WPO is not the largest producer in a specific wood product area, it steadfastly maintains the quality of its product at a comparative price. WPO has had a gradual but constant increase in its sales, market share, and profitability for the last five years. Part of this increase is attributed to the prudent acquisitions made during the recent capital expenditure program. Because of the integrity of WPO's product, loyalty to WPO is
excellent and users are believed to have a significant positive advertising influence. WPO ranks third with respect to sales in the top ten wood products organizations.

WPO economic objectives include maintaining a dynamic, healthy financial posture through the constant, solid increases in its sales. By achieving this financial objective, WPO will enhance the return to its stockholders. One of WPO's major financial strengths is its adequacy of its timber supply. WPO's timber supply is also a significant constraint since WPO does not control or has access to 100 percent of its fiber requirement. Another constraint is the disposition of its older, small production facilities. WPO has established the policy that non-competitive facilities will be closed or modernized. The predominant economic weakness is WPO's direct relationship to the cyclic residential housing construction industry. The residential housing industry is significantly influenced by interest rates and economic downturns. Another economic weakness for WPO is that it does not have as broad of a product mix as possible.

The economic assessment conclusion for WPO includes that WPO is one of the ten largest wood products organizations in the United States, with a significant amount of timber holdings upon which to supply its fiber requirements, although WPO is not entirely self-sufficient. WPO is not a market leader in any of its product markets, but its market position is solid with a constant growth
WPO's financial standing had constantly improved over the last five-years and is forecasted to continue its present trend. WPO's major weakness is its strong ties to the construction industry, which is cyclical in nature.

After an economical appraisal, WPO profile continues with its technological assessment. In the past five years, WPO has had a strong research and development program to seek out new and cost-effective methods of processing timber. The motto of WPO's research and development department has been not to assume that the future will be like the past. WPO's top management recognizes the strong correlation between a healthy research and development program and increased productivity. However, WPO research and development program is aggressive for the wood products industry, but in percentage terms with other manufacturing industries, WPO's research and development expenditures lag. The strength of WPO's research and development program is its ability to incorporate the lastest general technological advancements particularly in electronics. WPO technological strength is also reflected in its motto. Ironically, WPO major technological weakness has been the difficulty WPO has had of breaking away from the traditional concepts regarding the methods used in the total production cycle from the harvesting to the manufacturing of timber. Although WPO is perceived as having an aggressive research and development organization, expenditures for research and development have not
been optimal because of the priorities of its latest capital expenditure programs. However, the foundation for improvements in the technological area has been laid by WPO's top management commitment to a strong technological position.

Following WPO's technological assessment, WPO reviews its social trends. WPO believes in its employees and the fundamental requirement for its employees to grow. WPO believes that as its employees grow, so does WPO. WPO has become a more socially conscious member of its community by actively participating in community affairs. The example of community involvement is set by WPO's top management. WPO is also active in the wood products trade associations and their endeavor to increase public education about the forests and the wood products industry. WPO has made an encouraging effort for better relations with its unions, although work is still needed in this area. WPO predominant social constraint is that WPO has in overcoming the general public's traditional negative perception of the wood products industry in general. With this objective in focus, WPO has conducted seminars and field trips in its community and public schools, and has instituted "open houses" at some of its manufacturing facilities. In conclusion, WPO has significantly moved away from a social isolation attitude to one of being socially responsible to its community and environment.
The next appraisal done in WPO's profile is a review of its political trends. WPO keeps an accurate watch on government legislation regarding taxes and environmental and technological concerns. WPO is an active supporter of responsible legislation for the wood product industry. WPO has an aggressive policy for keeping legislators informed on what is occurring in the wood products industry. WPO is directly affected by federal legislation on discrimination, OSHA, and environmental issues. The discrimination legislation has turned out to be a strength because of the impetus it gave to WPO in assisting its employees to grow. The OSHA and EPA legislation have been translated into constraints because some of the regulations are not economically practical or realistic. In conclusion, WPO has become more politically active, particularly on the state level, and is a strong supporter of the wood products industry lobbying at the federal level. WPO sees the political trend of more regulation as continuing, thereby imposing constraints on WPO and the wood products industry in general. These regulations translate into higher operating costs and capital expenditures for WPO.

Succeeding the political assessment, WPO reviews its organizational structure to determine whether it supports WPO's strategy. Key questions to ask are whether WPO organizational structure is responsive to changes on a timely basis, to changes in the environment and to changes in its customers, and whether
there is a clear differentiation between WPO's staff and line functions. WPO has four staff functions—finance, research and development, marketing/sales, and human resources. WPO has four line functions—lumber, plywood, panel products other than plywood, and wood products other than lumber of panel products. A chain of command exists by the very nature of WPO's organizational structure. However, an informal atmosphere exists which helps to mitigate the formal structure. WPO company's information is disseminated through memos and personal contact. The timeliness of the information is an area that is being worked on. With a little research, WPO's management believes that its organizational structure is appropriate because of its constant growth the last five years.

The final area that is appraised in WPO's profile is the competency of its management. The management's strengths are believed to be the close attention to financial matters and the institution of planning at the divisional levels. One of the managerial weaknesses is the "hands-on" policy with which WPO is run. The primary managerial evaluation criteria are technical skills which managers possess and their leadership qualities. The bottom line is the continued profitability of WPO. There is no formal managerial training program. Usually the top managers have worked the way up through WPO. There has been reluctance to begin a formal training program because it was felt that an intimate
knowledge of the wood products industry and WPO was critical for WPO's top management.

WPO's profile conclusion states that WPO is a leading wood products organization with major timber holdings and a solid market position that has shown constant growth over the last five years. Through an aggressive capital expenditure program, 75 percent of its production facilities are modern and cost-effective. WPO's top management believes in a strong research and development program and it is anticipated that research and development expenditures will increase in the near future. Over the past five years, WPO has become more socially and politically responsible citizen in its community and its environment. The key performance factors for WPO are:

1. integration—the degree to which WPO controls all facets of its operation.
2. diversification of products—product mix so as to use as much of the raw material as possible.
3. cost-efficient processing facilities—particularly with respect to the energy efficiency with which wood products are manufactured for the construction industry.
4. effective marketing—the development of other significant markets, including exports, to diminish the impact of the cyclical construction industry's influence.
5. informing architects of the unique properties of wood, and of the technological advancements being made in the wood products industry.
6. aggressive research and development
   a. meeting new building material requirements for new styles of architecture
   b. development of new competitive, non-building products.
Following the conclusions of WPO's organizational profile is a consolidated conclusion of the entire strategic profile activity. The environment of WPO is expected to continue at a moderate growth, particularly in gross national product, disposable personal income, and population. Favorable demographics indicate a strong demand for housing for at least one decade, possibly two. With a good demand forecasted, the supply of the raw resource for WPO is critical. Some more reductions of federally owned commercial forest land from the National Forests are anticipated but no significant increase in the practice of intensive forestry management on either federal or private, non-industrial lands is projected. WPO plans to increase its own intensive forestry practices on the land it owns and leases, provided that there are favorable interest rates. As the supply of raw materials increase, WPO anticipates that wood products prices will increase. As costs increase, WPO forecasts that an increase in the concentration in the wood products industry will occur. If the concentration occurs, there would be the possibility that there would be a shift in the market structure from a monopolistic structure to an oligopoly structure. In general, wood products organizations are becoming more socially and politically aware of the impact of trends in society and politics. Technological advancements are expected to continue at a moderate pace and along the traditional lines of better utilization of timber. The majority of the wood products
will continue to be used in the construction industry. Research into other uses of wood will be limited. "Some few chemicals can be made from wood or wood byproducts. For the most part, however, chemicals are made more cheaply from natural gas or petroleum, and this will be true for decades." 275 "The main contribution of wood to our national materials and energy budget would be the use of wood to decrease our need for nonrenewable energy-intensive metal products. 276 Lastly, from the research done, it was judged that a significant impact would be felt in the wood products industry if wood was thought of in the context of a crop instead of a renewable natural resource. A crop connotes that which can be cultivated with the latest technology for increasing its yield; a renewable natural resource connotes something that cannot be easily replaced, even though there is a word "renewable" that is associated with it.

The consolidated strategic profile conclusions is the final step in the strategic profile activity. The next activity in the strategic planning process is the development of the strategic design.

**Strategic Design**

The strategic design is the third major activity in the strategic planning process. Strategic design is where WPO's strategic design is commenced, an independent assessment of the initial set of crucial variables must take place to ascertain
whether the crucial variables have remained appropriate. An intuitive assessment was made of the initial set of crucial variables of commercial timberland, interest rates, and other building materials. The conclusion of this analysis was that only commercial timberlands had remained appropriate as a crucial variable for WPO. "Ownership of timber resources will continue to be a critical component in the industrial success of most (wood products) companies in the integrated forest products and pulp and paper industries."277 Furthermore, "private lands hold (the) key to future timber supplies. Almost 3/4 of all productive timberlands in the United States is privately owned. . . Non-industrial private lands have the greatest potential,"278 because these owners "constitute 59 percent of the total of all commercial forest land in the United Staes,"279 and because "nonindustrial private tracts include a large share of the most productive sites and most accessible forests in the Nation."280 The two new crucial variables are technology and taxes. The crucial variables were changed because it was judged that interest rates and other building materials locked WPO into the traditional use of wood products. It was further judged that due to current future-oriented architecture, wood would not be a significant building material in the future as it had been in the past. Technology was selected because of the extraordinary impact it has on the type of end product which can be made from wood and because of the extraordinary impact technology has on the type of building materials which can be made with wood which would be compatible with
future architecture. Technology will also enhance the opportunity of the wood products industry to find its unique niche in the market. Although the technology exists for greater uses of wood today, future technology will create the opportunity to economically exploit the broader spectrum of wood usage. Taxes were selected because of their extraordinary impact on the cost of timber (capital gains taxes), investment tax credits, and reforestation tax benefits. The reforestation of commercial forest lands is crucial to the development of the full potential of the private, non-industrial commercial forests. Estate and gift taxes also have an extraordinary impact on the private, non-industrial commercial forests.

After the assessment of the crucial variables, the strategic design begins with the statement of the strategic premises for WPO. WPO's Strategic Premises—In WPO's strategic premises, WPO states what its set of crucial variables (commercial forests, technology, taxes) will look like in the future. WPO believes that the amount of commercial forest land will cease to decline and stabilize between 450-475 million acres. WPO does not believe that there will be any significant changes in the ownership of commercial forests; the current percentage for the federal government will remain the same and the wood products industry will take any opportunity to increase its timber holdings, primarily from the private, nonindustrial owners. All commercial forests will be
more intensively and integratedly managed. With more aggressive and optimal management, the fiber supplied by the commercial forest will increase at a minimum of 100 percent. Technologies will be developed to assist the optimal cultivation of wood as a crop. Technologies will also be developed to exploit the non-construction uses of wood. Through new technologies, "we can convert trees quickly and directly into oil through the cyclic application of heat and pressure in the presence of a catalyst. Plastics, motor fuel, and many other chemicals formerly produced from petroleum are now made from wood once wasted." New conversion processes will allow all wood supplies regardless of preconceived preference about species, size, or quality to be made into useful and profitable products. "Processing methods now produce wood in shapes and sizes desired by architects and engineers. Rearrangement of wood elements in reconstituted products give products stability, freedom from shrinkage, swelling, and warping, and the needed combination of strength." Appropriate tax laws will enable technologies to be developed, the realization of the full potential of both federal and private, non-industrial commercial forests through aggressive tax credits for intensively and integratedly managed forests. By achieving the optimal fiber potential of commercial forests, there will be sufficient supply of fiber to meet the demand for the various wood products. The United States will become self-sufficient in its fiber
requirements as well as developing an active export trade.

WPO's strategic premises give a macro scenario in which to develop its strategic purposes, which is the next activity in the strategic decisions.

**WPO's Strategic Decisions**—The first strategic decision is the selection of the strategic purposes. It is recognized that several alternative strategic purposes should be developed from WPO's strategic premises and that a decision model should be selected to evaluate which alternative strategic purposes would be most appropriate. The scope of its research does not permit a formal treatment of this sequence. The decision model judged to be most appropriate would be a combination of risk analysis, marginal analysis, and cost-benefit analysis. Criteria to be used in the decision model would include return on investment, risk of losing investment in scarce resources, company growth, contribution to social welfare and stability and security of employment for employees and/or executives. 

Also, because of the scope of this paper, only several examples of each step in the strategic planning process will be given for each activity performed. The examples illustrate the concept of how each succeeding step in the strategic planning process is built upon the precedent one; the examples are not meant to represent the total activity for each step. In the following table, Table 21, a graphic display of the strategic design and appropriate strategic programs is given.
TABLE 21

An Example of WPO's Strategic Purpose, Goals, Objectives, Policies, Procedures and Rules

Strategic Purpose: WPO is to be a socially acceptable organization that anticipates and provides the demanded and needed products by society that are available from wood.

Strategic Goal: WPO is to have an aggressive research and development department.

Strategic Objectives: 1. Research and development is to develop technology to manufacture building materials out of wood which will meet future architecture designs.
2. Research and Development is to develop nonbuilding materials out of wood that will meet the future needs of society.
3. Research and development is to develop processes that utilize 100 percent of its raw materials.

Strategic Policies: 1. Research and development will concentrate on hardwood technology.
2. Research and development will focus on cost and energy efficient processing techniques.
3. Research and development will focus on fast-growing, high-density and yield tree technology.

Strategic Goal: WPO is to have environmentally and ecologically acceptable operational facilities.

Strategic Objectives: 1. WPO is to have cost-efficient pollution controls which exceed government standards.
TABLE 21 - Continued

2. WPO is to educate legislators and the general public as to the direct cost to them in the price of wood products of what 100 percent pollution free processes would be.

3. WPO is to support environmental and ecological research on the impact of the residual pollution of its processing facilities.

