

Module 1

Understanding the Extended System

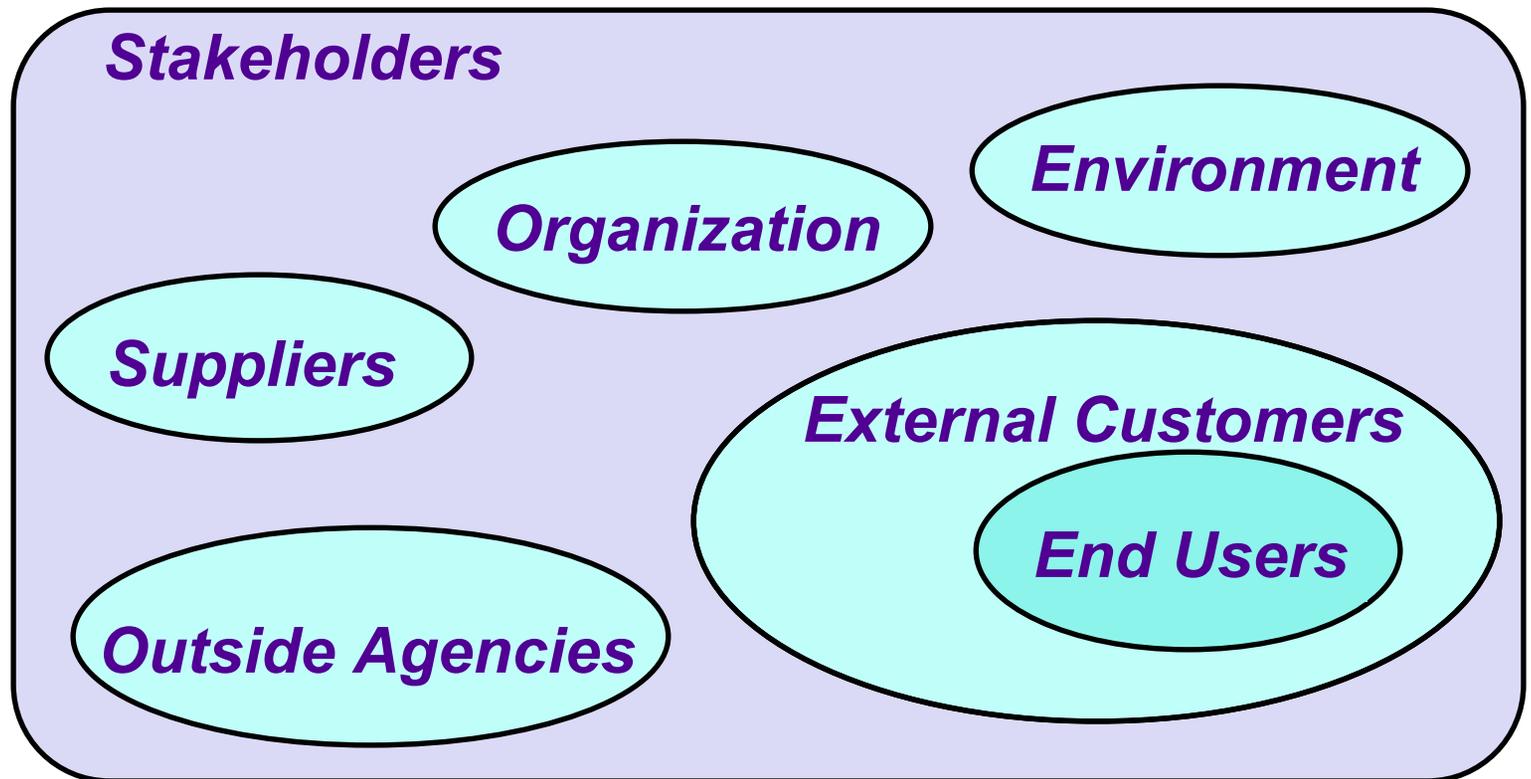
Objectives

- ❑ **To gain knowledge of the relationship between an organization's mission and its extended system**
- ❑ **To gain knowledge of your extended system which will lead to optimization**
- ❑ **To depict your organization's extended system**
- ❑ **Identify the 15-step SAPI Model and the activities of each step**

Definition of TQL

- **The application of quantitative methods and the knowledge of people to assess and improve:**
 - ① **Materials and services supplied to the organization**
 - ① **All significant processes within the organization**
 - ① **Meeting the needs of the end user, now and in the future.**

