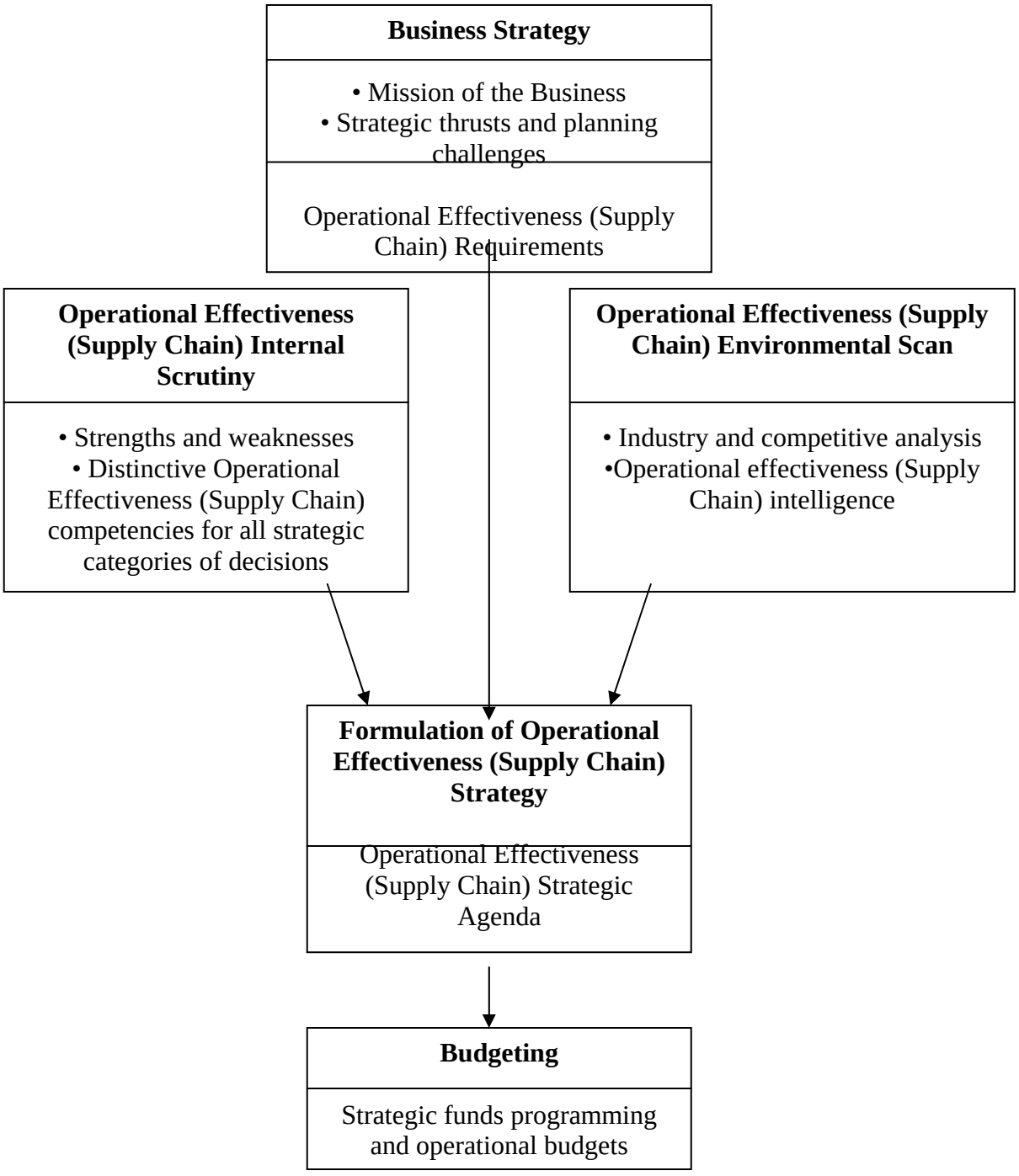
WORKSHOP

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) STRATEGY

THE FUNDAMENTAL ELEMENTS OF THE DEFINITION OF AN OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) STRATEGY



MAJOR CATEGORIES OF STRATEGIC DECISIONS LINKED TO OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN)

1. SUPPLY CHAIN INTELLIGENCE

To observe the practices and trends of procurement, logistics, manufacturing, and distribution in the industry, such as: alternative sources of supply from around the world, legislative changes, cartelization of supplies, general health and competitive standing of key suppliers, technological changes that may affect procurement, distribution patterns, and material management practices and innovations, changes in competitors' facilities, technological developments in process technologies, new raw materials or components, standardization, capital investment practices, and environmental legislation.