4. WPO is to have an aggressive reforestation program on both its own and on its leased lands.

Strategic Policies: 1. There will be a dynamic coordination and cooperation between research and development and the processing operations to insure that they are mutually compatible.

2. WPO will have an active public relations program in its community.

3. WPO will have positive relationships with legislators.

Strategic Procedures: 1. Information will be disseminated to the public through the following channels:
   a. Advertisements in periodicals and community news media.
   b. "Open Houses" at facilities where possible.
   c. Displays at shopping malls.
   d. Addresses given to community service organizations.
   e. Presentations at all levels of public and private schools.
TABLE 21 - Continued

2. The legislator information procedures will be:
   a. Congressional members - home state
      --annual/semi-annual
      meeting
      --monthly newsletter and current update
      --special newsletter for significant developments
      --placement on Congressional mailing list.
   b. Congressional members who interest and/or expertise are significant to WPO
      --annual meeting in Washington, D.C.
      --monthly newsletter
      --special newsletter on pending hearing or legislation
      --placement on Congressional mailing list
   c. State legislators
      --semi-annual meeting
      --monthly newsletter
      --special newsletter on significant legislation

Strategic Rules: 1. Meetings will be with home state Congressional members when they are in state.
2. Meetings with non-state Congressional members will be one-month prior to annual meeting.
3. Meeting with state legislators will be coordinated with Congressional members.
4. An abbreviated report will be prepared for each legislative meeting.

Strategic Goal: WPO is to have a sophisticated information system.
TABLE 21 - Continued

Strategic Objectives: 1. WPO is to have a cost-effective information system.
2. WPO management information system is to gather relevant and timely data.

Strategic Goal: WPO is to increase its supply of fiber.

Strategic Objectives: 1. WPO will have an integrated wood products organization.
2. WPO will practice intensive silviculture.
3. WPO will be an aggressive advocate of tax laws which will benefit intensive silviculture.
4. WPO will incorporate a more comprehensive and appropriate measurement of its wood fiber.

Strategic Policies: 1. WPO will have a diversified product mix policy
2. WPO will have an aggressive reforestation policy
3. WPO will have a policy of looking at wood as a source of raw materials instead of specific harvested products (sawtimber, pulpwood).

Strategic Procedures: 1. WPO will use a metric volume measurement for its fiber inventory.
2. WPO will have the following product mix:
   --lumber
   --veneer
   --fiberboard
   --pulp
   --rayon
   --wood alloy
   --alcohol
   --plastics
   --lignin fuel
TABLE 21 - Continued

2. WPO reforestation will follow:
   --site preparation
   --growing stock control
   --weed control
   --irrigation
   --short rotation
   --genetically improved species

WPO's Strategic Purpose—WPO's strategic purpose is to be a socially acceptable organization that anticipates and provides the needed products by society from wood. Once WPO has decided its strategic purpose, WPO proceeds to develop its strategic goals.

WPO's Strategic Goals—WPO strategic goals is the third activity in the strategic design and is the second activity in the strategic decisions. WPO's strategic goals specify which activity or task must be accomplished in order to achieve its strategic purpose. The following are WPO's strategic goals:

1. WPO is to have an aggressive research and development department.
2. WPO is to have environmentally and ecologically acceptable operational facilities.
3. WPO is to have a sophisticated information system.
4. WPO is to increase its supply of fiber.

After the strategic goals have been stated, the next step in the strategic design is the statement of WPO's strategic objectives.

WPO's Strategic Objectives—WPO's strategic objectives are the quantification of its strategic goals. WPO's strategic objectives are the last step in its strategic design. The following are some of WPO's strategic objectives:

1. Research and development is to develop technology to manufacture building materials out of wood which will meet future architectural needs.
2. Research and development is to develop nonbuilding materials out of wood that will meet the future needs of society.
3. Research and development is to develop processes that utilize 100 percent of wood.

With the quantification of WPO's crucial variables in its strategic objectives, WPO has completed its strategic design, the third activity in the strategic planning process. From WPO's strategic design, WPO continues in its strategic planning process to the development of its strategic programs.

**WPO's Strategic Programs**

WPO's strategic programs are the fourth major activity performed in the strategic planning process. In WPO's strategic programs, WPO outlines a written course of action for the long-term operation of its organization. The strategic programs focus on the key performance factors. The key performance factors are those long-range variables which are critical. The key performance factors are the crucial measures of success of an organization. In the following table, Table 22, the revised set of crucial variables and the key performance factors are listed.

There are five strategic programs: strategic organizational structure, policies, procedures, rules, and budgets. A graphic display of the strategic programs, except strategic organizational structure, is given in a preceding table, Table 21.

**WPO's Strategic Organizational Structure**--The first activity in WPO's strategic programs is the development of its strategic organizational structure. Because WPO desires to incorporate maximum flexibility in its operations in order to be able to appropriately respond to
**TABLE 22**

Revised Set of Crucial Variables and Key Performance Factors

<table>
<thead>
<tr>
<th>Crucial Variables</th>
<th>Key Performance Factors</th>
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<tbody>
<tr>
<td>Commercial forest land</td>
<td>integration (systems interaction)</td>
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<tr>
<td></td>
<td>intensive forestry management</td>
</tr>
<tr>
<td>Technology</td>
<td>cost and energy efficient processing</td>
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<td></td>
<td>development of new products</td>
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<td></td>
<td>building</td>
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<td></td>
<td>non-building</td>
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<td>Taxes</td>
<td>capital gains taxes</td>
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<td>individuals</td>
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<td></td>
<td>businesses</td>
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<td></td>
<td>investment tax credit</td>
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<td></td>
<td>plant</td>
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<tr>
<td></td>
<td>intensive forestry management</td>
</tr>
</tbody>
</table>

its changing environment, a new strategic organizational structure was designed. Table 23, which follows Table 22, gives a graphic view of WPO's new strategic organizational structure. After the strategic organizational structure has been designed, WPO formulates its strategic policies.

WPO's Strategic Policies--WPO's strategic policies are the second step in the development of the strategic programs. WPO's strategic policies give general guidelines to actions and thinking. Some of WPO's strategic policies are:

1. Research and development will concentrate on hardwood technology.
2. Research and development will focus on cost and energy efficient processing techniques.

A preceding table, Table 21, gives the sequence from the strategic purpose to the strategic policies. The next step in WPO's strategic programs is a statement of its strategic procedures.

WPO's Strategic Procedures--WPO's strategic procedures are the third activity in its strategic programs and is the activity that follows its strategic policies. Through WPO's strategic procedures, sequential guidelines are given which detail how a certain activity is to be accomplished. Some of WPO's strategic procedures are:

1. Information will be disseminated through the following channels:
   a. Advertisements in national periodicals and community media.
   b. "Open House" at facilities, where possible.
   c. Displays at shopping malls.
   d. Addresses given to community service organizations.
   e. Presentations at all levels of public and private schools.
<table>
<thead>
<tr>
<th>TABLE 23</th>
</tr>
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<tbody>
<tr>
<td><strong>WPO STRATEGIC ORGANIZATION STRUCTURE</strong></td>
</tr>
</tbody>
</table>

**CEO**

**Research & Development**
- Basic Field Research
  - cellulose
  - lignin
  - genetics
- Project Teams for Applied Development
- Pilot Plant Activities
  - Conversion
  - Processing
  - Energy

**Strategic Planning**
- Planning
  - Environment
  - Industry
- Systems Interactions
  - Special Coordinator Implementation

**Public Relations**

**Finance**
- Human Resource
  - Employment Planning
  - Employment Recruitment
  - Career Development
  - Compensation and Protection
  - EEO
  - Unions

**Human Resource**
- Government
  - Congress
  - State
  - Municipal
- Community
  - Media Service Organizations
  - Public Education
  - MCS
  - MIS

**Budgetary Non-Budgetary**

**Operations**
- Fiber Supply
  - Land maintenance
  - Seedlings
  - Reforestation
  - Thinning
  - Harvesting
  - Fire, Insect Control
  - Transportation
- Building Materials
  - Solid Panel
  - Composite Distribution
- Nonbuilding Materials
  - Chemicals Alcohol
  - Plastics
  - Wood Sugar
  - Rayon
  - Wood Alloy
  - Lignin Fuel

**Pulp and Paper**
- Office Products
  - White Cardboard Containers
- Marketing Research
  - Building Materials
  - Nonbuilding Materials
  - Pulp and Paper

**Sales Promotion**
- Territory
  - Pacific
  - Rocky Mtn.
  - South
  - Midwest
  - East
- International
  - Europe
  - Far East
  - South America

**Sales**

| 191 |
A preceding table, Table 21, gives an example of the strategic planning process from strategic purpose to strategic procedures. From WPO's strategic procedures, WPO continues its strategic programs with statements of its strategic rules.

WPO's Strategic Rules—WPO's strategic rules are the fourth activity in its strategic programs. WPO's strategic rules specify what action or nonaction is required for a given situation. Among WPO's strategic rules are the following:

1. Meetings will be with home state Congressional members when they are in-state.
2. Meetings with non-state Congressional members will be one month prior to annual report.
3. Meetings with state legislators will be coordinated with Congressional members.
4. An abbreviated report will be prepared for each legislative meeting.

Other examples of WPO's strategic rules may be found in a preceding table, Table 21. Following WPO's strategic rules are WPO's strategic budgets.

WPO's Strategic Budgets—WPO's strategic budgets are the last phase of its strategic programs. In its strategic budgets, WPO organizes its assets and allocates them at the strategic level. WPO's strategic budgets would allocate its resources for research and development, forest management techniques, and an active legislative function.

In its strategic budgets, WPO concentrates on its goals and strategic programs vis-a-vis its available assets. By doing
this, WPO places stress on the desirability of assessing costs against benefits in selecting the best strategic programs which will accomplish its strategic goals. Characteristics of strategic programs are a total dollar amount needed to accomplish a strategic goal over a long-range (multi-year) time span. Implicit in the strategic budgeting process is a sophisticated estimate of WPO's cash flow over the length of the time of a strategic budget. For example, WPO has estimated that its cash flow over the next 10 years would be $2 billion. Using this as a premise, WPO selected the following strategic budgets:

- Research and Development Strategic Budget $500 million
- Commercial Forest Land $1.25 billion
- Public Affairs Legislative and General Public $250 million

With the development of its strategic budgets, WPO has completed its strategic programs. The next major strategic planning activity for WPO is the development of its strategic controls.

**WPO's Strategic Controls**

WPO's strategic controls are the fifth major activity in the strategic planning process. The two primary activities of WPO's strategic controls are the development of its strategic management information system and its strategic management control system. The first activity discussed is the strategic management information system, which will be designated as MIS for the remainder of this discussion.
WPO's Strategic Management Information System—WPO designs its strategic MIS for continuous input of its data requirements. The following two tables give a graphic display of the MIS and an example of the data sources from which the MIS might draw. The MIS is found in Table 24 and the data sources are listed in Table 25; both of which follow immediately. After WPO designs its MIS, WPO then develops its strategic management control system, which will be designated as MCS for the remainder of this discussion.

WPO's Strategic Management Control System—The strategic MCS is the second activity of strategic controls. The fundamental difference between the strategic MIS and the Strategic MCS is the primary purpose of a MIS is to inform and the primary purpose of a MCS is to evaluate. To be most effective, WPO's strategic MCS must be forward oriented. The following tables, Table 25 and Table 26, give a conceptual model of a forward feed control system and Table 27 is an example of a "cash feed-forward control," or a forward feed cash budget. A cash budget is one type of strategic budgetary control.

The essence of the feedforward control system is the periodic measurements of the performance of crucial variables at critical points in the life of an organization prior to the actual expected results. By monitoring the critical points prior to the expected results, the variances are identified in time for corrective action to take place so that the expected results can be achieved.
TABLE 24
WPO's Strategic Management Information System

<table>
<thead>
<tr>
<th>Environment</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>future-oriented publications</td>
<td>Forest Products Review</td>
</tr>
<tr>
<td>Congressional Quarterly</td>
<td>Standard and Poor's Industry Surveys</td>
</tr>
<tr>
<td>Wall Street Journal</td>
<td>Value Line or Moody's</td>
</tr>
<tr>
<td>Business Week, other appropriate business publications</td>
<td>wood products trade association</td>
</tr>
<tr>
<td>Monthly Labor Review</td>
<td>National Forest Products Association</td>
</tr>
<tr>
<td>major governmental reports: Global 2000 Report, the Assessment and Program by Forest Service</td>
<td>Forest Industry Council</td>
</tr>
<tr>
<td></td>
<td>Western Wood Products Association</td>
</tr>
<tr>
<td></td>
<td>Southern Forest Products Association</td>
</tr>
<tr>
<td></td>
<td>selective trade publications</td>
</tr>
<tr>
<td></td>
<td>Annual and quarterly reports of major competitors</td>
</tr>
<tr>
<td></td>
<td>financial studies done by leading brokerage firms</td>
</tr>
<tr>
<td></td>
<td>private, non-commercial organizations which are concerned with wood Resources for the Future, Worldwatch.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WPO</td>
</tr>
<tr>
<td></td>
<td>internal data</td>
</tr>
<tr>
<td></td>
<td>financial</td>
</tr>
<tr>
<td></td>
<td>market research</td>
</tr>
<tr>
<td></td>
<td>external</td>
</tr>
<tr>
<td></td>
<td>marketing research</td>
</tr>
</tbody>
</table>

TABLE 26

Feedforward Management Control System

INPUT

Corrective Action

Regular
Input Variables
Influences on
input variables

Periodic Measurement
and Analysis of Variance
effect (if any) on
desired end results

Desired
End
Results

Unusual and/or
unexpected
disturbances
that would
have a
significant
impact on
the system
and desired
results

SOURCE: Harold Koontz and Cyril O'Donnell, Management: A
Systems and Contingency Analysis of Managerial
TABLE 27

Feedforward Cash Control

<table>
<thead>
<tr>
<th>Sales</th>
<th>Direct labor costs</th>
<th>Factory burden costs</th>
<th>Direct material costs</th>
<th>Sales expenses</th>
<th>Administrative expenses</th>
</tr>
</thead>
</table>

- Profit before taxes
- Depreciation
- Capital expenditures
- Tax payments

- Cash on hand, July 1, 1975
- Bank loan level
- Accounts payable level
- Accounts receivable level
- Inventory level

- Purchases delivered
- Factory material usage
- Input from factory production
- Product design changes
- Deliveries to customers

Cash level desired, Oct. 1, 1975

Having insured the overall performance of the organization, WPO strategic planning process continues with WPO's strategic comparisons.