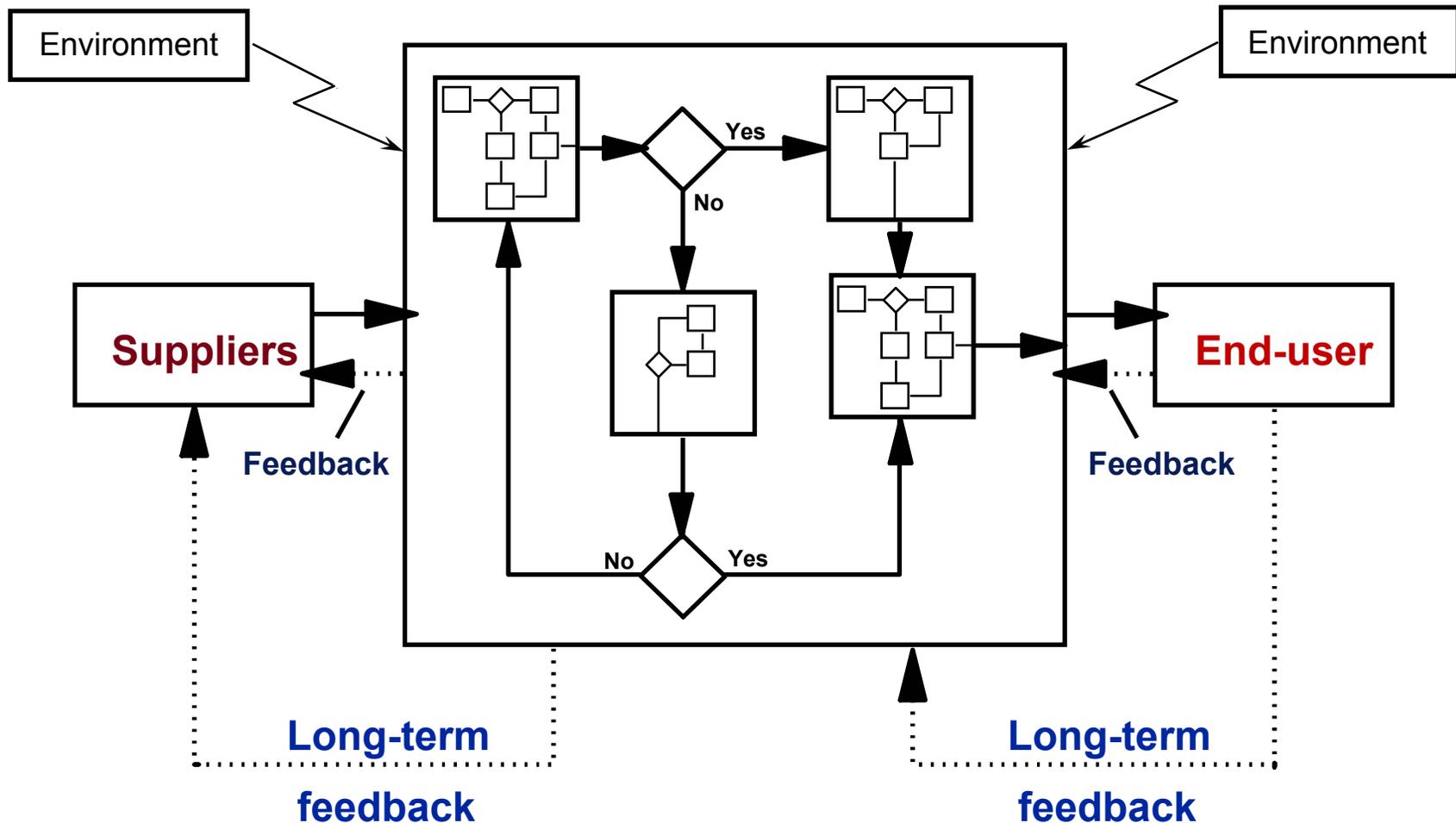
Stakeholders, Customers and End Users



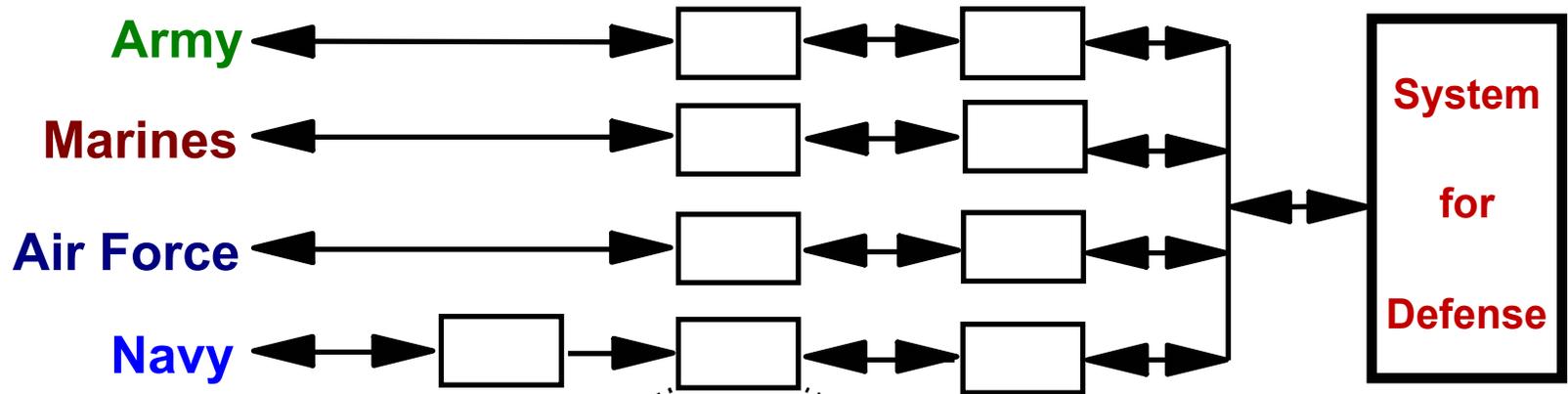
System

A collection of processes that interact with each other in an organized way to achieve a common goal or aim