2. SELECTION, EVALUATION, AND DEVELOPMENT OF SUPPLIERS

For finding, selecting, evaluating, developing, administering and motivating suppliers able and willing to provide consistent quality, service, and competitive prices; maintaining a healthy relationship with suppliers, subcontracting, buying inside the company, and make vs. buy decisions.

3. MATERIALS MANAGEMENT OF PURCHASED GOODS

Dealing with the flow of all of the purchased goods into the organization, mainly: materials planning and control, order processing, incoming traffic, inventory control, receiving, in-plant materials movements, and scraps and surplus disposal.

4. VALUE ANALYSIS, PRICE; COST ANALYSIS, AND STANDARDIZATION

To confront with ample information the difficult trade-offs among price, quality, design, manufacturability, standardization, and cost. Value

analysis is a systematic effort directed at analyzing the functional requirements for achieving the lowest attainable cost, consistent with the needed performance, reliability, quality, and maintainability of a product.

5. FACILITIES

Mainly the number of plants, their sites and location, and most importantly, how specialized or focused facilities are and the degree of flexibility they possess.

6. CAPACITY

As determine by: the plant equipment and human resources available, the slack in the use of capacity with regard to demand, the ability to handle demand peaks, and the decisions pertaining to the sequences of capacity expansion.

7. VERTICAL INTEGRATION

Addressing among other issues: the definition of the boundaries of the firm with regard to its value chain (the questions of make vs. buy), the management of the relationship among the firm and its external constituencies (primarily suppliers, distributors, and customers), and the conditions under which those characteristics should be altered to gain competitive advantage and to increase the appropriation of value by the firm.

8. PROCESS TECHNOLOGIES

Involving decisions as to: the degree of the technology and process equipment used (from general to specific purposes), the labor skills required, the degree of automation, and the flexibility for scope and volume, as well as the rate of new product introductions.

9. PRODUCT SCOPE AND INTRODUCTION OF NEW PRODUCTS

Including issues such as: the definition of the breadth of product lines, the rate and mode of new product introductions, and the desirable length of the product life-cycle.

10. DISTRIBUTION STRATEGY

Involving selection of a distribution channel (whether direct or via retailers, wholesalers, or agents), design and management of the physical distribution system (including customer service, demand forecasting, inventory control, materials handling, order processing, parts and service support, warehousing and storage, procurement, packaging, returned goods handling, and traffic and transportation), and push vs. pull mode of operation of the distribution and sales systems.

11. HUMAN RESOURCES

Addressing questions such as: recruitment, selection, promotion and placement; appraisal; rewards, incentives, and job security; skills development and adjustment to changing technological demands; and labor/employee relations, and voice.

12. QUALITY MANAGEMENT OF PURCHASED AND MANUFACTURED GOODS

Dealing with: the definition of the desirable product quality, quality improvement program, assignment of responsibilities for quality, training, quality control, prevention, and testing.

13. SUPPLY CHAIN ORGANIZATION AND MANAGERIAL INFRASTRUCTURE

Most importantly: the design of the proper organizational structure (including the degree of centralization of responsibilities), the design of planning and scheduling systems, control and information systems, and forecasting and inventory management. A central issue is the coordination of a set of critical managerial activities. Most importantly: distribution, quality management, and finance.

MEASURES OF PERFORMANCE RELATED TO OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) STRATEGY

Supply chain measurements involve essentially tracking down performance of procurement, manufacturing, and distribution.