**WPO's Strategic Comparisons**

In its strategic comparisons, WPO evaluates its internal dynamics vis-a-vis the changing external world. WPO takes its premise of being a socially acceptable organization that anticipates and provides the demanded and needed products by society that are available from wood and appraises whether the premise is remaining appropriate vis-a-vis events in the environment and the conclusions from WPO's strategic controls. WPO's strategic design is analyzed vis-a-vis WPO's strategic profile and controls. If there are significant variations, the adjustment mechanism becomes operational by recognizing that the alteration of a plan has a systems interaction on the total plan.

From the strategic or macro level of WPO, the planning progresses to the derivative planning stage where WPO's develops its operational plans.

From the strategic or macro look at WPO, WPO now focuses its planning on the day-to-day or operational level. This is accomplished by formulating WPO's derivative decisions, programs, controls, and comparisons. Due to the scope of this paper, an example of this derivative planning process will be illustrated.
The concept behind the derivative planning process is identical to the strategic planning process. The derivative planning process descends from the derivative premises, purposes, goals, objectives, policies, procedures, rules, and budgets.

**Derivative Decisions and Programs**

The first step in WPO's operational planning is the derivative decisions—derivative purposes, goals, and objectives—and the derivative programs—derivative organizational structure, policies, procedures, rules, and budgets. The following table, Table 28, gives an illustration of what the operational planning might be like for WPO's research and development department. An example of a derivative organizational structure for the research and development function is found in Table 29, which follows Table 28. The derivative budgets for the research and development department could include the following:

1. revenue and expense budget
2. time, space and material budgets
3. cash budgets
4. capital expenditure budgets

With the derivative budgets, WPO's derivative programming is completed. Having developed its derivative decisions and programs, WPO's derivative planning continues with the development of its derivative controls and comparisons.
TABLE 28

WPO's Derivative Planning Process—Research and Development
Operational Planning

Derivative Premise: Technology will provide for cost effective building materials which will be appropriate for future architectural designs.

Derivative Purpose: Research and development is to develop technology to manufacture building materials out of wood which will meet future architectural design.

Derivative Goals: The research and development department will conduct basic research.

Derivative Objectives:
1. WPO will have basic research for genetics.
2. WPO will have basic research for cellulose.
3. WPO will have basic research for lignin.

Derivative Policies:
1. Research will be conducted on an effective basis
2. Research will seek out more effective ways to utilize hardwoods.
3. WPO will seek ways to obtain insect resistant trees.
4. WPO is to develop fast growing trees with acceptable fiber properties.
5. Research and development will be offensively oriented.
6. Research and Development will focus on obtaining a 100 percent self-sufficiency of energy needs by use of wood residues.
TABLE 28 - Continued

Derivative Rules: 1. Research and development will be on a cost-effective basis.
2. No more than 20 percent of a researcher's time will be spent for independent research in wood products.
3. Research and development will be considered privy information.

### TABLE 29
Research and Development Organizational Structure

#### Research and Development Department

<table>
<thead>
<tr>
<th>Basic Field of Research</th>
<th>Project Teams for Applied Development</th>
<th>Pilot Plant Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Cellulose</td>
<td>- Building Materials</td>
<td>- New Non-building Products</td>
</tr>
<tr>
<td>- Lignin</td>
<td>- Processes</td>
<td></td>
</tr>
<tr>
<td>- Genetics</td>
<td>- New Building Materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Energy Self-Sufficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Non-building Conversion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Processing</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 29**
Research and Development Organizational Structure
WPO's Derivative Controls and Comparisons

WPO's derivative controls and comparisons are the micro aspect of informing, evaluating, and insuring that WPO remains appropriate to its environment. WPO would develop an operational information system and operational control system for its research and development department. WPO's research and development department's information system may be similar to its strategic management information system, but does not have to be. However, WPO's research and development control system should be consistent with its strategic management control system yet be appropriate to the research and development department. The research and development control system should not be a mechanical stepdown of the strategic management control system. Although the research and development department should have some flexibility in developing its own control system, the control system must be compatible with the strategic management control system.

In WPO's research and development comparison activity, results from WPO's research and development department's operational decisions, programs, and controls are compared against WPO's strategic design to insure that WPO's research and development department is remaining appropriate. If there are any significant variances that surface during this comparison, the adjustment mechanism becomes operational. Because of the scope of this paper, the actual derivative planning for WPO's research and development
department will not be performed. The results of WPO's derivative comparisons are inputs into the strategic controls. With the development of WPO's derivative controls and comparisons, WPO's strategic planning is completed.

WPO's actual strategic planning is the first half of the formation of its adequate strategic planning model. The second half of WPO's adequate strategic planning model is an evaluation of how well WPO did its strategic planning.

**WPO's Strategic Planning Evaluation**

WPO's strategic planning evaluation is the second half of WPO development of an adequate strategic planning model. For convenience, the following tables, Table 30 and Table 31, give the format for the evaluation of a strategic planning model as developed in Chapter IV. Following these Tables, Table 32 gives an example of the strategic planning which was done by WPO.

After establishing the fact that WPO did do strategic planning, WPO continues its evaluation with the following activities.

1. How sophisticatedly/how well was each strategic planning activity done?
2. Were WPO's strategic planning results implemented into WPO?
3. How frequently was WPO's strategic planning done?

Because of the scope of this apper, only brief comments will be made regarding these topics. Since WPO recognizes and is committed to a dynamic strategic planning process, WPO
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>&quot;Was a philosophical position stated? If so, what was it?&quot;</td>
</tr>
<tr>
<td>2.</td>
<td>&quot;Was a strategic profile done? If so, what were the conclusions?&quot;</td>
</tr>
<tr>
<td>3.</td>
<td>&quot;Was a strategic design done? If so, what were the strategic premises, purposes, goals, and objectives?&quot;</td>
</tr>
<tr>
<td>4.</td>
<td>&quot;Were the strategic programs done? If so, what were the strategic organizational structure, policies, procedures, rules, and budgets?&quot;</td>
</tr>
<tr>
<td>5.</td>
<td>&quot;Were the strategic controls done? If so, what were the management information and the management control system?&quot;</td>
</tr>
<tr>
<td>6.</td>
<td>&quot;Were the strategic comparisons performed? If so, did the organization remain appropriate to its environment?&quot;</td>
</tr>
<tr>
<td>7.</td>
<td>&quot;Were the derivative decisions and programs done? If so, what were the derivative purposes, goals, objectives, policies, procedures, rules, and budgets?&quot;</td>
</tr>
<tr>
<td>8.</td>
<td>&quot;Were the derivative controls and comparisons done? If so, were the day-to-day operations the desired performance planned for and did the derivative aspects of the organization remain appropriate to its environment?&quot;</td>
</tr>
</tbody>
</table>
TABLE 31

Evaluation Format: "How Well was the Strategic Planning Done?"

<table>
<thead>
<tr>
<th>Strategic Planning Activity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Position</td>
<td>Strategic Comparisons</td>
</tr>
<tr>
<td>Strategic Profile</td>
<td>Derivative Decisions and Programs</td>
</tr>
<tr>
<td>Strategic Design</td>
<td>Derivative Controls and Comparisons</td>
</tr>
<tr>
<td>Strategic Programs</td>
<td></td>
</tr>
<tr>
<td>Strategic Controls</td>
<td></td>
</tr>
</tbody>
</table>

Analysis Performed on EACH Activity

1. How sophisticatedly was the planning done?
   a. What were the techniques and tools used in doing the planning?
      statistical          economical
      operations research   financial
      human resources
   b. What was the quality of the data?
      primary—internal, external
      secondary
      Was the data timely?
      Did the data supply the required information?
   c. Who was involved in the planning?
      internally?
      externally?

2. Was each activity reviewed?
   a. Was each part of the activity examined to see if further analysis was required?
   b. If a further analysis was done, what were the results?

NOTE: The analysis has to be done for each activity in the strategic planning process.
TABLE 32

WPO's Strategic Planning

<table>
<thead>
<tr>
<th>Philosophical Position</th>
<th>Pro-growth bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crucial Variables</td>
<td>Commercial forest landTechnologyTaxes</td>
</tr>
<tr>
<td>Strategic Premises</td>
<td>1. Commercial forest land will stabilize2. All commercial forests will be more intensively and integratedly managed.3. Technologies will be developed to assist the optimal cultivation of wood as a crop.4. Technologies will also be developed to exploit the non-construction uses of wood.5. Appropriate tax laws will be passed to enable technologies to be developed and to realize the full potential of both private and public forest lands.</td>
</tr>
<tr>
<td>Strategic Purpose</td>
<td>WPO is to be a socially acceptable organization that anticipates and provides the demanded and needed products by society that are available from wood.</td>
</tr>
<tr>
<td>Strategic Goals</td>
<td>1. WPO is to have environmentally and ecologically acceptable operational facilities.2. WPO is to have a sophisticated information system.3. WPO is to increase its supply of fiber</td>
</tr>
<tr>
<td>Strategic Objectives</td>
<td>1. WPO is to have cost-efficient pollution controls which exceed government standards.</td>
</tr>
</tbody>
</table>
2. WPO management information system is to gather relevant and timely data.
3. WPO will have an integrated wood products organization.

**Strategic Policies**

1. Research and development will concentrate on hardwood technology.
2. There will be a dynamic coordination and cooperation between research and development and the processing operations to insure that they are mutually compatible.
3. WPO will have a diversified product mix policy.

**Strategic Procedures**

1. Information will be disseminated to the public through the following channels: (see p. 39)
2. WPO will use a metric volume measurement for its fiber inventory.

**Strategic Rules**

1. Meetings will be with home state and Congressional members when they are in-state.
2. An abbreviated report will be prepared for each legislative meeting.

**Strategic Budgets**

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Development</td>
<td>$500 million</td>
</tr>
<tr>
<td>Commercial Forest Land</td>
<td>$1.25 Billion</td>
</tr>
<tr>
<td>Public Affairs</td>
<td>$250 Million</td>
</tr>
</tbody>
</table>

**Strategic Organizational Structure**

See Table 23, p. 190.

**Derivative Planning**

strives for a proper mix of techniques (statistical, financial, and others) in its strategic planning process. Particular attention is made to keep any one technique or tool from dominating the strategic planning process. Both external and internal data is used as well as secondary data. All activities in WPO's strategic planning process were reviewed. The importance of the implementation of WPO's strategic planning results is found in the special coordinator in the strategic planning department, whose primary responsibility is to be a resource person for WPO vis-a-vis the implementation of WPO's strategic plans. In WPO's strategic planning department, the strategic planning activity is an on-going process which continuously collects data and makes comparisons of what is actually happening both inside and outside WPO. This completes the evaluation part of the strategic planning activity.

In conclusion, WPO is judged to have an adequate strategic planning process. However, WPO realizes that its strategic planning activity must continually be sensitive to its dynamic environment and cannot place its strategic planning process on a pedestal, never to be changed. WPO recognizes the need for keeping its strategic planning process appropriate.

Summary

The purpose of this chapter was to derive an adequate strategic model for an organization in the wood products industry.
WPO was designated to represent an organization in the wood products industry. The first half of deriving an adequate strategic planning model for WPO was to perform the strategic planning process. The strategic planning process followed the adequate strategic planning model developed in Chapter IV. This model had the following major activities.

- Philosophical Position
- Strategic Profile
- Strategic Design
- Strategic Programs
- Strategic Controls
- Strategic Comparisons
- Derivative Decisions and Programs
- Derivative Controls and Comparisons

WPO has a pro-growth bias for its philosophical position.

Included in the conclusions from the strategic profile are the following:

1. GNP is expected to continue at a moderate growth rate.
2. Demographics point to a strong housing demand for the decade of the 80s.
3. Commercial forest lands will stabilize at slightly below the current acreage.
4. There will be increased consolidation within the wood products industry because of the continuing increases in all costs, particularly the cost of timber.
5. Building materials will continue as the predominant end use of wood products.

From the strategic profile, WPO develops its strategic design, programs, controls, comparisons as well as its supportive, operational planning which is done in the derivative planning level. The following list of tables will give a review of these
activities:

Strategic Design and Programs  
Tables 21, 23 on pages 182 and 190.

Strategic Controls  
Tables 24, 26 on pages 194 and 196.

Derivative Decisions and Programs  
Tables 28 and 29 on pages 200 and 202.

The second half of developing an adequate strategic planning model for WPO is an evaluation of WPO's strategic planning. Using the evaluation format developed in Chapter IV and found in the preceding tables, Tables 30 and 31 on pages ... and ..., an evaluation was performed on WPO's strategic planning. From the evaluation, it was judged that WPO's strategic planning was adequate.
FOOTNOTES - CHAPTER V


201. Ibid.


209. Herman Kahn, World Economic Development: 1979 and Beyond, pp. 446, 455.


211. Ibid.

Ibid.


The Global 2000 Report to the President: Entering the Twenty-First Century, p. 16.


Ibid.

The Global 2000 Report to the President: Entering the Twenty-First Century, p. 16.


Ibid.


Ibid., p. 8.


Ibid., p. B 111.


