Module 3: Value Enhancement Strategies.

Ch.5 Standardization & Continuous Improvement.

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General Issues in Standardization.

- **Advantages.**
  - Standardization can be an effective cost reduction technique.
  - It can reduce the number of items in inventory having a common use. This can increase the quantity of each item retained, producing lower costs through quantity discounts, as well as lowering administrative cost through fewer transactions.
  - Quite often, freight costs can be reduced as well.
  - In many cases, standardization can eliminate inventories entirely by allowing an organization to use immediately available "off the shelf" standard items in stead of "specials".
General Issues in Standardization.

- Procedures/Steps in Applying.
  1. Collect Data.
     Before proceeding with standardization the organization needs to gather information regarding the products or procedures that are candidates.
  2. Create a proposal.
     The data should be developed into a proposal for management to obtain formal support the program.
  3. Market the program.
     Widespread awareness is an important factor in maximizing success. Enlist the participation of employees.
  4. Establish an operating mechanism (usually a standard committee)
     Representative from each appropriate discipline should be appointed as standing members of the team.
General Issues in Standardization.

- **Procedures/Steps in Applying.**
  
  5. **Establish Objectives.**
  
    The standard committee must develop meaningful and measurable objectives so that solid performance data can be generated.

  6. **Simplify Standards.**
  
    Standard should be as simple to interpret and use as possible.

  7. **Monitor and report results.**
  
    Activities of the committee should be recorded, and the accomplishments published to reinforce support for the program.
Considerations for Standardization.

■ Standardization Committee.
  • Typically, standardization committee are convened to determine the specific function for which the standard is to be selected, and to make the selection.
  • As noted above, these committees are typically composed of the major users of the product to be standardized, in addition to appropriate supply and logistics personnel.

■ Involvement of Other Departments.
  • Many other departments may be involved in standardization decision.
  • Production, maintenance, engineering, information systems, marketing, and other departments may participate, depending on the specific standardization decision under consideration.
Considerations for Standardization.

- **Effects on Production Methods/Operations.**
  - Standardizing components affects production and operation in several ways.
  - By creating design standards and parts commonality, an organization minimizes the number of parts required for production, thereby reducing inventories and space requirements.
  - Standardization of machinery and equipment minimizes training requirements for both machine operators and repair personnel. It also reduces repair parts inventories and increases inventory performance.
  - Standardization of processes improves workflow, productivity, and quality.
Considerations for Standardization.

- **Issues for Standardization.**
  - **Application to high-use or high-volume items.** The most beneficial application of standardization will be the highest volume requirements. Diversity within usage creates additional stock numbers, complicates recordkeeping, and lowers purchasing leverage, among other detrimental effects.
  
  - **Application to procurement of facilities.** Like capital equipment, facilities can benefit from standardization. For example, if multiple installations are required, one standard design minimizes architectural and design costs, improves construction efficiencies, and increases purchasing leverage.
  
  - **Application to procurement of MRO items.** Maintenance, repair, and operating supplies are a particularly lucrative area for standardization savings. MRO items comprise all indirect materials, such as electrical, plumbing, and janitorial supplies. Also included might be bearings, office supplies, fasteners, and many other non-production requirements.
Considerations for Standardization.

- Issues for Standardization.
  - **Brand Names vs. Generic Names.** Brand name products cost often more than similar products, but some of this cost can be justified by the reduced purchasing time and expense needed to order the item, and by the greatly reduced inspection time.

    A purchaser should carefully investigate to ensure equivalency before purchasing generic products. If they truly are equal, cost savings may be realized. If not, significant problems and failures can be averted by use of the brand name item.

  - **Administration cost per part number.** Administrative costs of non-standardization include maintenance of large databases, large inventories and inventory carrying costs, and other administrative costs such as ordering and receiving. As the number of part numbers maintained by an organization decreases through standardization, these costs should decrease accordingly.
Considerations for Standardization.

- Issues for Standardization.
  - **Maintenance cost.** An area demanding increasing analysis by purchasers is the impact that non-standard capital equipment purchases have on spare parts inventories and maintenance costs.

- **Legislative issue.** For governmental organizations there may be concerns that result from standardization efforts. Some agencies require competition for certain types of transactions. If, in the standardization process, certain suppliers are precluded from bidding, legislative or administrative rules may be violated. Purchases should be aware of these issues.

- **Cost-benefit analysis pertaining to standardization.** Standardization programs require an initial investment in employee time to research and select appropriate organizational standards. In addition, there is the ongoing investment to maintain the program and conduct the necessary standards reviews.
Organization Standards.

- Basic Categories of Organization Standards.
  - Organization standards can be separated into four basic categories.
    - Material.
    - Supplies.
    - Equipment.
    - Procedure or process.

- When an organization includes equipment in its standardization program, it is not only possible to reduce the cost of the equipment itself, but even greater saving may be realized relative to operating costs, training, maintenance, spare parts, and suppliers. Some of advantages of standardizing equipment were identified earlier in this task.
Government Standards and Standard Organizations.

- National Institute of Standards and Technology (NIST)
  - The National Institute of Standards and Technology (NIST) is an agency of the U.S. Department of Commerce's Technology Administration. It was established by Congress "to assist industry in the development of technology needed to improve product quality, to modernize manufacturing processes, to ensure product reliability and to facilitate rapid commercialization of products based on new scientific discoveries."