Procurement Measurement

An effective measurement for procurement performance is hard to define because of the many factors that have to be traded off to provide a steady flow of materials as needed, at lowest ultimate cost. The desired objectives for procurement are to obtain: optimum quality, minimum final cost, effective supplier service, continuity of supply, a solid supplier know-how, and good and permanent supplier relations. Some examples of performance measurements are:

1. **INDICATORS OF COST PERFORMANCE**
   - **Costs of procured goods vs. standard costs**
   - **Administrative costs of the purchasing department as a fraction of total purchases**
   - **Total value added of purchased goods as a fraction of total cost**
   - **Inventory turnover ratios**
   - **Cost savings**

2. **INDICATORS FOR SERVICES PERFORMANCE**
   - **Percentage of orders on time**
   - **Average delay on delinquent orders**

3. **INDICATORS FOR QUALITY PERFORMANCE**
   Percentage of orders meeting specifications
   Reliability of purchased goods
   Vendor quality

4. **INDICATORS FOR VENDOR RELATIONSHIPS**

Manufacturing Measurement

1. **COST**
   Variable unit cost and total unit cost (from the point of view of the manufacturer)
   Total life-cycle cost (from the point of view of the user)

2. **DELIVERY**
   Percentage of on-line shipments
   Predictability of delivery dates
   Response time to demand changes

3. **QUALITY**
   Adherence of products to the various dimensions of quality (performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality)
   Rejection rates
   Return rates
   Cost and rates of field repair
   Cost of quality

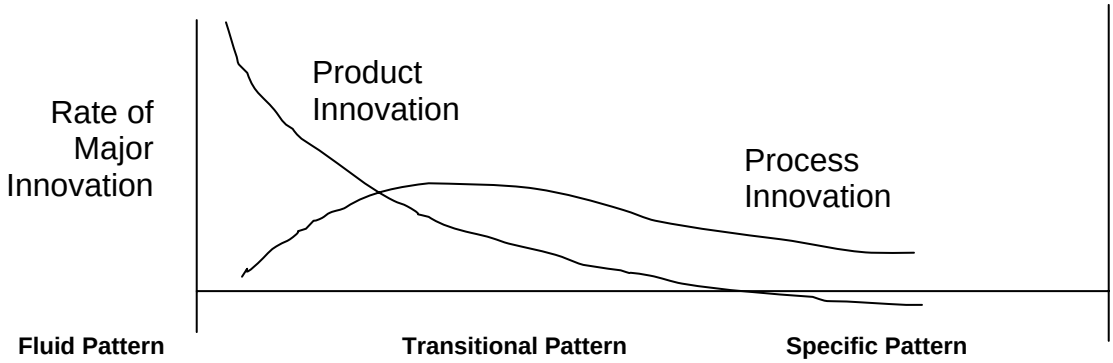
4. FLEXIBILITY TO VOLUME CHANGES AND NEW PRODUCT INTRODUCTION
Response to products or volume changes
Product substitutability
Product options or variants

Normally, cost and delivery represent a different way to compete from quality and flexibility. If a firm wants to establish itself as a low-cost producer, it might adopt a strategy that prevents delivering highly customized products and simultaneously begin able to absorb significant changes both in volume and in product innovation.