Ibid.

Ibid., p. 9.

Ibid., p. 5.

Ibid., p. 9.

Ibid., p. 5.

Ibid., p. 9.

Ibid.

Ibid., p. 6.

Ibid.

Ibid.

Ibid.


Ibid., p. 75.

Ibid., pp. 123-124.

Ibid., p. 128.

Ibid., p. 84.

Stone, "Outlook for Wood Products Requirements," p. 5.
252. Walter Adams, The Structure of American Industry, p. 120.
255. Ibid., p. 4.
260. Ibid.
265. Ibid., p. 238.
266. Ibid., pp. 238-245.


Ibid.


Ibid.


Harry J. Kane, "The 1980s—What's in Store for the Forest Products Industry?"


Ibid.

Ibid., pp. 5-3—5-4.


287 Ibid., p. 174.

288 Ibid.


290 Koontz and O'Donnell, Analysis of Managerial Functions, pp. 659-660.
CHAPTER VI

ANALYSIS OF THE CURRENT STRATEGIC PLANNING
IN THE WOOD PRODUCTS INDUSTRY

In this Chapter, the adequacy of the current strategic planning being done by the wood products industry is analyzed. The term "wood products industry" is being used to define the United States wood products industry. The wood products industry are those public and private organizations which are involved, associated, or concerned with wood products in the United States. The analysis of the adequacy of the strategic planning by the wood products industry is performed using the derived model in Chapter V as the standard.

This chapter begins with a discussion of the wood products industry. Following the discussion is the analysis of the strategic planning being done by the wood products industry. Evaluations will be performed on the Forest Service (federal government), Resources for the Future (private, non-trade organization), Boise Cascade, Champion International, and Georgia-Pacific (commercial wood products organization). No analyses were performed on state government agencies because it was judged that planning done by
the state agencies associated with the wood products industry was heavily dependent upon the federal government. The analyses of trade associations were not performed because data from these agencies were not gathered. The first area of this Chapter is the discussion of the wood products industry.

**Wood Products Industry**

Although the scope of this research is focused on the wood products industry in the United States, it is recognized that there are global organizations which are engaged in strategic planning for the wood products industry. One of the global organizations which is involved in this task is the Food and Agriculture Organization, Forest Division, of the United Nations. Because of its global perspective, it brings into sharp focus the world's developing nations' view of wood products—namely that wood's primary use is for fuelwood. Wood products are major industries in Sweden and Finland. Finland is known for its advanced techniques. In his book, *World Forest Resources* (1976), the Swedish analyst Reidar Persson has given the most complete global survey of forests available. Also, during the last decade, two impressive and advanced integrated wood products ventures have been started in Brazil.

The global systems interaction of the world's forest will have a greater significance in the future because of the...
increasing demands for wood products. It was judged from the research done that the total global systems interaction has not received the emphasis it should have from the wood products industry. The most significant foreign influence on the wood products industry is the amount of wood products that the United States receives annually from Canada.

From looking at the global wood products industry, a review is made of the United States wood products industry, beginning with the federal government. The primary federal organization involved and concerned with wood products is the Forest Service, which is under the U.S. Department of Agriculture. The Forest Service is composed of three main branches. The first branch is the National Forest System which manages the 154 National Forests. The second branch is State and Private Forestry, which "provides technical assistance to state foresters and private land owners." The last branch is Research, which is "charged with such diverse long-term objectives as protecting our natural resources, increasing timber supply, and enhancing outdoor recreation opportunities in both rural and urban areas." The U.S. Bureau of Land Management is the other major federal agency involved with the management of the federal forests. Other federal agencies which manage national forests include the Bureau of Indian Affairs, the National Park Service, and the U.S. Department of Defense.
From the federal level of the wood products industry, a review is taken at the state level. State governments own 1.3 percent of the commercial forests land.\(^{298}\) An intuitive judgment of this research is that most of the activity in the wood products industry at the state level is associated with schools of forestry and/or natural resources located in the individual states. The following schools were contacted for this research: School of Forest Resources, University of Georgia; School of Forestry and Wood Products at Michigan Technological University; School of Forestry and Wildlife Management, Louisiana State University; Forest, Wildlife and Range Experiment Station, University of Idaho; College of Forest Resources, University of Washington; College of Natural Resources, Utah State University; School of Forest Resources, Mississippi State University; Department of Forestry, Michigan State University; and the School of Forestry, Oregon State University. It was judged that because of the states' small portion of commercial forests that the influence exerted by the states would not be significant. Therefore, research in this area was minimal.

After looking at the wood products at the state government level, the next wood products industry's organizations reviewed are the wood products industry's trade associations. The selection of wood product trade associations from the multitude that exist
was biased toward those dealing primarily in wood products. The agencies contacted during the research include the Forest Products Research Society, American Forest Institute, National Forest Products Association, American Wood Council, American Plywood Association, Society of American Foresters, Forest History Society at Yale University, Trees for Tomorrow, American Forestry Association, and Western Wood Products Association. From the data that was obtained from these associations, it was judged that none were significantly involved in strategic planning. During the research, it was found that a serious omission was made by not contacting the Forest Industry Council and their associate, the Forest Industries Advisory Council. The Forest Industries Advisory Council does strategic planning.

Following the wood products trade association, some of the private, non-trade organizations in the wood products industry are Resources for the Future and Worldwatch Institute. Resources for the Future has more of a national perspective while Worldwatch Institute has more of a global bias. Because this research is concerned with the wood products industry in the United States, Resources for the Future was judged to be the most appropriate private, non-trade organization.

The last category in the wood products industry are the commercial organizations. The major commercial wood products
organization are Boise Cascade, Champion International, Crown Zellerbach, Diamond International, Evans Products, Georgia-Pacific, International Paper, Potlatch Corporation, and Weyerhaeuser. From the perspective of this research, it was judged that the major, integrated wood products organizations that would be representative of the commercial wood products organizations vis-a-vis their product mix, location, and size were Boise Cascade, Champion International, and Georgia-Pacific.

In conclusion, the wood products industry is comprised of those public and private organizations which are involved with or concerned with wood products. For the purpose of this research, the wood products industry's organizations were divided into five categories: federal organizations, trade organizations, private, non-trade organizations, state organizations, and commercial organizations. Having defined the wood products industry, the essence of this research is presented: the analysis of the current strategic planning being done by the wood products industry. The analysis will be performed on the Forest Service (the federal government); Resources for the Future (private, non-trade organization); and Boise Cascade, Champion International, and Georgia-Pacific (commercial organizations). The strategic planning analysis will follow the format found in the following tables, Tables 33 and 34 (These tables are identical to those in Chapter IV, Tables 15 and 16.). The standard for the analysis is the derived
TABLE 33

Evaluation Format for "Was Strategic Planning Done?"

1. Was a philosophical position stated? If so, what was it?

2. Was a strategic profile done? If so, what were the conclusions?

3. Was a strategic design done? If so, what were the strategic premises, purposes, goals, and objectives?

4. Were the strategic programs done? If so, what were the strategic organizational structure, policies, procedures, rules, and budgets?

5. Were the strategic controls done? If so, what were the management information system and the management control system?

6. Were the strategic comparisons performed? If so, did the organization remain appropriate to its environment?

7. Were the derivative decisions and programs done? If so, what were the derivative purposes, goals, objectives, policies, procedures, rules, and budgets?

8. Were the derivative controls and comparisons done? If so, were the day-to-day operations the desired performance planned for and did the derivative aspects of the organization remain appropriate to its environment?
TABLE 34

Evaluation Format: "How Well was the Strategic Planning Done?"

<table>
<thead>
<tr>
<th><strong>Strategic Planning Activity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophical Position</td>
</tr>
<tr>
<td>Strategic Profile</td>
</tr>
<tr>
<td>Strategic Design</td>
</tr>
<tr>
<td>Strategic Programs</td>
</tr>
<tr>
<td>Strategic Controls</td>
</tr>
</tbody>
</table>

**Analysis Performed on EACH Activity**

1. How sophisticatedly was the planning done?
   a. What were the techniques and tools used in doing the planning?
      - statistical
      - economical
      - operations research
      - financial
      - human resources
   b. What was the quality of the data?
      - primary—internal, external
      - secondary
      - Was the data timely?
      - Did the data supply the required information?
   c. Who was involved in the planning?
      - internally?
      - externally

2. Was each activity reviewed?
   a. Was each part of the activity examined to see if further analysis was required?
   b. If a further analysis was done, what were the results?

**NOTE:** The analysis has to be done for each activity in the strategic planning process.
model developed in Chapter V. The strategic planning of the Forest Service will be the first analysis done.

Analysis—Strategic Planning Done by the Forest Service (Federal Government)

The first analysis of the current strategic planning being done in the wood products industry is the analysis of the strategic planning being done by the Forest Service. The Forest and Rangeland Resources Planning Act of 1974 as amended by the National Forests Management Act of 1976 directs the Forest Service to do an assessment of the forest and rangelands every 10 years and to develop programs based on the assessment for the purpose of the management of the National Forest System every 5 years.

The strategic planning being done by the Forest Service is found in The 1980 Report to Congress on the Nation's Renewable Resources and the two supporting technical documents USDA Forest Service: An Assessment of the Forest and Range Land Situation in the United States and USDA Forest Service: A Recommended Renewable Resources Program. These documents were based on the RPA Review Draft: An Assessment of the Forest and Range Land Situation in the United States and RPA Review Draft: Alternative Program Directions 1981 - 2030.

From the research done, it was judged that the Forest Service's Strategic Planning is divided into two parts: The Assessment and the Recommended Renewable Resource program. It
must be noted that the strategic planning done by the Forest Service covers more than just wood products. For this research, only the part of the Assessment and Recommended Program which dealt with wood products was analyzed. This focus on strictly the wood products does cause a bias in the analysis.

The primary documents used in the strategic planning analysis of the Forest Service was The 1980 Report to Congress on the Nation's Renewable Resources. The RPA Review Draft: An Assessment of the Forest and Range Land Situation in the United States was used for detail data. The term The 1980 Report will refer to The 1980 Report to Congress on the Nation's Renewable Resources and the term RPA Review Draft Assessment will refer to the RPA Review Draft: An Assessment of the Forest and Range Land Situation in the United States for the remainder of this paper.

The first step in the analysis of the strategic planning done by the Forest Service is the statement of their philosophical position and an identification of their crucial variables. Based on the research done, an explicit statement of the Forest Service philosophical position was not found. An implicit philosophical position could be derived: the philosophical position of the Forest Service may be said to reflect that of the Administration under which the strategic planning was done. If this premise is accepted, then the Forest Service may be said to have had a bias
toward the limits to growth polar position at the time the Assessment was done.

A political implication of the limits to growth polar position is government regulation. From the implicit environment of this research, it was felt that the Administration under which The 1980 Report was developed had a limits to growth bias.

From the philosophical position activity, the analysis continues with the strategic profile. The Assessment was judged to be a quasi-strategic profile.

As directed by Congress, the Assessment is primarily concerned with prospective trends in supply and demand of renewable resources; the economic, social and environmental implications of these trends; the resource base; and the opportunity to manage and use its resource base in ways which will enhance the quality of life of present and future generations.301

It was judged from the analysis of the research that the Forest Service's crucial variables are population, gross national product, disposable personal income, environmental factors, energy costs, and the availability of capital.

The conclusion of the Assessment is that "the forest . . . situation described in the Assessment indicates that our Nation faces a future where the demands for renewable resource products are growing more rapidly than our supplies.302

The third step in the strategic analysis is to evaluate the strategic design. The Forest Service assumptions about the future are the equivalent to strategic premises. The "assumptions
about future economic social, and environmental trends" are stated in Table 35, which follows.

Based on the strategic premises given in Table 35, the Forest Service strategic decisions (strategic purposes, goals, and objectives are found in Table 36, which follows Table 35. A caveat is in order. The strategic decisions found in Table 36 were the results of the analysis and are presented as a non-exhaustive list.

The activity following strategic design and the fourth activity in the strategic planning process is strategic programs. Table 37, which follows Table 36, gives a summary of the Forest Service's strategic programs. The strategic policies of the Forest Service were centered around fourteen issues and are found in Table 38, which follows Table 37. Further statement of the strategic planning process of the Forest Service is beyond the scope of this research.

This concludes the results of the Forest Service's strategic planning. The evaluation continues and follows the format in Table 34.

From the analysis done, it was concluded that most of the tools and techniques used in the Forest Service strategic planning are economic. In an interview with Forest Industries, the current chief of the U.S. Forest Service, Max Peterson, made the following comment. "We recognize the need for better multi-purpose models"
<table>
<thead>
<tr>
<th>Crucial Variables</th>
<th>Strategic Premises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Population of the United States will increase another 81 million by 2030. The annual rate is declining now and is expected to decline to about 0.3 percent by 2030.</td>
</tr>
<tr>
<td>Gross National Product</td>
<td>Gross national product will double by 2000 and double again by 2030. The portion derived from manufacturing and construction will decline while the share derived from transportation, trade, and other services will increase.</td>
</tr>
<tr>
<td>Disposable Personal Income</td>
<td>Disposable personal income will closely follow the trend of gross national product. This, coupled with the projected increase in population, means more purchasing power for more people.</td>
</tr>
<tr>
<td>Environmental Factors</td>
<td>Environmental restrictions on industry will continue to increase. The significance of this trend may be reduced by necessary trade offs between environmental concerns and economic needs.</td>
</tr>
<tr>
<td>Energy Costs</td>
<td>Energy costs will rise faster than other prices in general.</td>
</tr>
</tbody>
</table>
TABLE 35 - Continued

| Capital Availability | Sufficient capital will be available to support the intensified use of forests . . . and the increased output of renewable resources products. |

TABLE 36

The Forest Service Strategic Purpose, Goals, and Objectives

Strategic Purpose: The Forest Service is to provide national leadership in forestry and ... in improving the national environment.