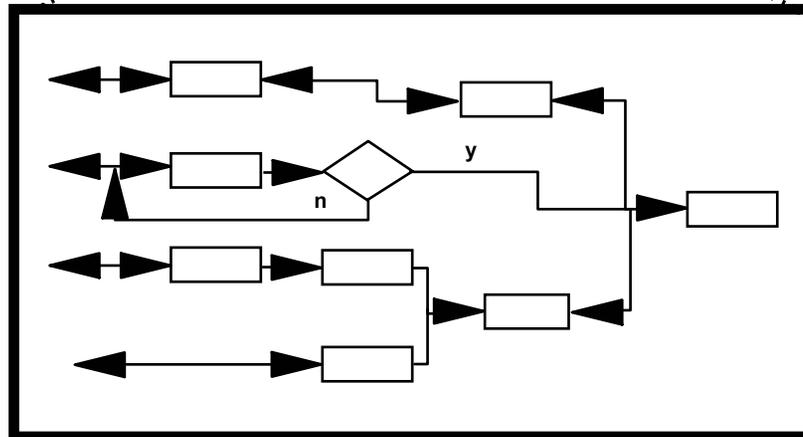
The Extended System



Systems and Subsystems



**COMTRAPAC
or
COMTRALANT**



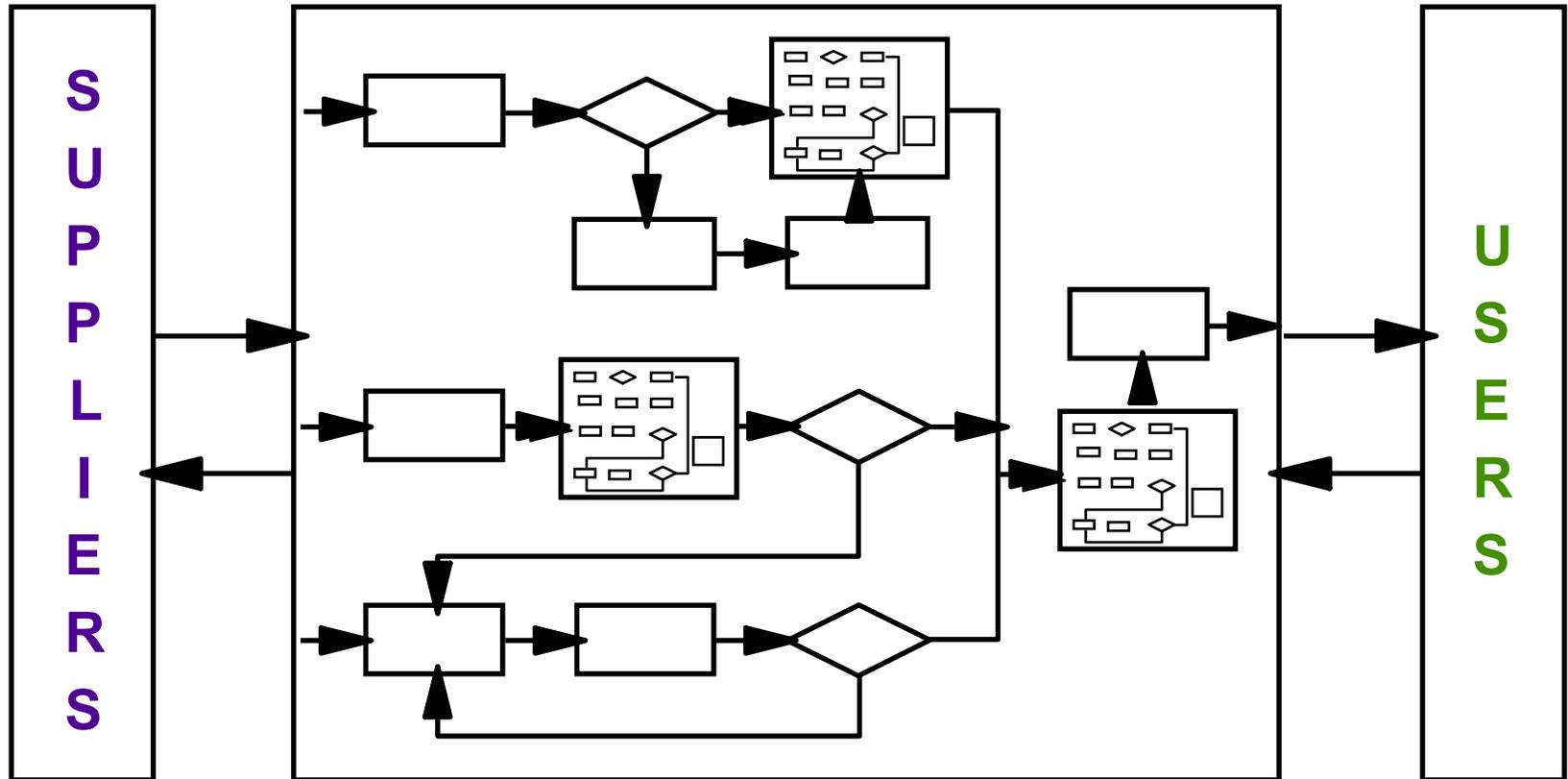
Mission: The *Aim* of the Extended System

- ❑ **Mission Statement: an enduring statement of purpose**
- ❑ **What the organization does, how it does it and for whom it does it.**
- ❑ **Aligns the organization as a system toward a common purpose**

What is the Mission?

- ❑ **Station Motor Transport**
- ❑ **Shore Intermediate Maintenance Activity**
- ❑ **Fleet and Industrial Supply Center**
- ❑ **Naval Hospital**
- ❑ **Aircraft Squadron**
- ❑ **Submarine**
- ❑ **Recruit Training Command**