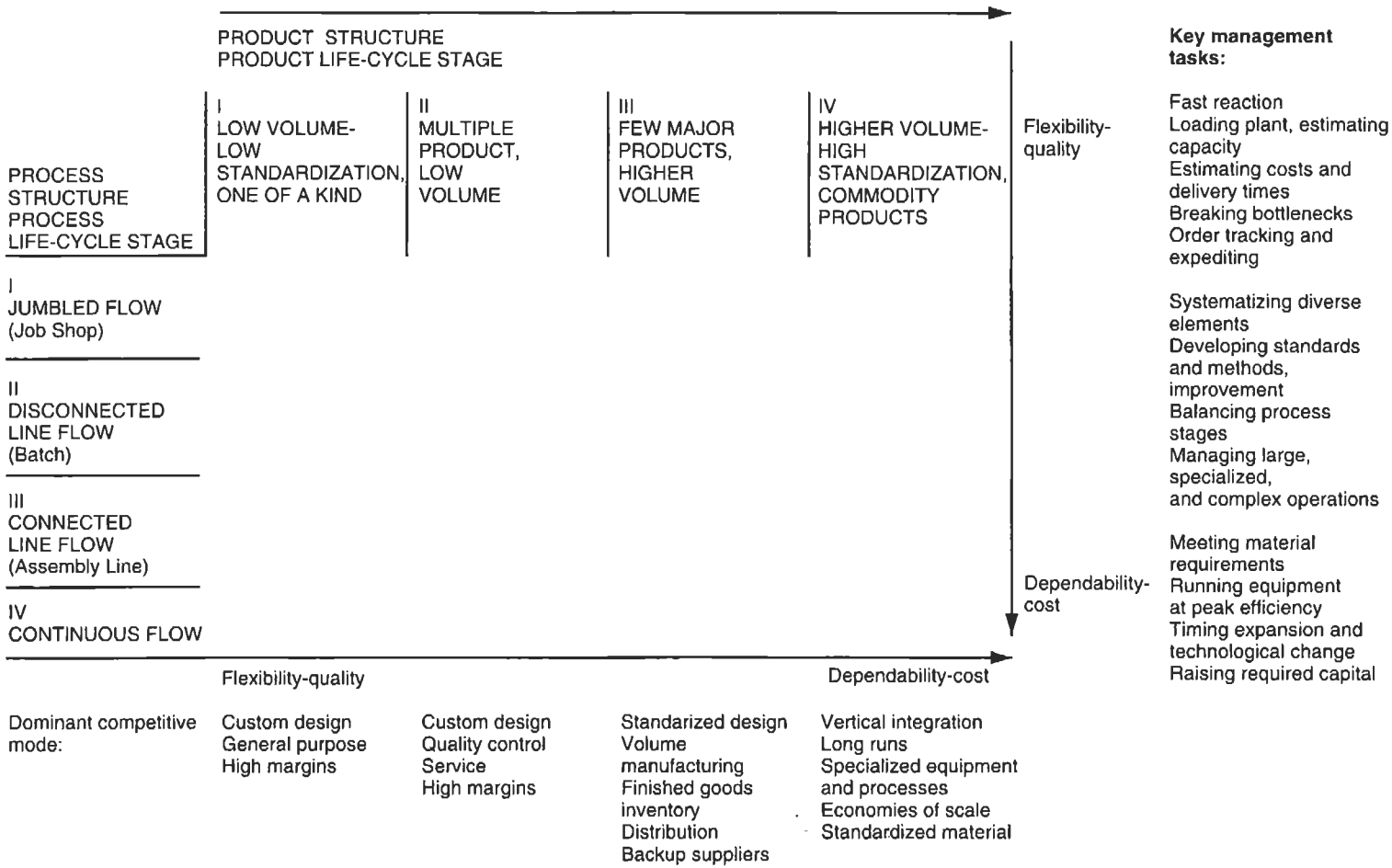
Distribution Measurement

1. DISTRIBUTION STRATEGY
Efficiency of distribution channels
Customer service levels
Distribution costs per channel
Distribution and sales force productivity

THE RELATIONSHIP OF PRODUCT INNOVATION AND PRODUCTION PROCESS CHARACTERISTICS



Fluid Pattern	**Transitional Pattern**	**Specific Pattern**
Product Innovation • Emphasis on maximizing product performance • Stimulated by information on user needs • Novelty or radicalness high • Frequency of product innovation is rapid • Predominant type is product rather than process	Product Innovation • Emphasis on product variation • Increasingly stimulated by opportunities created through an expanding technical capability • Predominant type is process required by rising volume • Demands placed on suppliers for specialized components, materials, and equipment	Product Innovation • Emphasizes cost reduction • Predominant mode is incremental for product and process • Effect is cumulative • Novel or radical innovations occur infre-quently and originate outside productive unit • Stimulation arises from disruptive external forces
Production Process • Flexible and inefficient • Small size or scale • General purpose equipment used • Available materials used as inputs • Product is frequently changed or custom designed	Production Process • Some sub-processes are automated creating “islands of automation • Production tasks and control become more specialized • Process changes tend to be major and discontinuous involving new methods of organization and changed product design • At least one product design is stable enough to have significant production volume	Production Process • Efficient, system-like, capital-intensive • Cost of change is high • Scale and facility market share is large • Special purpose process equipment used • Specialized input materials or extensive vertical integration • Products are commodity-likely and largely undifferentiated



NOTE: The margin of the matrix indicate the trade-offs to be made among the four external performance measurements (flexibility, quality, dependability, and cost), and the changing nature of the managerial tasks and competitive modes in different stages of the product-process life-cycle matrix.

