

PROCUREMENT

EIN 5346 Logistics Engineering

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POST

- * **P**urpose- to inform of the alignment of Procurement as it relates to Logistics Engineering and to introduce specific aspects of Procurement
- * **O**utcome- to increase knowledge base on Procurement and to have an appreciation of its application to Logistics
- * **S**tructure- PowerPoint Presentation
- * **T**ime- 30 minutes

Agenda

- * What is Procurement?
- * Procurement Objectives
- * Supplier Selection and Evaluation
- * Quality and Procurement
- * Global Procurement
- * Electronic Procurement
- * Investment Recovery
- * Socially Responsible Procurement

PROCUREMENT

- * Procurement is the full range of activities related to purchasing goods, services and works
- * Procurement can range from contracting for an entire service to purchasing small assets such as office equipment
- * The procurement process does not end at the commissioning or contract award stage, but spans the entire life cycle of the product or service from inception and design through to contract management and disposal of any redundant assets or the end of the useful life of an asset.
- * It involves options, appraisal and the critical 'make or buy' decision.'
- * Procurement differs from purchasing in that purchasing merely reflects the act of acquisition, while procurement encompasses more elements of the supply chain (logistics, transportation etc.).

Procurement Objectives

Procurement Objectives

Support Organizational Goals and Objectives

Develop integrated purchasing strategies that support organizational strategies. For example

- * Monitoring supply markets and trends and interpreting the impact of these trends on company strategies
- * Identifying the critical materials and services required to support company strategies in key performance areas, particularly during new product development
- * supporting the organization's need for a diverse and globally competitive supply base

Support Operational Requirements

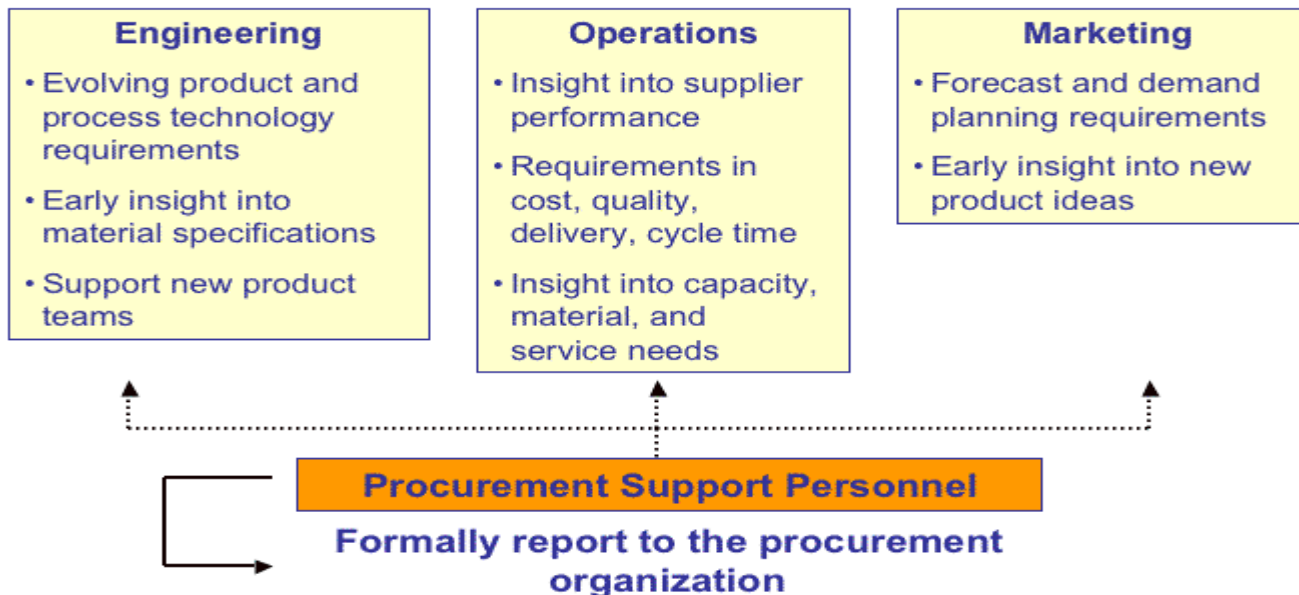
Understand business requirements i.e. requirements of each functional group within the organization - internal customers (Engineering, R&D, IT, distribution etc.)