A Process



Significant and Critical Processes

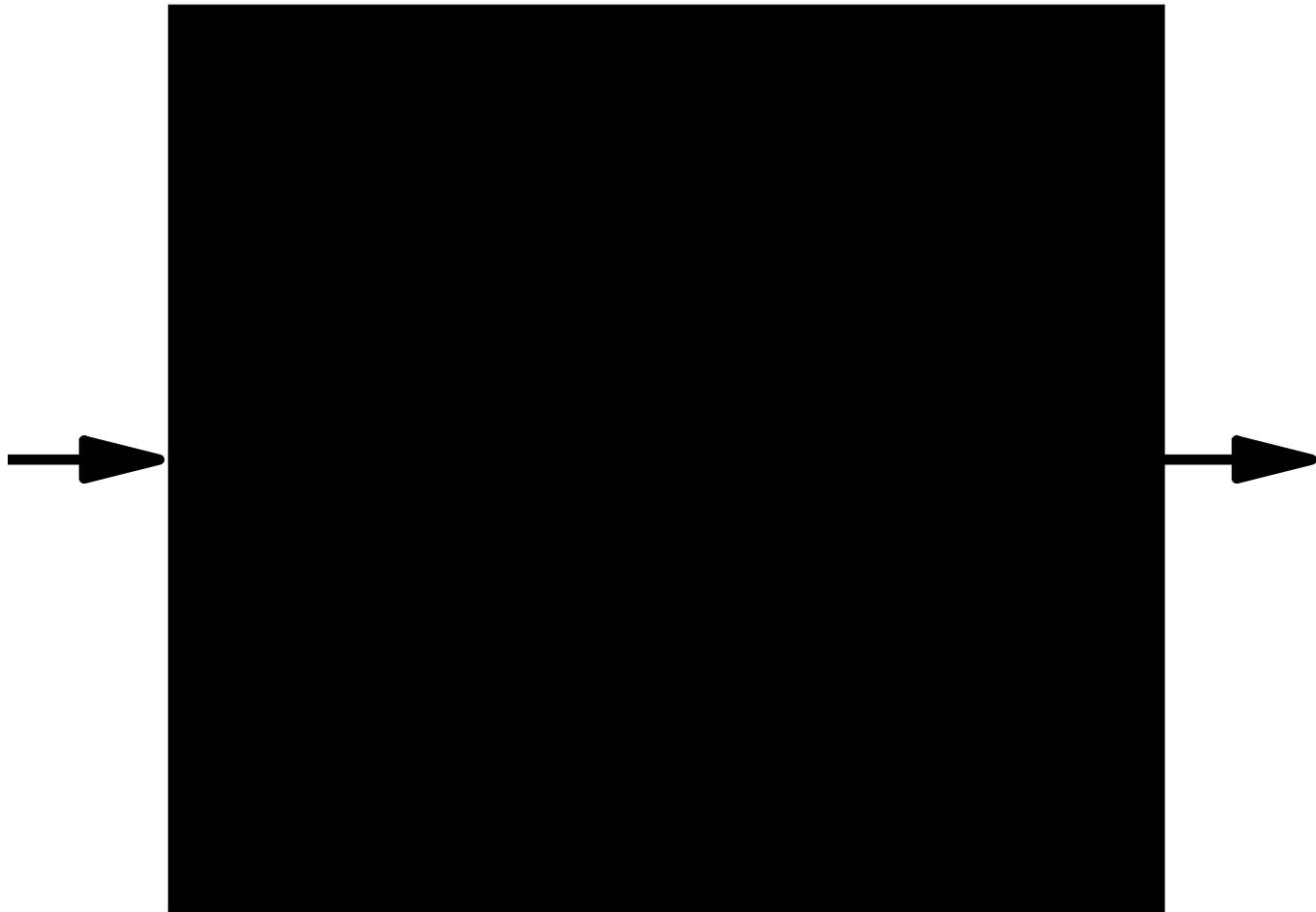
□ Significant Processes

- ① Are of primary importance to the mission of the organization
- ① Contribute directly to meeting the needs and requirements of customers
- ① Are processes by which the mission-essential work of the organization is accomplished