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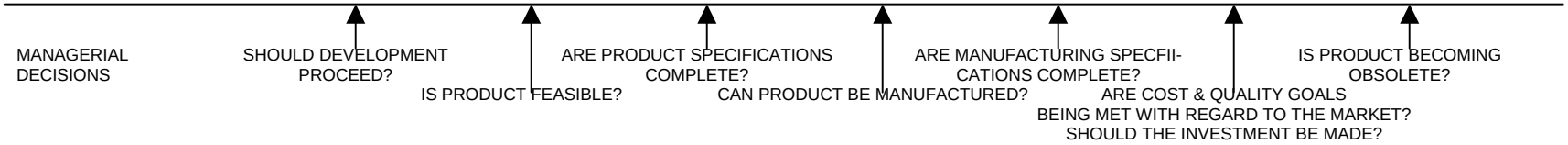
MANUFACTURING AND THE BUSINESS LIFE CYCLE

	CONCEPT DEVELOPMENT		LAB FEASIBILITY		PILOT PLANT FEASIBILITY		FINAL PRODUCTION	
	EARLIER STAGES	FINAL STAGES	EARLIER STAGES	FINAL STAGES	EARLIER STAGES	FINAL STAGES	GROWTH & MATURITY STAGES	AGING
R&D and ENGINEERING	•Assess initial technical Feasibility •Strong inter-action with marketing	Demonstrate design feasibility	Design product to meet objectives	•Prove design, build prototypes •Strong inter-action with manufacturing	•Transfer team to manufacturing •Adjust design to meet manu-facturing requirements	Adjust design to meet marketing and manu-facturing requirements	Adjust design as required	Adjust design as required
MARKETING	•Define product concept •Investigate market potential	Update marketing information	•Refine product concept •Assess market & estimate price •Develop service strategy	•Prepare all material for product intro-duction •Train people	•Test product in market area •Define pricing, advertising, packaging	Final definition of marketing strategy	Marketing follow up	Adjust market-ing as required
MANU-FACTURING	Check general consistency of product concept with manufac-turing strategy	Collect manu-facturing information	Update manu-facturing information	Develop and run manufacturing process at the lab level	Develop pilot plant	•Optimize manu-facturing process •Cost vs. quality trade-offs	•Build manu-facturing facilities •Check quality & productivity •Manage operations	Adjust opera-tions as required
FINANCE		Minor commit-ment of resources	•Prefeasibility study •Some commit-ment of resources	Economic and financial feasibility	•Analysis of pilot run data •More important commitment of resources	•Detailed study of project •In-depth economic & financial analysis	•Major commit-ment of resources •Manage for growth, profit-ability & cash generation	•Position for harvest or divestment •Review project profitability



OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) REQUIREMENTS FROM THE BUSINESS STRATEGIC THRUSTS

Strategic Thrust	Operational Effectiveness (Supply Chain) Requirements

COMPETITIVE STANDING. STRATEGIC PERFORMANCE MEASUREMENT OF OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN)

Relevant Competitor _____

Indicators	Very Weak	Weak	Even	Strong	Very Strong
Procurement Measurements **1. Cost of procured goods** **2. Purchasing administrative Costs** **3. Inventory turnover** **4. Service** **5. Quality** **6. Vendor relationships** **Manufacturing Measurements** **1. Cost** **2. Delivery** **3. Quality** **4. Flexibility to volume changes** **5. Flexibility to new product introduction** **Distribution Measurements** **1. Efficiency of distribution channels** **2. Customer service** **3. Distribution cost** **4. Distribution and sales force productivity**					

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Market Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Competitive Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• Economic Factors		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• Government and Political Factors		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Regulatory Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Technological Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• Legal Factors		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Social Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Human Resources and Labor Factors**		

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) ENVIRONMENTAL SCAN - IDENTIFICATION OF OPPORTUNITIES AND THREATS

Critical External Factors	Impact	
	Positive (Opportunities)	Negative (Threats)
• **Environmental Factors**		

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
1. Supply Chain Intelligence			

Note: In the assessment of strengths and weaknesses try to have relevant competitors in mind and use proper strategic performance measurement.