Strategic Goals: 1. The Forest Service Goal is to influence in some way the management of much of the forests ... in the country, from the largest National Forests to the smallest private woodlot.
2. The Forest Service goal is to increase the supply of wood.
3. The Forest Service research goals are to develop new and better ways to increase the production of timber on forest land and at the same time to find ways to more effectively achieve amenity and environmental values.

Strategic Objectives: 1. The Forest Service objective is to encourage and support more production on private land.
2. The Forest Service objective is to reduce waste and to increase efficiency in utilization where possible.
3. The Forest Service objective is to increase the total growth of timber and forage.

### TABLE 37

**Recommended Program - High and Low Bound Levels**

**Projected National Forest System activities and cost**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Sales</td>
<td>Billion board feet</td>
<td>12.2</td>
<td>High</td>
<td>11.9</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>11.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Reforestation</td>
<td>Thousand Acres</td>
<td>411.3</td>
<td>High</td>
<td>460</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>345</td>
<td>382</td>
</tr>
<tr>
<td>Timber Stand Improvement</td>
<td>Thousand Acres</td>
<td>420</td>
<td>High</td>
<td>338</td>
<td>408</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>286</td>
<td>250</td>
</tr>
<tr>
<td>Workforce Staff</td>
<td>Thousand Staff Years</td>
<td>40.3</td>
<td>High</td>
<td>52.5</td>
<td>68.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>52.8</td>
<td>53.5</td>
</tr>
<tr>
<td>Total Appropriated NFS Costs</td>
<td>Million Dollars</td>
<td>1666</td>
<td>High</td>
<td>1666</td>
<td>2359</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>1827</td>
<td>1852</td>
</tr>
</tbody>
</table>
TABLE 37 - Continued

State and Private Forest activities and cost

<table>
<thead>
<tr>
<th>Activity</th>
<th>Thousand Acres</th>
<th>Million Cubic Feet</th>
<th>Million Dollars</th>
<th>Thousand Staff Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber Reforestation</td>
<td>326 High 545 Low 1079</td>
<td>275 High 375 Low 687</td>
<td>117 High 89 Low 136</td>
<td>3.1 High 3.5 Low 3.6</td>
</tr>
<tr>
<td>Stand Improvement</td>
<td>275 High 375 Low 687</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timber Prepared for Harvest</td>
<td>225 High 237 Low 302</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total cost - State and Private Forests</td>
<td>117 High 89 Low 136</td>
<td>111 High 202 Low 135</td>
<td>275 High 5.4 Low 3.6</td>
<td>3.1 High 3.5 Low 3.6</td>
</tr>
<tr>
<td>Research</td>
<td>1085 High 111 Low 135</td>
<td>3.1 High 3.5 Low 3.6</td>
<td>3.1 High 3.5 Low 3.6</td>
<td>3.1 High 3.5 Low 3.6</td>
</tr>
</tbody>
</table>

Research Appropriated

<table>
<thead>
<tr>
<th>Activity</th>
<th>Million Dollars</th>
<th>Thousand Staff Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1085 High 111 Low 135</td>
<td>3.1 High 3.5 Low 3.6</td>
</tr>
</tbody>
</table>
TABLE 37 - Continued

Projected Budget - Total Forest Service (Allocated and Appropriated)

<table>
<thead>
<tr>
<th>Unit of Measure</th>
<th>Range</th>
<th>1981</th>
<th>1985</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Million Dollars</td>
<td>High</td>
<td>1866</td>
<td>2738</td>
<td>2766</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2098</td>
<td>2180</td>
<td></td>
</tr>
</tbody>
</table>

Dollars given in 1978 constant dollars.

**Table 38**

Forest Service Strategic Policies

**User Payment for Recreational Opportunities**

The Forest Service will work toward increasing user fees, over time, to bring them in line with actual direct costs. Increased receipts would recover more of the operation and maintenance costs and reduce competition with the private sector.

**Recreation Development on National Forest System Land**

The Forest Service will continue current recreation policies which emphasize dispersed recreation while continuing to provide developed recreation on National Forest System land. New emphasis will be placed on energy efficiency in recreation use and development by making recreational opportunities on National Forest System lands more accessible, usable, and enjoyable for urban residents.

**Alternative Means for Financing Capital Development on National Forest System Land**

The Forest Service will continue to rely on traditional sources, but it also will continue evaluation to determine whether any alternative financing modes would provide significant increases in the net worth of National Forest programs not attainable through traditional funding authorities.

**Eastern National Forests**

The Forest Service will continue the present policy of administrative decentralization, utilizing land management planning systems consistent with national guidelines.

**Forest Service Emphasis on Wildlife and Fish**

The Forest Service will increase emphasis on wildlife and fish in the management of the National Forest System. Other forest landowners will be encouraged to practice multiple-use management. The Agency will encourage the consideration of wildlife in developing State comprehensive forestry plans.
TABLE 38 - Continued

Forage for Domestic Livestock

The Forest Service range program will emphasize improvement and maintenance of land productivity for grazing and other resource uses consistent with production efficiency and market value of forage. In areas with significant low income and minority dependency, forage resources would continue to contribute to the quality of life. In addition, emphasis will be placed upon research, development, and application of livestock grazing programs on National Forest System lands to encourage livestock production on private forested ranges.

Mineral Development on National Forest System Land

The Forest Service will expand its capabilities to facilitate minerals explorations on National Forest System lands. The review process of withdrawn lands will be accelerated through land management planning. Emphasis will also be placed on supporting the modification of the 1872 Mining Law. The Agency will continue research programs to develop and apply methods for mining and reclamation, to provide technical assistance, and to cooperate with other Federal, State, and private land managers.

Production of Wood from Private, Nonindustrial Forest Land

Forest Service programs will provide for: (1) improved market and price reporting information; (2) developing an analytical base for improving the cost-effectiveness of existing assistance programs; (3) continuing current levels of technical and financial assistance until additional data on program effectiveness are developed that justify change; (4) pilot forestry loan programs (subject to congressional authorization); and (5) studying tax alternatives that could enhance incentives for improved management.

Increasing Softwood Products from National Forest System Land

Present policies will be continued, including the President's directive to update land management plans on selected National Forests with the objective of increasing the harvest of mature timber through departure from the current nondeclining even-flow policy. Timber tradeoffs made in land allocation decisions and through multiple-use constraints will be carefully considered as part of land management planning. Commensurate with these actions, Forest Service programs will provide for increased
TABLE 38 - Continued

investments in intensive timber management, with priority on better sites to the extent that these opportunities are cost effective.

Management of Hardwoods

Forest Service Research and State and Private Forestry programs will provide more detailed resource information. Hardwood programs will remain at present levels until increases can be justified on a cost-effective basis.

Expanding Wood Supplies Through Improved Technology and Utilization

The Forest Service will increase its research, development, and application programs to expand wood supplies through improved technology and utilization. Where efficient, National Forest System timber sale policies will be modified to encourage increased utilization.

Wood Fiber as an Energy Source

Forest Service programs will be expanded beyond current activities where economically efficient to contribute to the goal of increasing the use of wood for energy.

Export and Import of Raw Logs

The present policy of maintaining restrictions on log exports from Federal lands will continue in support of local employment and in response to public comment.

Pesticide Use, Research, and Registration

Present policies will be continued; that is, to use pesticides only when deemed essential to meet management goals, and to develop, practice, and encourage the use of integrated pest management (IPM) methods.

and have work underway at Resources for the Future and Duke University on economic models. Further support for this conclusion comes from an article by George A. Craig, in Forest Industries, August, 1979.

Economic analysis was used for the first time by the U.S. Forest Service planners in analyzing and establishing potential timber harvest levels for a national forest (for the RPA Review Draft Assessment) ... The use of economic objectives such as maximizing present net worth or benefit appears to be very useful in scheduling timber activities or for allocating land.

The use of economic analysis is an improvement over the traditional Forest Service practice of relying primarily on biologic considerations.

The 1980 Report is strongly market oriented. "An integrated approach is being used which combines a spatial economic market model with a biological growth model for the resource base ... The model consists of sets of supply and demand equations."

Further support for the heavy reliance on economic analysis in the Forest Service's strategic planning is the following statement from an article by George A. Craig entitled "Economic Analysis: A Better Way to Guide Federal Timber Programs," "The economists are telling us that timber harvest should be scheduled so that timber will be held only to be point where the expected gain from holding it will exceed the cost of such holding." Economists are also concerned with "an optimal mix of output without maximizing any particular one; the economist is
interested in the sum of all invested resources to bring the
highest possible aggregate benefits over time." Thus, economics,
in the broader sense, "is the study of social choice in allocation
of scarce resources to maximize human welfare," and "not simply
the science of commerce, nor even of market exchange."

The Forest Service took an important step forward in its
leadership of the national forest by instigating the use of economic
theory over its traditional biologic methods. However, economics
is not the panacea which is going to solve the inadequacies of the
past planning methods of the Forest Service.

The Forest Service has deliberately ignored or seriously
misused economics in planning and implementing virtually
every program. The Forest Service has consistently
used concepts of supply and demand totally at odds with
accepted economic theory. The agency (Forest
Service) also uses a confusing concept of demand.
The missing ingredient has been and still is--the
concept that competitive market forces will balance
supply and demand over time through changing prices and
utilization practices.

"We need to alter radically our concept of forestry in general,
and practice of public forestry, in particular." The
Forest Service needs to exercise its professional judgment, which
"must be supported from three directions: on-the ground managers,
who must make most of the judgments; the strongly localized
constituency--forest users who know and care about and are
affected by land management decisions; and the economists."

However, economists also do not achieve adequate strategic
planning as exhibited by the derived model because of their over
emphasis on economic tools, regardless of how sophisticated they are. This is not to say that economics is unimportant; economics can provide unique insights. What is being said is that the entire strategic planning of the Forest Service should not be solely based on economics. The missing concept is management. "Management is the art of directing, controlling, or altering something—in this case, the forests." Although the economist recognizes that the dynamic market forces determine supply and demand, they (the economist) do not achieve adequate strategic planning because their economic conceptual basis does not sensitize them to the fact that the nature of the market forces change as the nation's economic, technological, social, and political environment changes.

Timber management is a long-term investment in which there is no annual or immediate return. Not all the demands on the forests now, however, will necessarily be the same demands we make in the distant future . . . We need to conserve our flexibility, their (the forests) ability to serve a variety of uses in the years to come . . . We all need to make ourselves more aware of the management conflicts. We need to see how our personal demands on the forests are related to national and world demands.

Economics have also been delinquent in the critical area of technology. In the report "Research Priorities for Eastern Hardwoods," "one of the main findings . . . is that much existing technical information on methodology, in both silvicultural and manufacturing areas, is not being used because good costs and returns data are not available."
The data used for the Assessment and Report consisted of both primary and secondary data as well as internal and external. The following table, Table 39, contains a representative list of sources used in the RPA Review Draft Assessment and the RPA Review Draft Alternative Programs.

In conclusion, the Forest Service needs to adopt a futurist management orientation to achieve the effective leadership of the nation's forests. However, to be completely equitable the Forest Service is not its own master. This significantly impacts on its operations.

Under RPA, you'll recall, the U.S. Forest Service suggests basic policy direction, which is fine-tuned by the Secretary of Agriculture and sent to the congressional appropriations committees with the President's good housekeeping seal of approval. Of course, no President has ever embraced the RPA program. Neither have the environmentalists.

From the research conduct, it is suggested that what is needed is less bureaucratic intervention in order to allow the Forest Service to be about its business of providing leadership for the nation's forests.

Having concluded the evaluation of the strategic planning of the Forest Service, which represents the federal government, the analysis continues with a scrutiny of the Resources for the Future, a private, non-trade wood products' organization.
### TABLE 39

RPA Review Draft and Program Data Sources

#### Federal Government

- USDA 1975 Assessment
- Council of Economic Advisors, Department of Commerce
- Forest Statistics of the U.S., 1977. USDA, Forest Service
- US Department of Commerce, Bureau of Census
- US Department of Interior, Bureau of Land Management
- Bureau of Indian Affairs
- US Department of Defense
- US Environmental Protection Agency

#### Other

- State of California, Division of Forestry
- American Geographical Society
- Journal of Forestry
- Forest Products Journal
- American Forests
- TAPPI
- University of Minnesota, College of Forestry
- Unasylva

Analysis - Strategic Planning by Resources for the Future

Resources for the Future is a nonprofit organization for research and education in the development, conservation, and use of natural resources, and for the improvement of the quality of the environment.

The first step in the analysis of the strategic planning done by Resources for the Future is the search for their philosophical position and identification of their crucial variables. Based on the research done, an explicit statement of a philosophical position was not found. It was judged that Resources for the Future has a pro-growth bias. It was further judged that Resources for the Future also has a strong economic bias. Because of Resources for the Future's economic bias, their crucial variables are primarily economic factors dealing with supply and demand. The economic factors judged to be the crucial variables are the cost of the wood output, the cost of the nonwood output, the volume of wood output, and the volume of nonwood output.

From the identification of the crucial variables, this analysis continues with a scrutiny of the Resources for the Future strategic profile.

As the nation expanded westward, the lumber from the forest provided a major share of the building materials. In more recent times, the forests have come to be more appreciated for their watershed, wildlife, recreation, wilderness, and aesthetic values. 

*Forests as a Land Use*—After a long and substantial decline in forest land area from 1800 onward, forest area has been approximately stabilized since 1920. The establishment
and extension of the national forests in the decade before and the decade after 1900 established a permanent federal ownership. The public-private division of forest land ownership has been stabilized during the past few decades. **Inventory of standing timber** — The volume of timber standing on an area is a function of the age of the trees as well as the forest species or type, the climate, the soil, and other factors. The great decline in inventories of standing timber greatly disturbed many foresters and others, throughout the 19th century and well into the 20th century. Even today many devoted conservationalists see only the cutting of the old stands and the resultant slash and waste, and the fires, while largely ignoring the substantial growth.