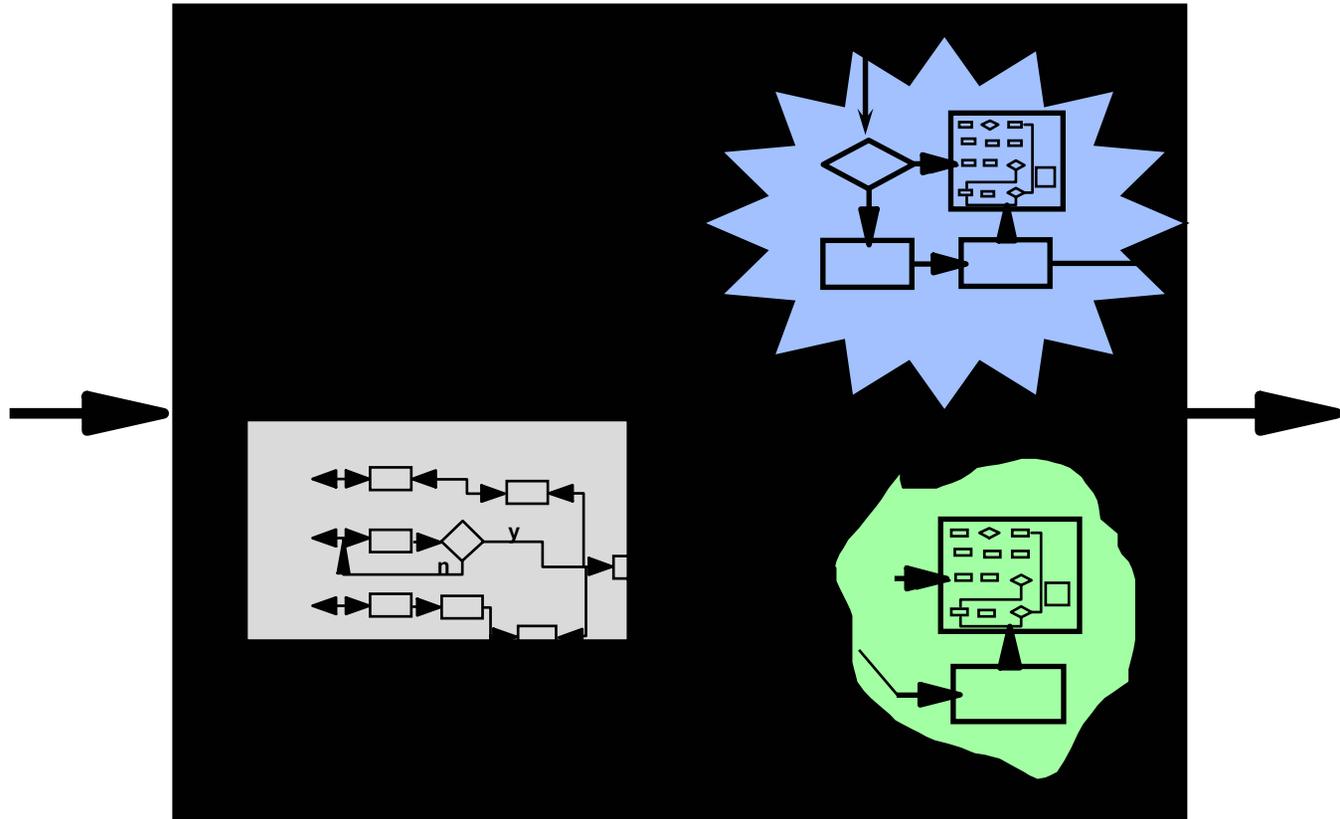
□ Critical Processes

- ① Stages within a significant process
- ① Deemed most important for improvement