Buy products and services at the right price, from the right source, the right specification, in the right quantity, for delivery at the right time to the right internal customer

Procurement Objectives

Develop Strong Relationships with Other Functional Groups

Procurement support personnel will increasingly co-locate with internal customers to achieve greater understanding of requirements and integration



Procurement Objectives

Manage the Procurement Process and the Supply Base Efficiently and Effectively

- ✓ Identify opportunities where the procurement team adds true value
 - Evaluation and selection of suppliers, review of specifications or statement of work, acting as the primary contact with supplier
 - Selection, development and maintenance of supply sources
- ✓ Evaluates how well procurement keeps its promises and how well it utilizes company resources in keeping its promises



Supplier Selection and Evaluation

Supplier Selection & Evaluation

- * One of the most important processes performed in organizations today is the evaluation, selection and continuous measurement of suppliers
- * Supplier selection and evaluation involves stating the organizations needs and then determine how well potential suppliers can fulfill these needs
- * Involves multiple criteria which can vary both in number and importance depending on the situation.
- * Supplier selection process includes both qualitative and quantitative factors
- * Business practices, philosophies and changing market needs influences the criteria for supplier selection and evaluation

Supplier Selection & Evaluation

Examples of selection and evaluation criteria

- ❖ Cost
- ❖ Quality & Safety
- ❖ On Time Delivery
- ❖ Service
- ❖ Risk
- ❖ Social Responsibility
- ❖ Convenience/Simplicity
- ❖ Agility
- ❖ Policies
- ❖ Regulations

Supplier Selection & Evaluation

Flow process for supplier selection and evaluation

1. Identify Need for Supply
2. Situation Analysis
3. Identify & Evaluate Potential Supplier
4. Select Suppliers
5. Evaluate Decision-compare actual and expected performances

Supplier Evaluation Methods

- * **Examples of Supplier Evaluation Method**

- * Analytical Hierarchy Process

- * Weighted Point Method

- * Categorical Method

- * Cost Ratio Method

Supplier Evaluation Methods

Analytical Hierarchy Process

- * AHP is a multi-attribute decision making process which enables decision makers set priorities and deliver the best decision when both quantitative and qualitative aspects of a decision must be considered
- * It encompasses three basic functions : structuring complexity, measuring on a ration scale, and synthesizing
- * Often use in conjunction with models such as: pre-emptive goal programming, multi-objective programming, linear programming, fuzzy logic model

Supplier Evaluation Methods

The Weighted Point Method

- * Weighted-point method quantifies the evaluation criteria
- * A number of evaluation factors can be included, and their relative weights can be expressed in numerical terms so that a composite performance index can be determined and supplier comparisons made
- * The advantage of the weighted-point plan is that a number of evaluation factors can be used with relative weights corresponding to the needs of the firm, thereby minimizing subjective evaluation

Supplier Evaluation Methods

The Categorical Method

- * Basically, it is a procedure whereby the buyer relies on a historical record of supplier performance
- * Initially, a list of evaluation criteria is identified. The buyer then assigns a grade to each supplier, for each criterion, based on past experience
- * A simple marking system of plus, minus, and neutral grades may be used
- * Evaluation lists are often provided to other departments involved, such as quality control, engineering, production, and receiving
- * Process relies heavily on the memory and judgment of the individuals providing the ratings, and the ratings may become routinely performed without much critical thought

Supplier Evaluation Methods

The Cost-Ratio Method

- * Relates all identifiable purchasing costs to the value of the shipments received from the respective suppliers
- * higher the cost-shipment ratio s , lower the rating for that supplier
- * Cost categories depends on the products involved
- * Quality, delivery, service, and price are the overall categories, and respective costs are accumulated for each

Quality and Procurement

Quality & Procurement

- * **Quality** can be described as the *non-inferiority* or *superiority* of something. It is a perceptual, conditional and somewhat subjective attribute and may be understood differently by different people
- * Consumers may focus on the **specification quality** of a product/service, or how it compares to competitors in the marketplace
- * Producers might measure the **conformance quality**, or degree to which the product/service was produced correctly

Quality & Procurement

Two common quality systems/programs used by vendors:

- * International Standard Organization 9000 Series (9001, 9002, 9003 etc.) and Six Sigma Concept.