**Net Timber Growth** — The real dramatic historical change in American forests has been the increase in annual net growth. No real estimates of annual growth of timber nationally are available until 1900 when total wood growth was estimated at 6 billion cubic feet annually. By the 1970s, net annual growth had increased to more than 18 million cubic feet and by 1977 had increased to almost 22 billion cubic feet.

**Timber harvest** — The total timber harvest increased throughout the 19th century to a peak just after 1900. Fully as striking as this trend in total wood utilization was the shift in end uses of wood. Wood was the basic fuel in the United States until well into the latter 19th century. Once electricity was generally available in rural areas, fuel wood consumption nose-dived. Lumber, the next big use of wood, was especially dominant in the last quarter century of the 19th century and the first quarter of the 20th century. Since World War II, lumber production and consumption have . . . remained fairly high and fairly steady at levels not greatly below the level of the early 1900s. Plywood, pulp, and veneer have become major wood uses in the last 50 years or so. While wood is no longer the dominant construction material it once was, its use in various forms continues to increase. Per capita consumption figures reflect changing total population as well as timber harvest and timber trade.

**Price of wood products** — The price of wood products such as lumber and paper includes not only the cost of price of the wood raw material but also the cost of other inputs such as labor, capital, and management. Much of the cost of such products delivered to the consumer consists of transportation costs, either from wood to mill or from mill to consumer, as well as the actual transportation costs from log to product. The rate of rise in (lumber) price has not been uniform. Prices were relatively stable from 1800 to about
1932, and from 1950 to about 1967; they rose rather steadily and steeply from 1818 to 1845, from 1966 to perhaps 1911, and from 1932 to 1946; World Wars I and II were periods of more or less sustained fall in real price of lumber. There has been a long upward trend in lumber prices in terms of constant dollars. Lumber has frequently been cited by economists as one raw material whose real price, in terms of commodities in general, has risen steadily and persistently over the decades.

Forest outputs other than wood—In addition to wood, which is often the primary output, forests contribute wildlife, watershed, wilderness, esthetic, recreation, and other values. Despite attempts to discuss all forest outputs on an equal plane, discussions inevitably get down to wood first and often wood alone, for a simple lack of data on other outputs.

The future—A few major conclusions.

1. The total area of the United States is no largely stabilized.
2. The volume of standing timber—the inventory—will continue to increase modestly over the next few decades or longer.
3. The trend toward increasing annual timber growth will continue, perhaps accelerate.
4. There will be an increasing spread between relatively extensive natural forest management, . . . and much more intensive forest management on the more productive sites.
5. The use trends in wood products will continue to be diverse.
6. For a few decades at least, trends in real prices are likely to continue as they have been in the past 30 years or so.
7. Public interest and concern about the nonwood outputs of the forests will continue to increase. There is a good reason to believe that the role of forests in American life will increase in importance in the next several decades.

Having concluded the strategic profile, this analysis of the strategic planning of Resources for the Future continues with an examination of their strategic design.

Resources for the Future strategic premises are based on the fact that Resources for the Future believes that the physical basis exists for a greatly increased annual growth of wood. With
this general assumption, Resources for the Future believes that a significant portion "of the physical potential growth can be economically rewarding under the likely supply-demand relationships." Resources for the Future believes that "if there could be a general agreement on a long-run program for timber growing, then many of the current problems arising out of timber harvest and out of competition for forest land use would have a clearer guide for their solution." Following Resources for the Future strategic premises are their statements of their strategic purposes. Resources for the Future strategic purposes are to implement high intensity management of the better forest sites so long as there is a reasonable prospect of obtaining profit and to defer harvest or withdraw from harvest less productive forest land as well as some acreage of higher productive forests. Resources for the Future's planning is based on the "Site classes" as defined by the Forest Service. "Forest site productivity class: a classification of forest land in terms of potential cubic foot volume growth per acre at culmination of mean annual increment in fully stocked stands." Site class refers to land capable of producing a specified cubic feet of timber growth per acre per year: Site I--165 cubic feet or more of timber growth; Site II--120-165 cubic feet of timber growth per acre per year; Site III--85-120 cubic feet of timber per acre per year; Site IV--50-85 cubic feet of timber per acre per year; and Site V--20-50 cubic feet of timber per acre per year.
Given the strategic purposes, Resources for the Future strategic goals are:

1. Intensive forest management would be applied on a selective basis. Intensive forest management is defined as artificial seeding or planting as general practice, including site preparation, high order fire control, thinning to extent and on timing necessary, fertilization, and high order genetic improvement.\^327

2. Natural stand forestry would be applied to less productive forest lands or forest lands that would be owned or operated by owners unable or unwilling to invest management, labor, and capital necessary for high intensive forest management.

3. Deferred timber harvesting would be considered, in general, on forests of less than average productivity, on forests owned by organizations not well equipped or not desirous of maximizing economic yield, and on forests on which there is often today a considerable volume of old growth (but often rather low quality) timber which has never been cut or at least not cut for several decades.

4. Withdrawal from harvest of some forests, including some for reserved areas and some for timber management plans as areas temporarily withdrawn.\^328

From the above strategic goals, Resources for the Future strategic objectives are found in the following table, Table 40. An example of one of the strategic objectives of Resources of the Future, as given in the following table, Table 40, is of the forest land that is held by commercial organizations in the wood products industry which are classified as Site Classes I through III, 80 percent of these lands would be managed for profit with intensive management as defined in the strategic goal 1 (see footnote 327).

Because not all firms could or would adapt such intensive forest management, 20% of such forests are assumed to have "natural stand" management; the stands would be natural stands with full natural stocking, but other intensification measures would not be adapted.\^329
### TABLE 40

Resource for the Future Strategic Objectives

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Site to III</th>
<th>forest</th>
<th>industry</th>
<th>all public</th>
<th>other</th>
<th>private</th>
<th>% of total forest area in each management class 1/</th>
<th>annual wood growth - billion cubic feet</th>
<th>Forest acreage - million acres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>intensive</td>
<td>natural</td>
<td>deferred</td>
</tr>
<tr>
<td>I</td>
<td>forest</td>
<td>80</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>6.0</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>II</td>
<td>industry</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td></td>
<td>0</td>
<td>5.8</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>III</td>
<td>all public</td>
<td>20</td>
<td>40</td>
<td>40</td>
<td></td>
<td>0</td>
<td>7.4</td>
<td>3.2</td>
<td>12.1</td>
</tr>
<tr>
<td>IV</td>
<td>forest</td>
<td>50</td>
<td>40</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0.9</td>
<td>5.2</td>
<td>0.2</td>
</tr>
<tr>
<td>V</td>
<td>industry</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0.6</td>
<td>5.2</td>
<td>0.1</td>
</tr>
<tr>
<td>all</td>
<td>all public</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0.6</td>
<td>5.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

The strategic design for Resources for the Future which has just been discussed is an illustration of the strategic planning that Resources for the Future is suggesting that should be considered as the national forest policy. Further discussion of the strategic planning done by Resources for the Future is beyond the scope of this research.

In conclusion, the Resources for the Future strategic planning is significantly biased toward economic analysis because of their emphasis on supply curves and productivity of marginal lands. A major source of the data that is used by Resources for the Future was obtained from the Forest Service, and other federal sources. However, Marion Clawson, in *Forest Policy for the Future*, makes an extremely appropriate comment of the data obtained from the Forest Service.

It would be extremely helpful if there existed facts and analysis showing the volumes of various kinds of wood that could and would be produced at varying prices per cubic foot. Such analysis to be accurate and meaningful, should be based on economically relevant classification of forest sites, on which the growth response to different intensities of forest management were known, and for which accurate cost data were available. No such analyses have been made in the past.

Based on the research done, Resources for the Future did not analyze any technological, non-economic social, or political factors vis-a-vis wood products. None of these factors are found in their strategic profile or strategic design. Based on the
data obtained, information was not available to analyze the complete strategic planning process as was defined by the derived model in Chapter V.

An accurate comparison of the output of the forests between the federal government and Resources for the Future could not be made because the Forest Service describes the output of the forests in specific forms, such as sawtimber, and Resources for the Future "utilizes cubic feet of fiber, in total, annually, or per acre." It was judged that looking at wood in general, instead of specific forms or products, would provide a more comprehensive perspective as to the complete output of the forests. It was also judged that Resources for the Future's position of "in the future, more and varied uses of wood fiber will become more important " is an accurate assumption. In the literature dealing with the strategic planning of Resources for the Future, no information regarding the sophistication was found. However, in other literature examined, there was the mention of sophisticated econometric models that Resources for the Future was developing for the federal government. There was also not found any information on the frequency with which Resources for the Future does strategic planning. An overall impression of the purpose of Resources for the Future was to provide a different perspective on wood products from that which is stated by the federal government. Most of the data used by Resources for the Future were secondary.
As stated at the beginning of the analysis, Resources for the Future's primary purpose is research and education. It was judged that *Forest Policy of the Future* offered the best example of what Resources for the Future would do vis-a-vis strategic planning of all of the literature obtained from Resources for the Future; however, this book was published in 1974. The conclusion of this research is that the strategic planning done by Resources for the Future was not adequate as critiqued by the derived model in Chapter V.

The analysis of the adequacy of the current strategic planning done by the wood products industry continues with the analyses of three commercial wood products organizations. The commercial wood products organizations analyzed are Boise Cascade, Champion International, and Georgia-Pacific.

**Analysis - Strategic Planning by Commercial Wood Products Organizations**

The analyses of the commercial organizations in the wood products industry are based on the 1979 Annual Reports of the respective companies.

**Analysis - Strategic Planning done by Boise Cascade**

The first commercial wood products organization analyzed is Boise Cascade. The following table, Table 41, outlines the strategic planning done by Boise Cascade as found in its 1979
<table>
<thead>
<tr>
<th>Philosophical Position</th>
<th>Pro-growth bias</th>
</tr>
</thead>
</table>
| Crucial Variables      | 1. Gross national product  
                          | 2. Federal monetary policy  
                          | 3. Management |
| Strategic Premises     | 1. There will be good prospects for paper and related businesses in the future.  
                          | 2. There would be a robust housing demand during most of the 1980 decade as the post war baby boom reaches the home-buying age. |
| Strategic Purpose      | 1. To optimize the company's long-term value to their shareholders and to society. |
| Strategic goals        | 1. To substantially improve and expand in paper and building materials.  
                          | 2. To achieve a strong financial position.  
                          | 3. To develop a good management team that combines experience with youth and depth.  
                          | 4. To develop the ability to function effectively in a complex business environment.  
                          | 5. To implement an effective strategic planning process. |
| Strategic objectives   | 1. To become one of the top return-on-equity performers.  
                          | 2. To have a planning process which aims at capitalizing on Boise Cascade's strength. |
### Table 41 - Continued

#### Strategic Programs

| Strategic Policies | 1. To increase dividends  
|                    | 2. To add productive capacity  
|                    | 3. To increase operating efficiency  
|                    | 4. Each division must operate profitably, earning at least its cost of capital on incremental investments. |

<table>
<thead>
<tr>
<th>Strategic Procedures</th>
<th>data base was insufficient to obtain them</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic rules</td>
<td>data base insufficient</td>
</tr>
<tr>
<td>Strategic budgets</td>
<td>as defined in Chapter IV, research did not come up with any</td>
</tr>
</tbody>
</table>
Annual Report. The strategic organizational structure for Boise Cascade is found in the following table, Table 42. An example of the derivative planning done by Boise is found also in a following table, Table 43.

From the research done, there was no data available regarding the tools and techniques used by Boise Cascade in their strategic planning.

In conclusion, Boise Cascade's strategic planning process as compared to the derived model in Chapter V has several significant deviations. Boise Cascade's strategic planning has a dual beginning.

Our planning begins with an in-depth review of each of our businesses at the divisional level. Also an annual planning process begins in May when an economic scenario is issued which represents top management's view of what national economic conditions will be over the coming five years.

Based on the description of their strategic planning process as found in their 1979 Annual Report, Boise Cascade's strategic design is composed of strictly economic premises of the future. It was also judged that the essence of the strategic planning for Boise was focused on the divisional level. It was also judged that the function of top management is to synthesize the various department's capital and income budgets, using a pessimistic perspective vis-a-vis the departments income budgets. The decision model for the strategic purposes was financial in
### TABLE 43

Boise Cascade Derivative Planning - An Example

<table>
<thead>
<tr>
<th>Key Performance Factors</th>
<th>Derivative premises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Near capacity utilization of plants, especially paper and pulp facilities.</td>
<td>1. The white paper market will experience fast growth</td>
</tr>
<tr>
<td>2. Interest rates - mortgage savings</td>
<td>2. For 1980</td>
</tr>
<tr>
<td>3. Inflation</td>
<td>a. There will be a 1.5 negative real growth in GNP</td>
</tr>
<tr>
<td>4. Cost-effective production facilities</td>
<td>b. Inflation will be at 10 percent or higher</td>
</tr>
<tr>
<td>5. Housing starts</td>
<td>c. There will be a tight monetary policy.</td>
</tr>
<tr>
<td></td>
<td>d. There will be a 300,000 decline in housing starts as compared to 1979.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Derivative purposes</th>
<th>Derivative goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paper, packaging, and office products added capacity will be done to add the most improvement per investment dollar.</td>
<td>1. Paper Group—to expand in high growth markets where Boise Cascade will be positioned well.</td>
</tr>
<tr>
<td></td>
<td>2. Paper Group—to expand in high growth markets where Boise Cascade will be positioned well.</td>
</tr>
<tr>
<td></td>
<td>3. Paper Group—to develop specialty markets.</td>
</tr>
<tr>
<td></td>
<td>Derivative objectives</td>
</tr>
</tbody>
</table>
TABLE 43 - Continued

<table>
<thead>
<tr>
<th>Derivative Programs</th>
<th>1. Capital expenditure program 1979-1983 of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivative Policies</td>
<td></td>
</tr>
<tr>
<td>Derivative Procedures</td>
<td></td>
</tr>
<tr>
<td>Derivative Rules</td>
<td></td>
</tr>
<tr>
<td>Derivative Budgets</td>
<td></td>
</tr>
</tbody>
</table>

nature and the predominant criterion used in the decision model was the addition of value to Boise Cascade's shareholders' investments.