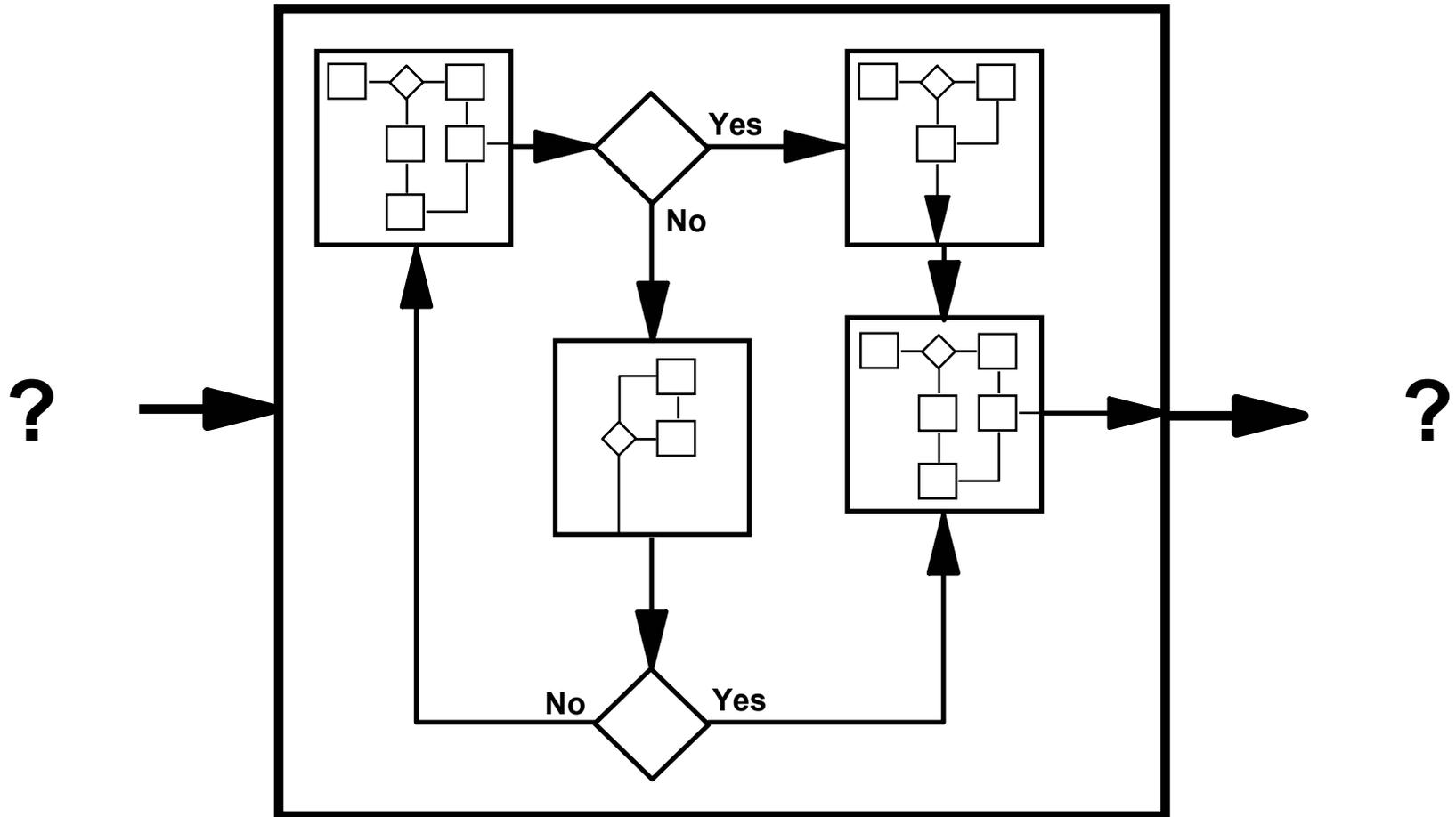
Organization as a Black Box