The ISO series (ISO 9001, 9002, 9003) of quality standards is becoming more and more a requirement worldwide

- * A set of generic standard that can be applied to any manufacturing or service industry to document, implement, and demonstrate quality management and assurance
- * If the operating specifications meet ISO requirements and the company passes an audit showing it follows the specifications, it can obtain an ISO certification

Quality & Procurement

- * **Six Sigma** is a fact-based, data-driven philosophy of quality improvement that values defect prevention over defect detection
- * It drives customer satisfaction and bottom-line results by reducing variation and waste, thereby promoting a competitive advantage
- * It applies anywhere variation and waste exist
- * Basic concept is to have zero defects and zero errors
 - it suggests that there will be 3.4 defects, deficiencies or errors per one million opportunities

Quality & Procurement

Advantages of having ISO and Six Sigma Certifications

- * **Cost saving** – Minimization of waste through reworking /disposal of products/services
- * **Customer requirements** - No customer wants to risk a tarnished reputation with dealing with a supplier known to produce inferior goods or mediocre service
- * **Corporate image** - Foster better relations with company stakeholders as adverse publicity about poor quality performance is always very damaging to a company's reputation
- * **Marketing opportunities** - Consumers confidence and for participation in some markets

Quality & Procurement

- * **Legislation**-ensures recognition of the requirements and compliance with them, thus avoiding fines and other penalties. Also aids in facilitating a positive relationship between regulators and companies when there is evidence of commitment to improving quality performance
- * **Investment**- quality performance serves as pre-requisites for loans and is also requested by shareholders
- * **Insurance**-serves as a negotiating tool for lower premiums

Global Procurement

Globalization



- * Boundaries shrinking
- * Global and domestic purchasing are converging into one stream
- * Interconnected World
- * Competition is global

Globalization

A process

- * Of interaction and integration
 - * People
 - * Government
 - * Nations
 - * Companies
- * Driven by
 - * International Trade
 - * Factor Input Strategy
 - * Low cost, high quality sources of supply
 - * Investment
 - * Market Access Strategy
 - * Sourcing in markets where significant business will be done
- * Aided by
 - * Information Technology

Globalization

Effects

- * Environment
- * Culture
- * Political Systems
- * Economic Development and Prosperity
- * Human Physical Well Being

Global Procurement

AKA Sourcing

- * Purchasing items anywhere
- * Includes various steps:
 - * Planning
 - * Specification
 - * Evaluation
 - * Relationship Management
 - * Transportation and Holding Costs
 - * Implementation
 - * Monitoring and Improving

Global Procurement

- * Planning
 - * Identifies all the steps in the procuring process
 - * Assessment of opportunities and challenges
 - * identify potential sources in the marketplace
 - * determine the level of competition and prevailing prices, estimate cost and contract term requirements
 - * determine the appropriate method of procurement
 - * Local and/or Foreign
 - * Limited Tender
 - * Direct Contracting
 - * Emergency Situations
 - * Policies and procedures
 - * Consistent with objectives

Global Procurement

- * Specification
 - * Quantifying and qualifying sources
 - * Costs
 - * Quality
 - * Reliability
 - * Standardization
- * Evaluation
 - * Domestic Standards
 - * International Standards

Global Procurement

Factors to consider for Transportation and Holding Costs

- * Size and weight limitations
- * Inspection requirements
- * Marine survey
- * Shipping documentation
- * Preference of carriers
- * Information re: routes - Port of Entry/Port of destination
- * Chartering operations

Global Procurement

Transportation and Holding Cost

- * Trade offs
 - * Faster transportation
 - * Low holding cost
 - * High transport cost
 - * Longer Transportation
 - * High holding cost
 - * Low transport cost
- * Implementation Plan
 - * Must be flexible and provide guidance

Global Procurement

Monitoring and Improving

- * Performance measures
 - * Early vs. Late shipments
 - * Completeness of order
 - * Orders accepted vs. rejected
- * Reviewed regularly
- * Comparisons between actual and expected

Advantages

- * Low Cost
- * New potential markets – knowing how to do business
- * Tapping into skills or resources unavailable domestically
- * Developing alternate supplier/vendor sources to stimulate competition
- * Increasing total supply capacity

Disadvantages

- * Hidden costs associated with different cultures and time zones
- * Exposure to financial and political risks in countries with (often) emerging economies,
- * Increased risk of the loss of intellectual property,
- * Increased monitoring costs relative to domestic supply.
- * Long lead times
- * Risk of port shutdowns interrupting supply, and the difficulty of monitoring product quality