Boise Cascade strategic planning process deviates from the derived model in the following areas.

1. No philosophical position was clearly stated.
2. The strategic profile was composed of an in-depth review at the divisional level; no environmental or industry profile was done except for an environmental economic forecast.
3. The strategic design was limited to an economic scenario that was handed down by top management.
4. The time horizon was 5 years instead of twenty.
5. From the research done, it was judged that the planning process was a bottom-top process except for an economic scenario.

In conclusion, Boise Cascade had made a firm commitment to strategic planning. However, it was judged that most of the planning was done at the operational level and that the emphasis was on economic and financial factors. The conclusion of the research is that the strategic planning done by Boise Cascade as compared with the derived model in Chapter V is not adequate.

From the analysis of Boise Cascade, the next wood products commercial organization examined is Champion International.

Analysis--Strategic Planning Done by Champion International--

Champion International is the second wood products organization reviewed. The following table, Table 44, is a partial example of
TABLE 44

Champion International Strategic Planning

<table>
<thead>
<tr>
<th>Philosophical position:</th>
<th>Pro growth</th>
</tr>
</thead>
</table>
| Crucial variables       | cost-effective operations  
solid timber base |
| Strategic premises      | 1. The North American forest products industry has strength in both domestic and international markets and it will continue as the world's low-cost producer of forest products.  
2. Demographics point to a healthy market for housing through the decade of the 80s.  
3. There will be a demand for brown and white paper products because of the growing economy—fundamentally sound supply-demand relationship in both white and brown paper. |
| Strategic purpose:      | Champion International is to concentrate and expand in the basic forest products businesses. |
| Strategic goals         | 1. To establish a wood fiber base for a major new facility  
2. To improve financial posture. |
| Strategic objectives    | 1. The timberlands will support the mills and plants by supplying their fiber needs.  
2. The planned timberland acquisitions will be divided between strengthening existing timber base and establishing a timber base for a new wood fiber facility. |
TABLE 44 - Continued

<table>
<thead>
<tr>
<th>Strategic programs</th>
<th>To engage in a major capacity expansion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic policies</td>
<td>1. New plants will be built to achieve cost-effective operations.</td>
</tr>
<tr>
<td></td>
<td>2. Cost effective manufacturing facilities will be achieved through new plants instead of modernization of old ones.</td>
</tr>
</tbody>
</table>

Strategic procedures

Strategic rules

Strategic budgets $1.8 billion major capacity expansion

<table>
<thead>
<tr>
<th>TABLE 45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion International Strategic Organizational Structure</td>
</tr>
</tbody>
</table>

- CEO
  - Exec. VP Timberlands
    - Nursery and Seed Management
  - Exec. VP Building Materials
    - Manufacturing Facilities
      - Softwood
      - Plywood
      - Lumber
      - Particleboard
      - Hardboard
  - Sales and Distribution
    - Senior VP Finance
    - Senior VP Control
    - Senior VP Administration
  - Executive VP Paper Packing
  - Executive VP Paper
    - Pulp
    - Paper and Board
      - Fine white Paper
      - Copying/Duplicating Paper
      - Dairypak
      - Federal Envelopes
      - Nationwide Papers
      - Champion Office Supply
### TABLE 46

Champion International Derivative Planning - An Example

**Paper**

<table>
<thead>
<tr>
<th>Derivative premise:</th>
<th>Demand in the growth markets (copying/duplicating papers, forms papers, and coated printing papers) of the fine paper business will increase at rates greater than real GNP growth in the 1980s.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivative purpose</td>
<td>To grow aggressively in the white paper business.</td>
</tr>
<tr>
<td>Derivative goal</td>
<td>To focus on growth markets in the fine paper business.</td>
</tr>
<tr>
<td>Derivative objective</td>
<td>To control cost.</td>
</tr>
<tr>
<td>Derivative program</td>
<td></td>
</tr>
</tbody>
</table>

**Derivative policy**

To minimize the effects of cost increases throughout the system.

**Derivative procedure**

To develop innovative ways to control cost through cost involvement teams.

- a. hourly personnel
- b. management personnel
- c. staff personnel

**Derivative rules**

**Derivative budgets**

the strategic planning done by Champion International as found in their 1979 Annual Report. Following 44, Table 45 illustrates the strategic organizational structure, and Table 46 gives an example of the derivative planning done by Champion.

No information was available with which to judge the tools and techniques used by Champion International in their strategic planning. Also, data sources used were not listed.

In conclusion, Champion International made no explicit mention of their planning process in their 1979 Annual Report. From the letter to the stockholders by Mr. Sigler, Chairman and CEO of Champion, mentioned the objectives which Champion has achieved since 1974. From this it may be inferred that Champion International does have some form of a planning process. Champion International's strategic planning when compared to the derived model as found in Chapter V was found to differ in several areas, and was therefore not adequate.

1. Based on the research, an explicit statement of a philosophical position was not found.
2. Based on the research, no form of a formal strategic profile was found as compared to the one in the derived model.
3. At most, the time span looked at by Champion was 10 years, which differs from the model's time span of 20 years.
4. No strategic comparison was found by the research.

From the analysis of the strategic planning done by Champion International, the analyses of the commercial wood products organizations concludes with an examination of the strategic
planning done by Georgia-Pacific.

Analysis - Strategic Planning done by Georgia-Pacific—Georgia-Pacific is the last analyses performed on the adequacy of the strategic planning being done by the wood products industry. The strategic planning done by Georgia-Pacific, as found in their 1979 Annual Report, is found in the following table, Table 47. After Table 47, Georgia-Pacific's strategic organizational structure may be found in Table 48.

Georgia-Pacific's derivative planning is found following their strategic organizational structure in Table 49.

In examining how well the strategic planning was done, no information was found regarding the tools and techniques that Georgia-Pacific used in their planning. Nor was any information found regarding the type of data used or who was involved in the strategic planning.

In conclusion, Georgia-Pacific's strategic planning differed from the derived model in several areas and therefore was not adequate.

1. No philosophical position was explicitly stated.
2. No formal strategic profile was performed.
3. The time horizon was 5 to 10 years whereas in the derived model, the time span was a minimum of 20 years.

General Conclusions

Based on the research done, none of the wood products industry's organization examined had adequate strategic planning adjusted by the derived model in Chapter V. It was judged that
TABLE 47

Georgia-Pacific's Strategic Planning

<table>
<thead>
<tr>
<th>Philosophical position</th>
<th>Pro growth</th>
</tr>
</thead>
</table>

| Critical Variables     | 1. natural resource base timber  
natural gas and salt reserves  
2. human resources |

| Strategic premises     | 1. demand for all of Georgia-Pacific's markets will be positive. G-P's primary markets are:  
a. building products  
b. pulp and paper  
c. chemicals.  
2. Paper and pulp supply and demand should remain in balance.  
3. The 1980s is seen as an era of vigorous business activity. |

| Strategic goals         | 1. to sustain Georgia-Pacific's exceptional record of growth through the 80s.  
2. To keep the company financially strong while continuing to carefully explore new areas of opportunity. |

| Strategic objectives    | 1. To assure long-term timber supplies through sound resource management.  
2. To acquire timberlands close to manufacturing facilities. |

| Strategic organizational structure | 1. Decentralized structure.  
2. To encourage growth and initiative of employees |

| Strategic policy        | 1. To pay out at least one-third of net in cash dividends.  
2. To be energy-efficient and energy-sufficient in forest products area |
<table>
<thead>
<tr>
<th>Strategic procedures</th>
</tr>
</thead>
</table>

**Strategic Rules**

<table>
<thead>
<tr>
<th>Strategic budgets</th>
</tr>
</thead>
</table>

TABLE 48
Georgia-Pacific's Strategic Organizational Structure

CEO

Executive VP Finance
  - Senior VP Legal, Government, and Corporate Affairs
    - VP Taxes & Audit
      - VP and General Counsel
      - VP Employee Relations and Administrative Services
      - VP Government Affairs
      - VP Federal Government Affairs
  - Senior VP Southern Division
  - Executive VP Building Products
    - Senior VP Distribution Centers
      - VP SE Region
      - VP NE Region
      - VP Western Region
      - VP Midwest Region
      - VP SW Region
    - Senior VP Building Products Division
      - VP Building Products
    - VP Kraft Paper and Bleach Board Sales
  - Senior VP Northeast Division
  - Senior VP Pulp, Paper, Chemicals
    - President
  - Senior VP Chemical Division
    - VP Kraft Paper
    - VP Packaging Division

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TABLE 49

Georgia-Pacific's Derivative Planning - An Example

| Derivative Premises | 1. Strong housing demand for at least the first half of the 1980 decade.  
|                     | 2. Remodeling and repair business should continue to grow. |
| Derivative Purpose  | To be a market leader in the manufacturing and distribution of building products. |
| Derivative goal     | To use the wood fiber resource more efficiently. |
| Derivative Objective| To expand in new structure panels such as waferboard and composite plywood. |
| Derivative policy   | To keep a finger on the pulse of the building material market place through the building products distribution centers. |
| Derivative Procedures |  |
| Derivative Rules    |  |
| Derivative Budgets  |  |

economics and/or financial considerations were the dominant influences in the strategic planning done. No organization in the wood products industry stated a formal philosophical position. The Forest Service, Resources for the Future, and Boise Cascade were organizations which showed a formal strategic profile, although the strategic profiles that were done were not as comprehensive as the derived model's one. All of the commercial wood products organizations used a time frame of five to ten years; the Forest Service did use a time frame of fifty years but no time frame was explicitly stated for Resources for the Future. It was judged from the research that the commercial wood products companies strategic planning was strongly tied to their five-year capital budgets. In conclusion, none of the organizations in the wood products industry was judged to have adequate strategic planning vis-a-vis by the derived model in Chapter V.


"Finn Nameplates; Technology Know Wherever Wood Fiber is Used," pp. F20-F23.


Ibid.

Ibid.

298. Ibid., p. 306.
302. Ibid.
306. Ibid.
307. Richard W. Haynes and Darius M. Adams, "Possible Changes in Regional Forests Product Output and Consumption During the Next 50 Years," Forest Product Journal, October, 1979, p. 75 (pp. 75-80).
311. Ibid.
312. Ibid., p. 31.
314 Ibid.
315 Behlen, "Are We Running Out of Forests," p. 4.
317 Behlen, "Are We Running Out of Forests," p. 15.
324 Ibid.
325 Ibid., p. 135.
326 Ibid., p. 137.
327 Ibid., p. 157.
328 Ibid., pp. 175-176.
329 Ibid., p. 177.
331 Ibid., p. 16.


CHAPTER VII

GENERAL CONCLUSIONS

Restatement of Objectives

The purpose of this research paper is to analyze the strategic planning in the United States wood products industry. The objectives of this research are:

1. To develop an adequate strategic planning model.
2. To develop an adequate strategic planning model for an organization in the wood products industry.
3. To analyze the current strategic planning being done in the wood products industry, using the derived model (objective 2) as the standard.

These objectives form the basis from which the three major research questions were developed.

Research Questions Conclusions

Each of the three research questions will be listed with their respective conclusions.

Research Question: WHAT IS ADEQUATE STRATEGIC PLANNING?

From the research, it was judged that adequate strategic planning has two components: the actual strategic planning model and the evaluation of the results using the model. The model
developed has eight major activities (See Appendix A for a graphic display of the strategic planning model):

- Philosophical Position
- Strategic Profile
- Strategic Design
- Strategic Programs
- Strategic Controls
- Strategic Comparisons
- Derivative Decisions and Programs
- Derivative Controls and Comparisons.

The evaluation of the strategic planning process is the second half of an adequate strategic planning model. The evaluation focuses on the quality of the strategic planning that is done and has four major parts:

1. Was strategic planning done?
2. How well was the strategic planning done?
3. Were the results of the strategic planning process used?
4. What was the frequency of the strategic planning?

The adequacy of the strategic planning model is derived by the systems interaction between the model and the evaluation of the application of the model. Adequate strategic planning is the minimal level of planning which occurs that makes an organization appropriate for its present and future environment.

**Research Question:** WHAT WOULD BE AN EXAMPLE OF ADEQUATE STRATEGIC PLANNING FOR AN ORGANIZATION IN THE WOOD PRODUCTS INDUSTRY?

WPO was designed as an organization in the wood products industry. From the research, it was judged that an example of an adequate strategic planning process for WPO would be:
Philosophical position: Pro-growth

Crucial Variables: Commercial forest land
Technology
Taxes

Strategic Premises:
1. Commercial forest land will stabilize.
2. All commercial forests will be more intensively and integratedly managed.
3. Technology will be developed to exploit the non-construction uses of wood.
4. Appropriate tax laws will be passed to encourage technological development and intensive and integrative forest management techniques.

Strategic Purpose: WPO is to be a socially acceptable organization that anticipates and provides the demand and needed products by society that are available from wood.

WPO's strategic planning which was done within the scope of this research may be found in the following tables:

Table 21, page 182
Table 22, page 188
Table 23, page 190
Table 24, page 194
Table 26, page 196
Table 28, page 200

Research Question: HAS THE CURRENT STRATEGIC PLANNING WHICH IS BEING DONE IN THE WOOD PRODUCTS INDUSTRY BEEN ADEQUATE?