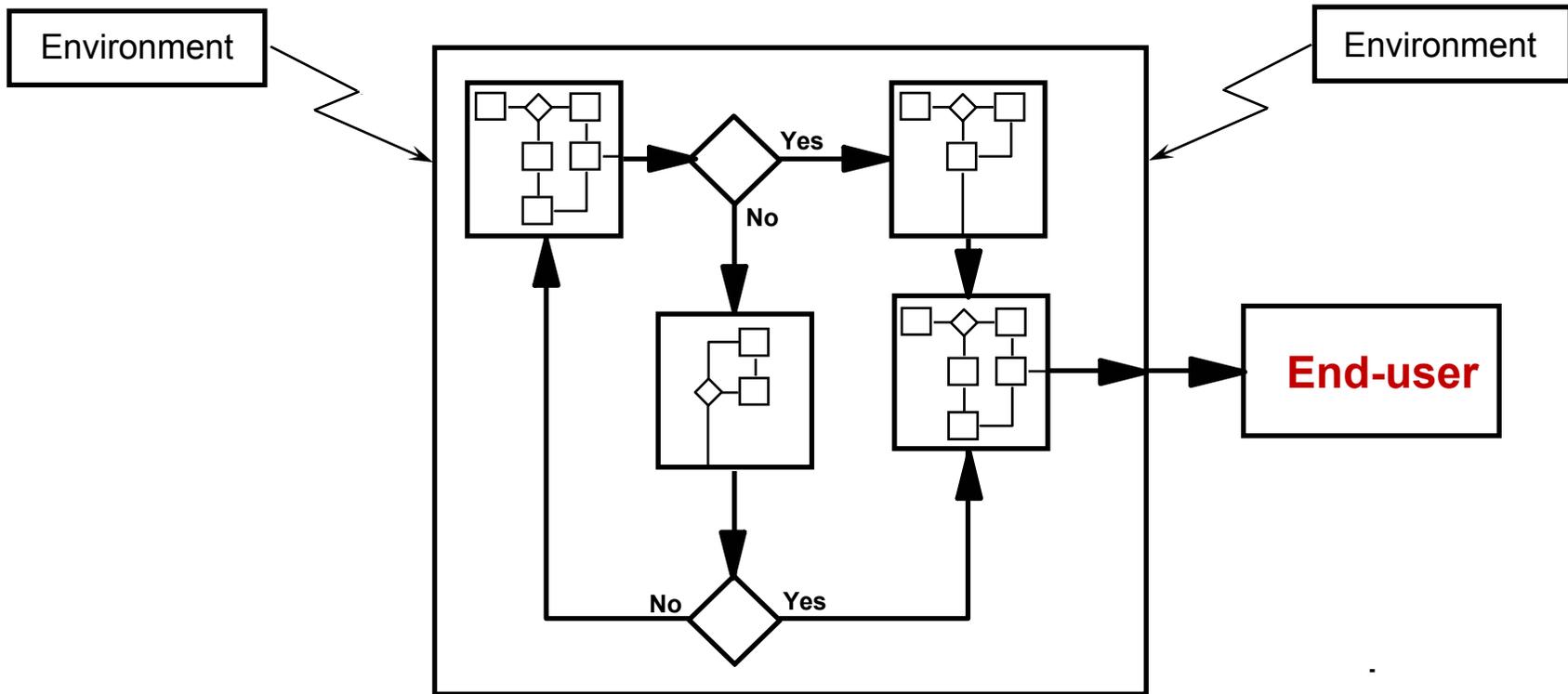
A View of the Organization as Bits and Pieces