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
2. Selection, Evaluation, and Development of Suppliers			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
3. Materials Management of Purchased Goods			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
4. Value Analysis, Price/ Cost Analysis, and Standardization			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
5. Facilities			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
6. Capacity			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
7. Vertical Integration			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
8. Process Technologies			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
9. Product Scope and Introduction of New Products			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
10. Distribution Strategy			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

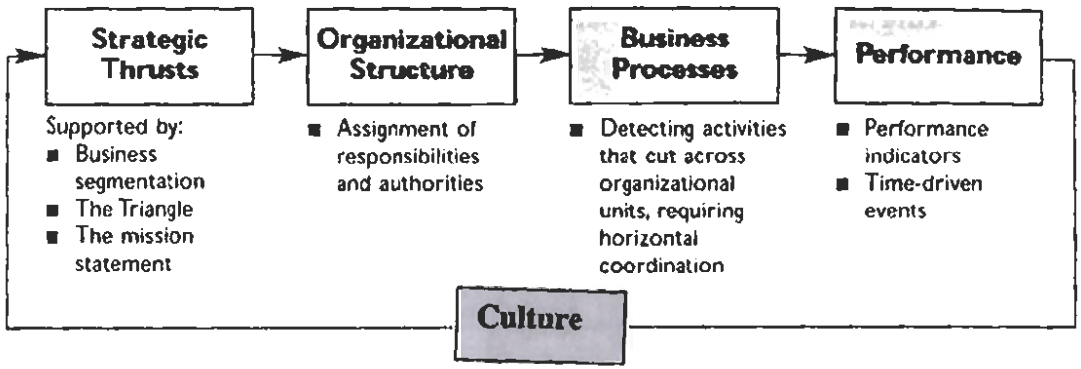
Decision Category	Description of Policy	Strengths	Weaknesses
11. Human Resources			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
12. Quality Management Purchased and Manu-Factured Goods			

CHARACTERIZE YOUR PRESENT OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) POLICIES REGARDING THE MAJOR DECISION MAKING CATEGORIES

Decision Category	Description of Policy	Strengths	Weaknesses
13. Supply Chain Organization and Managerial Infrastructure			



The components of the Strategic Agenda

OPERATIONAL EFFECTIVENESS (SUPPLY CHAIN) STRATEGIC AGENDA

Strategic Thrusts	Organizational Units	Business Processes	Performance Measurements

1 - Key role in formulation and implementation
2 - Important role of support and concurrence
(1) - Identifies the 'Champion', who takes leadership for the strategic thrust execution

CT - Customer Targeting

B - Business Model
OE - Operational effectiveness
I - Innovation

ASSIGNMENT OF PRIORITIES TO STRATEGIC THRUSTS

Strategic Thrusts	Priorities			
	A	B	C	Weight

A - Absolute first priority (postponement will hurt competitive position significantly).
B - Highly desirable (postponement will affect competitive position adversely).
C - Desirable (if funds were available, competitive position could be enhanced).

DEFINITION OF STRATEGIC THRUSTS

Name _____

Description

Responsible Manager

Other Key Participants

Other Important Contributors

Key Indicators for Management Control and Targets

First Major Milestone Description

First Major Milestone Date

Resources Required

Statement of Benefits

TESTS TO EVALUATE THE QUALITY OF THE STRATEGIC AGENDA

1. Comprehensiveness

2. Stretch

3. Monitoring and Control- Ease of Implementation

4. Motivation- Quality of Working Environment

5. Vulnerability