The wood products industry is defined as those public and private organizations that are involved, concerned, or associated with wood products. It was judged that the organizations could
be grouped as follows: public; trade associations; private, non-trade organizations; and commercial organizations.

From the research, the following wood products organizations were selected for the analysis of the adequacy of their strategic planning:

- U.S. Forest Service: Federal government
- Resources for the Future: Private, non-trade organizations
- Boise Cascade: Commercial organization
- Champion International: Commercial organization
- Georgia-Pacific: Commercial organization

The analysis of the adequacy of the strategic planning of these wood products organizations was based on the derived model that was developed in Chapter V. Based on the research done, none of these wood products organizations had adequate strategic planning. It was judged that economics and/or financial considerations were the dominant influence in the reviewed wood products organizations' strategic planning. None of the organizations reviewed began their strategic planning with a statement of their philosophical position. A limited strategic profile was performed by the Forest Service, Resources for the Future, and Boise Cascade. From the research done, it was also judged that the major inadequacy of the reviewed organizations was the dominant premise that wood will continue to be a major building material in the future.
Objective Conclusions

It was judged that on the basis of the scope of this research that the stated objectives were achieved.

Implications of This Research

Keeping in focus that this research was limited in nature, the following were judged to be the significant implications of this research.

1. With the increasing concentration that is taking place within the wood products industry, a simile may be drawn between the wood products industry and the U.S. automobile industry. At the turn of the century, there were numerous automobile manufacturers; however, as time passed, the number declined until today there are only four major auto manufacturers in an oligopolistic market structure, with the largest manufacturer assuming the role of a price leadership. Could the wood products industry be following the same course as the automobile industry has this century?

2. Another simile may also be drawn between the automobile and wood products industries vis-a-vis satisfying the wants and needs of society. The automobile industry is going through a crisis because it failed to respond to its market. Could a similar situation occur for the wood products industry with their significant dependence on residential housing construction and their adherence
to the traditional construction methods?

3. Egon Glesinger in his book The Coming Age of Wood, which was published in 1949, gave the wood products industry some creative ways on how to better manage their industry. Yet, based on this research, it was judged that only within the last decade has the wood products industry taken Mr. Glesinger's thoughts seriously. An intuitive impression received from the research was that the wood products industry belief that business will be as usual because people will always require dwellings to live in. The far-reaching implications of the space and computer age have only received superficial treatment by the wood products industry. Support for this is found in the book Wood in American Life: 1776-2076.

4. The Forest Service relies heavily on economic forecasting in its planning, yet there is evidence that forecasting should not comprise the total planning process.

Predictive theories of special disciplines, such as economics, sociology, psychology, and anthropology do not produce comprehensive appraisal readily applicable to long-range corporate strategic decision-making.337

While forecasting provides a basis for understanding and formulating expectations, management must go beyond this orientation state and develop programs of action designed to optimize the company's all-over performance.338
If a company programs its future to fit the forecast conditions, its behavior will be characterized as adaptive and its future success as a function of the predicted environment. On the other hand, if the company plans for aggressive action in pursuit of predetermined goals and objectives, its behavior can be characterized as innovative, that is, shaping the environment.

Forecasting is not planning.

5. There are significant, far-reaching results because historically the wood products industry has lagged behind other industries vis-a-vis its research and development expenditures. Based upon the research, this lack of an aggressive policy for research and development could lead the wood products industry to the same situation that the U.S. steel industry is in currently. Implicit in "keeping up with the times," is the incorporation of a more modern, comprehensive, and appropriate method for assessing the inventory of the wood products raw material—timber. The wood products industry does not have a definitive record of its raw material resource, nor has it agreed among the organizations within the industry what method should be used in inventorying its raw material resource—sawtimber, wood fiber, forest biomass, and so forth.

By irrevocably linking their strategies to demographic data and the premise that wood products in the future will be used in the same manner as they are today, the wood products industry is significantly constraining its vision of what the essence of the wood products industry will be in the Twenty-First Century.

337 Christensen, Andrew, and Bower, Business Policy: Text and Cases, p. 249.

338 Johnson, Kast and Rosenzweig, The Theory and Management of Systems, p. 27.

339 Ibid.

340 Ibid.

APPENDIX
STRATEGIC PLANNING MODEL

Strategic Objectives

Philosophical Position

Strategic Profile
- environment
- industry
- company

Strategic Design
- premises
- strategic decisions
- purposes
- goals
- objectives

Strategic Programs
- organizational structure
- policies
- procedures
- rules
- budgets

Derivative
- decisions
- purposes
- goals
- objectives
- programs
- structures
- policies
- procedures
- rules
- budgets

Adjustment Mechanism

Strategic Comparisons
- strategic profile
- strategic design
- strategic controls

Strategic Controls
- management
- information system
- management audit system
APPENDIX B

Glossary

Adequate—a minimal level of planning for the future that will make an organization socially and economically appropriate for the present environment and for the future.

Adjustment Mechanism—the conscious, formal process of the application of the systems interaction concept on the impact of a deviation in the strategic planning process.

Budgets—a statement of plans in numerical terms of what the expected results of plans should be for a given future period. Budgets are numerical statements of how goals will be accomplished. Budgets are more detailed, quantified statements of how purposes and goals will be achieved.

Commercial forests—forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization; has the capability of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands.

Controls—the activity of monitoring the actual performance of an organization through the establishment of standards, the measurement of actual performance and the correction of any significant adverse deviations, and the activity of informing.

Critical points—those junctures in the operation of any organization which have to be controlled to insure that the organization is proceeding in the direction as determined by the organization's strategic planning process; should include both crucial variables and key performance factors.

Crucial variables—those long-term factors that significantly impact on the industry and the organization. The characteristics of the crucial variables are:
1. any variance in these variables will have extraordinary impact on the ultimate existence of an organization.
2. these factors must constantly remain in sharp focus throughout the strategic planning process.
3. These factors are limited in number.

Decision model—a model that provides a rational selection from among alternative courses of action.

Derivative—the planning which is done below the strategic level in support of the strategic design and programs; the day-to-day or operational planning; planning which is done on a macro level which takes the strategic planning and translates them into smaller, operational units.

Derivative comparisons—a formal analysis of the results of the derivative controls vis-a-vis the derivative decisions and programs to determine whether the latter is remaining appropriate.

Derivative controls—a timely system of action which establishes standards, which measure the actual performance of the derivative decisions against the standards, and which corrects the significant deviations from the standards on a micro level of an organization. Also information systems for the organization's operational levels.

Derivative decisions—the statement of derivative or operational purposes, goals, and objectives which are supportive of the strategic design and programs and which are done at the derivative level.

Derivative programs—the statement of micro organizational structures, policies, procedures, rules, and budgets and which reflect the derivative decisions.

Economics—those factors or variables which are associated with the production, distribution, and consumption of goods and services; macro/national level—population, gross national product, disposable personal income, and trends in those factors.

Environment—the aggregate of the economic, technological, political, and social factors which influence the existence of the organization on both a macro and micro level.

Goals—those significant activities or tasks which must be accomplished in order to achieve the purposes of an organization.
Growing stock volume—net volume in cubic feet of live growing stock trees 5.0 inches diameter breast high (4.5 feet from the ground) and over a one-foot stump to a minimum 4.0 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

Forest land—land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover, and not currently developed for nonforest use; minimum area of one acre.

Hardwood—dicotyledenous trees, usually broadleaved and deciduous; maple, beech, oak, and so forth.

Hierarchy of planning—a planning process having a pyramidal construction, the top of which starts out with broad, general statements; on the next level, the statements become more specific and have greater detail; the process of becoming more specific and with greater details continues until it is no longer necessary to segment the preceding statements; the descending flow of the statements: premises, purposes, goals, objectives, procedures, policies, rules, and budgets. Each subsequent step in the hierarchy of planning becomes more specific.

Key performance factors—those short-term variables which significantly impact on the derivative or operational levels; the same concept is involved at crucial variables except the factors are at the day-to-day level of an organization.

Long-range—the essence of long-range is to look into the future beyond the current predictable future; long-range steps beyond a relatively certain environment whose future can be forecasted into an environment whose future is nebulous; the long-range concept begins at the point in the future that is tenuous to an outer time boundary in the future; a distant parameter/benchmark to a more distant parameter; the future benchmarks must be appropriate to an organization and its industry; the establishment of a distant and more distant time parameter in the future, the threshold of which is that point in time where predictions of the future are not predictable.

Industrial wood—all commercial roundwood products except fuelwood; includes the following—sawlogs, veneer logs, logs for sleepers, pulpwood, pitprops, and other industrial wood.
Lumber—timber which has been sawed or split into planks or boards.

Management control system—the formal evaluation activity of an organization which establishes verifiable measurements at critical points in the operation of the organization, which measures the actual performance at the critical point and determines whether the variance is significant and which corrects significant variations/deviations.

Management information system—a systematic gathering of internal and external data that continuously monitors the total dynamic environment of an organization; data gathered in informational in nature and accessible on a non-restrictive basis.

Market products—timber, minerals.

Nonmarket products—recreation, wilderness, wildlife and fish, forage, water.


Objectives—the quantification of the crucial variables which support the stated goals and which are easily understood.

Organizational structure—the establishment of an intentional framework/mode of roles through the determination of the activities required to achieve the goals, the delegation of authority and accountability of those activities, and the coordination of those relationships and information from those activities.

Pacific Coast—Alaska, California, Oregon, Washington.

Philosophical position—the basic values of the world's societies and individuals, both historically and contemporary, and the recognition of the critical factors of a stated position. A simplistic view of the two polar positions are conceptualized in the worlds "democrats" and "republicans." The two philosophical polar positions are represented by individualism and socialism. Another perspective of the two polar positions is pro-growth and limits-to-growth. Individualism/pro-growth position is represented by the Hudson Institute; the polar position of socialism/limits-to-growth is represented by the Club of Rome.
Planning—an integrated decision process which establishes the framework for the adequate management of an organization in its environment.

Policies—general guidelines for actions and to thinking which allows for flexibility in the making of a decision but provides consistency.

Political trends—the general course of factors which deal with government—federal, state, county, municipality; public affairs.

Premises—the statement of the future in terms of the crucial variables; an assumptive statement of what the crucial variables will look like and be in the future, as established by the organization's definition of long-range; these statements should be very specific and quantitative statements of what the crucial variables will be in the future although if the quantification is not possible, premises may be stated qualitatively; premises give the planning process the futurist's element and the forward planning capabilities.

Procedures—a sequence of actions that detail how a policy should be followed; can be sequential.

Programs—a formal course of action outlining the sequence of activities and the allocation of resources necessary to accomplish the strategic design (strategic purposes, goals, and objectives).

Purposes—the essence of mission of an organization vis-a-vis the premises; defining the essential nature of an organization in relationship to the premises so that an organization remains appropriate for the present and the future environment in which it exists.

Public owners—federal government (Forest Service, Bureau of Land Management, other agencies), state, county, municipalities, and the American Indians.

Rocky Mountain and Great Plains—Idaho, Montana, Nevada, Colorado, Arizona, New Mexico, North Dakota, South Dakota, Nebraska, Kansas.

Roundwood—logs, bolts, or other round sections cut from trees.
Rules--specific and definite actions/nonaction required for a given situation.

Sawlogs--a log meeting minimum approved log-grade specifications, or at least 8 feet long with a minimum diameter inside bark of 6 inches with deduction for defects no greater than two-thirds of the growth volume.

Sawtimber trees--live trees of commercial species containing at least one 12 foot sawlog or two noncontiguous 8 foot logs and meeting regional specifications for freedom from defects.

Short-range--a time span that can be predicted with relative accuracy; usually five-years.

Silverculture--the cultivation of forest trees.

Social trends--the general course of those factors which pertain to the life-welfare, and relations of human beings in a community; examples: concept of work, leisure, abundance, scarcity, systems of beliefs, modes of conduct, and so forth.

Softwoods--coniferous trees, usually evergreen, having needles or scalelike leaves; examples--fir, pine, spuce, and so forth.

South--Texas, Oklahoma, Arkansas, Alabama, Mississippi, Tennessee, Kentucky, Virginia, North Carolina, South Carolina, Georgia, Florida, Louisiana.

Standards--measurable statements of the performance which is to be accomplished at the critical points by a predetermined date; can be either qualitative or quantitative but they must be verifiable.

Strategic--the key elements of a plan denoting that which eminates from the top of an organization and is related to the broad, general directions; macro perspective of an enterprise.

Strategic comparisons--the analysis of the strategic profile, design, and programs vis-a-vis the strategic controls to determine whether the organization is remaining appropriate to its environment.

Strategic controls--the process whereby information is obtained and evaluation occurs through the functions/activities of the strategic management information system and strategic management control system.
Strategic design—the activity of formulating premises and the development and formation of the strategic decisions.

Strategic decisions—the activity of deciding upon an organization's purposes, goals, and objectives.

Strategic profile—the detailed appraisal of the environment, the organization's industry, and the organization vis-a-vis the economic, technological, political, and social factors appropriate to the organization.

Strategic planning—a formally structured decision making process where an organization selects a predetermined course of action from the present into the long-term future.

Strategic programs—the translation of the strategic design into specific courses of actions—strategic organizational structure, policies, procedures, rules, and budgets.

Technology—those elements or factors which have to do with applied science, engineering or the methods of using tools and machinery.

United States wood products industry—those public and private organizations which are involved, associated, or concerned with wood products in the United States.

Wilderness—(as defined by the Wilderness Act of 1964)—those areas where the earth and its community of life are untramelled by man, where man is a visitor and does not remain, and where there is at least 5,000 acres for an outstanding opportunities for solitude or for a primitive and unconfined types of recreation.

Wood products—lumber, plywood, and panel products—particleboard, hardboard, flakeboard.

Wood products industry—those public and private organizations which are involved, associated, or concerned with wood products.
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