Electronic Procurement

Electronic Procurement

- * AKA e-procurement
- * e-Procurement refers to the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search



Types of e-Procurement

- * Web-based ERP - **Enterprise Resource Planning**

- * ERP software packages are designed to optimise the resource planning of an enterprise. In terms of the manufacturing process they can generate recommended purchasing schedules in order to achieve an ideal just-in-time (JIT) production cycle.
- * Generate Purchase Orders using the Bill of Materials for the finished product as a basis.
- * Forward purchase orders to the suppliers in order to fully automate the procurement process.
- * Issue reschedule notices to suppliers. Reschedule notices are supplementary orders that can either cancel, delay, speed up and alter the size of pending orders.

Types of e-Procurement

- * e-MRO - **Maintenance, Repair and Overhaul**
 - * ERP software can also generate and send purchase orders for maintenance, repair and operating supplies
- * e-Sourcing
 - * AKA reverse auctioning
 - * Used to identify new suppliers
 - * Connect to a wider variety of suppliers

Types of e-Procurement

- * e-informing
 - * Exchanging purchasing information between buyers and suppliers.
 - * Allow suppliers to build a tender

Elements of e-Procurement

- * Request for Information
- * Request for Proposal
- * Request for Quotation
 - * Reverse auction
- * Procurement Cards
 - * P-Cards
 - * Credit Cards

Benefits

- * Real time business intelligence to vendor of customer's needs
- * Companies can track purchases being made in all departments and ensure compliance to standards.
- * Reduction of inventory levels
- * Procurement managers do not need to be as highly trained or paid because such systems are standardized and easy to learn

Benefits

- * Transactional Benefits
 - * Reduced invoice to payment time
- * Compliance Benefits
 - * Adherence to policies and procedures
 - * Sticking to the list of suppliers rather than going outside to arbitrary and questionable sources. These sources on the list have already been verified by the company
 - * Management Information Benefits
 - * Customer satisfaction
 - * Supplier satisfaction
- * Price Benefits
 - * electronic processing saves costs relating to postage stamps and stationeries.

Risks

- * Security of information
 - * Risk that information could get into the wrong hands
- * Impersonal interaction methods
- * User Confidence

Investment Recovery (IR)

It is not
trash, it is
CASH!



Investment Recovery

- * Also known as Asset Recovery
- * Defined as the selling off or disposing of, scrap, obsolete, waste or surplus goods or material in a manner that maximizes the return while minimizing the cost and liabilities

<http://www.businessdictionary.com/definition/asset-recovery.html>

Scrap

- * Material that is no longer serviceable
- * Have been discarded
- * By-product of the production process
- * Valuable scrap can be repurchased by the supplier (eg Catalyst purchased from UOP is sent back after it has done its useful life)

Obsolete

- * Material that is not likely to be ever used by the company
- * Maybe able to be used by another organization

Waste

- * Material that had been spoiled, broken or otherwise rendered unfit for reclamation
- * Has no economic value except in the case where recycling can be done such as the metals and plastics industry

Surplus

- * Stock that exceed requirement due to overly optimistic demand forecast or poor inventory management
- * Can be sold to another facility or another company with similar service (eg Bauxite alumina industry in Jamaica)

Increasing Value of Assets



Investment Recovery

- * Generally the responsibility of the Procurement Manager with dedicated investment recovery professionals
- * For every \$1 spent... Professionally-run IR Departments return \$30 to the bottomline!

Investment Recovery Soft wares

- * The use of software has also become increasingly popular to aid in the process
- * Software systems generally include the following functionalities:
 - Idle assess identification
 - Internal asset management
 - Divestment management
 - Idle asset tracking
 - User management
 - Order Management
 - Asset Promotion

Potential Benefits

- * Process Standardization
- * Higher asset sale prices
- * Increased collaboration
- * More redeployments
- * Better identification of idle assets
- * Effective buyer management
- * Better Audit preparation
- * Transparent Divestment Process
- * Increased visibility

Investment Recovery

- * The Investment Recovery Association has been around for over 25 years
- * Has an annual investment Recovery seminar and trade show focusing on professional certification, recovery research and formal education in the principles and day-to-day application of investment recovery practices

Socially Responsible Procurement

Socially Responsible Procurement

- * This is the concept that an organization's responsibilities transcends economic considerations and should incorporate societal values and objectives