- NIST has four major programs.
  - Measurement and Standards Laboratories.
  - Advanced Technology Program.
  - Manufacturing Extension Partnership.
  - Malcom Baldrige National Quality Award.
Government Standards and Standard Organizations.

- Standards Associations/Organizations.
  - Society of Automotive Engineers (SAE) The Society is comprised of nearly 80,000 members from almost 100 customers who share technical information and advance engineering of mobility systems.
  
  - American National Standards Institute (ANSI) The American Standards Association (ASA) was founded in 1918 by five engineering societies in order to remove the confusion resulting from the several hundred groups that were engaged in issuing standards. Three departments of the federal government soon joined ASA. Later the membership was broadened to include all nationally recognized technical societies and professional trade associations having an interest in standards. The National Association of Purchasing Agents, which later become NAPM, became a member of ASA in 1950. ASA changed its name to the American National Standards Institute in 1969.
Government Standards and Standard Organizations.

- Standards Associations/Organizations.
  - American Society for Testing and Materials (ASTM) The mission of ASTM is to promote public health and safety; to contribute to the reliability of materials, products, systems and services; and to facilitate national, regional, and international commerce.
  - International Organization for Standardization (ISO) Its purpose is to promote the development of standardization and related activities, to facilitate the international exchange of goods and services, and to develop cooperation in intellectual, scientific, technological, and economic activity.
  - Underwriters Laboratories Inc. (UL) UL is an independent, not for profit product safety testing and certification organization.
Steps in Continuous Improvement.

- **Definition of the Process.**
  - Defining the boundaries of the process. Boundaries will also define the inputs and outputs of the process and who its customers are.
  - Defining who should be involved in the improvement process. Everyone working inside the boundaries will be involved.
  - Defining the level of detail to flowchart. A high-level flowchart of the process generates understanding and agreement on the process itself, and can be used for establishing measurements.
  - Defining what information to include.
Steps in Continuous Improvement.

- **Definition of the Measurement Systems.**
  - Two sets of measurements are included in process improvement.
    - Business result measurements.
    - Improvement measurements.

- **Improvement of Methodology.**
  - This is the actual work of examining the process and designing simpler alternative to the process.
    - Eliminating unnecessary or redundant tasks.
    - Redesigning and simplifying the necessary tasks.
    - Eliminating rework.
Continuous Improvement.

Steps in Continuous Improvement.

- Execution of the Action Plan.
  - Once the idea for an improvement has been agreed upon, it must be implemented and the results measured.

- Results Measurements.
  - Did the change to the process result in a change in either business performance or process performance?

- Benchmarking and Evaluation.
  - Benchmarking is the comparison of one's own process to the best process for accomplishing that business result that exists anywhere.
1. The process of developing uniform specification for the purpose of increasing interchangeability is known as
   A. System contracting.
   B. Cooperative purchasing.
   C. Simplification.
   D. Standardization.

2. Of the following, the GREATEST benefit of standardization is
   A. Reduced costs.
   B. Enhanced communication.
   C. Increased quality.
   D. Increased efficiency.
3. Engineers in both product and facility design often identify various components by brand name. Under an urgent, time-compressed schedule, which of the following is MOST likely to generate immediate competition for such items?

A. Issuing the specification as released by the designer.
B. Requiring the designer to generate performance specifications as soon as possible.
C. Including the phase "brand name or equal" in the solicitation.
D. Researching the field to find competitive items.

4. The team approach to standardization makes acceptance more likely, mainly because it involves

A. The greatest number of participants.
B. The stakeholders who are affected by the change.
C. A large number of participants who have an opportunity to present their views.
D. The reaching of a consensus.
Performance Check.

5. Most organization entering into a formal standardization program are likely to use the
   A. Purchasing coordinator approach.          B. Engineering task force approach.
   C. Production coordinator approach.        D. Cross-functional team approach.

6. The use of ANSI X12 standards for the EDI transmission of purchasing documents
   aids in all of the following EXCEPT
   A. The elimination of telecommunication barrier between incompatible computer
      equipment.
   B. The agreement between trading partners on the contract and format.
   C. The development and growth of EDI systems.
   D. Enhancing the use of EDI across industry lines.
7. Process improvement considers all of the following EXCEPT
   A. Benchmarking.
   B. Improvement of methodology.
   C. Results measurement.
   D. Make-or-buy.

8. Participating in a multi-company benchmarking study permits a comparison of a purchasing department with all of the following EXCEPT
   A. The data for a specific purchasing department within the study group.
   B. A composite of many purchasing departments in a given sector.
   C. A composite of several purchasing departments in several sector.
   D. The best performances within in a given sector.
9. The purchasing department can play a pivotal role in a process improvement program due to its
   A. Right to review and question specification.  
   B. Authority to make procurement commitments on behalf of the organization.  
   C. Right to review and select suppliers.  
   D. Interface with other internal departments and with suppliers.

10. A process improvement team should be comprised of which of the following?
    A. All participants, or else a representative from each area affected by the process.  
    B. The individuals and/or departments who originally conceived the process.  
    C. Purchasing management and operations management only.  
    D. Top management and purchasing management only.
11. Which of the following are considered temporary (as opposed to permanent) measures of effectiveness in a process improvement program?

I. Business results measurements.
II. Improvement measurements.

A. I    B. II    C. Both I and II    D. Neither I and II
Performance Check.

Solutions.

1  2  3  4  5  6  7  8  9  10  11
D  A  C  D  B  A  D  A  D  A  B