Dimensions of SRP

- * Diversity and inclusion
- * Environmental Protection
- * Human Rights respect
- * Ethics and Financial Stewardship (Philanthropy)
- * Health and Safety
- * Community Involvement

Implementing SRP

- * Stages

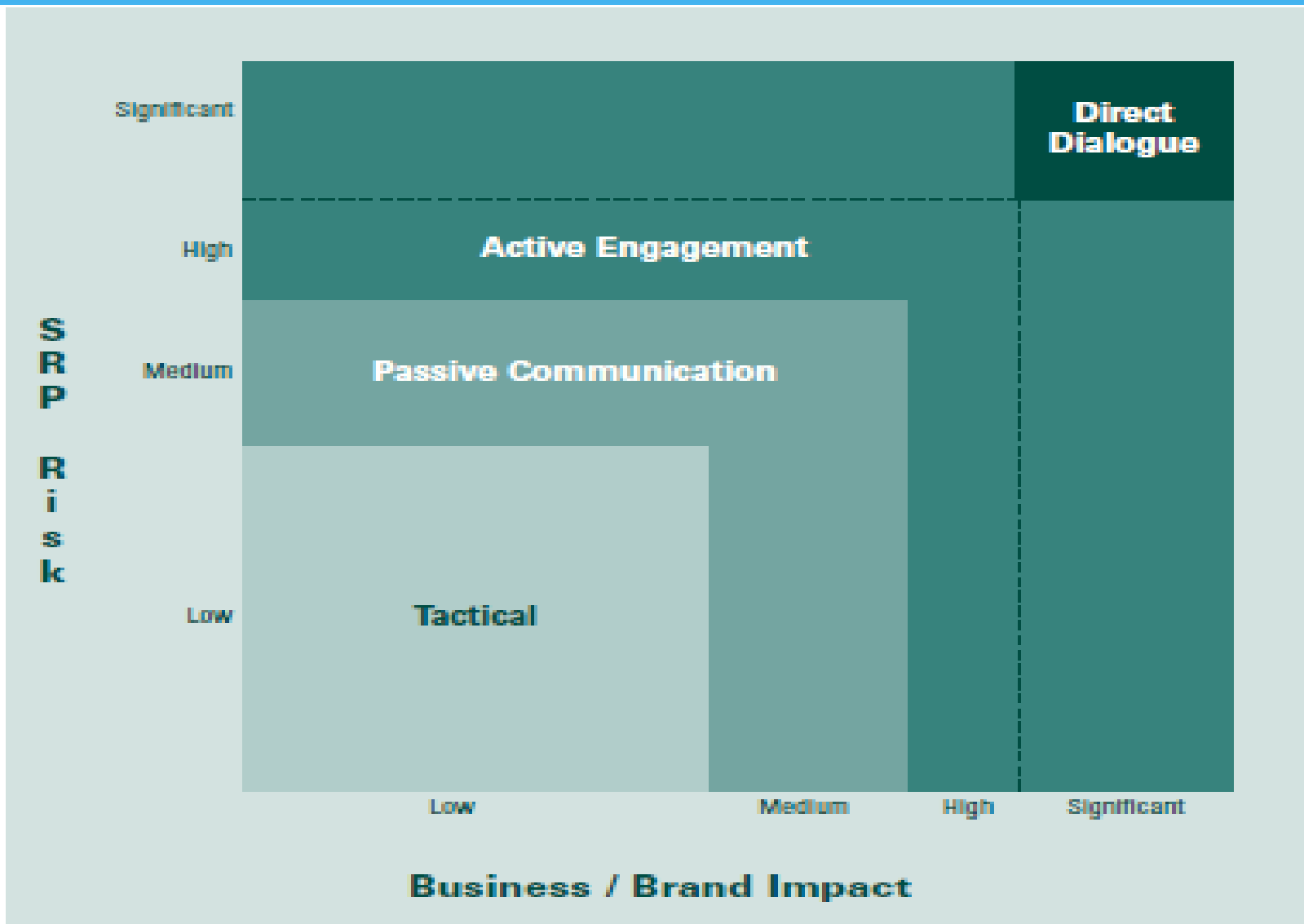
- driving forces and key issues

- Priorisation

- Supply chain communication

- Operational Processes

Risk- Base Approach to SRP



Why SRP?

- * Simply good business practice
- * Will have a payback to all stake holders
- * Encourages the assessment of long-term consequences of professionals actions and the negative socio-economic repercussions

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