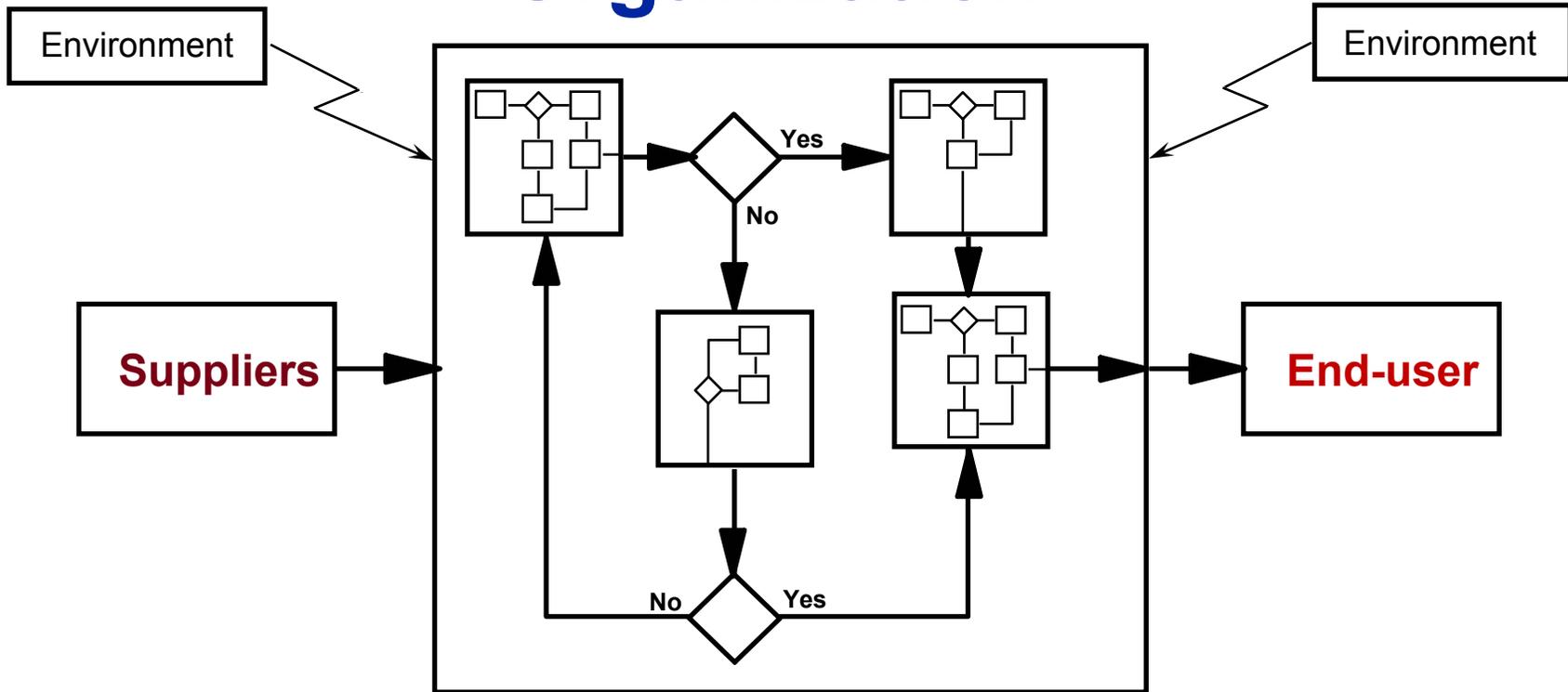
The Organization as a System



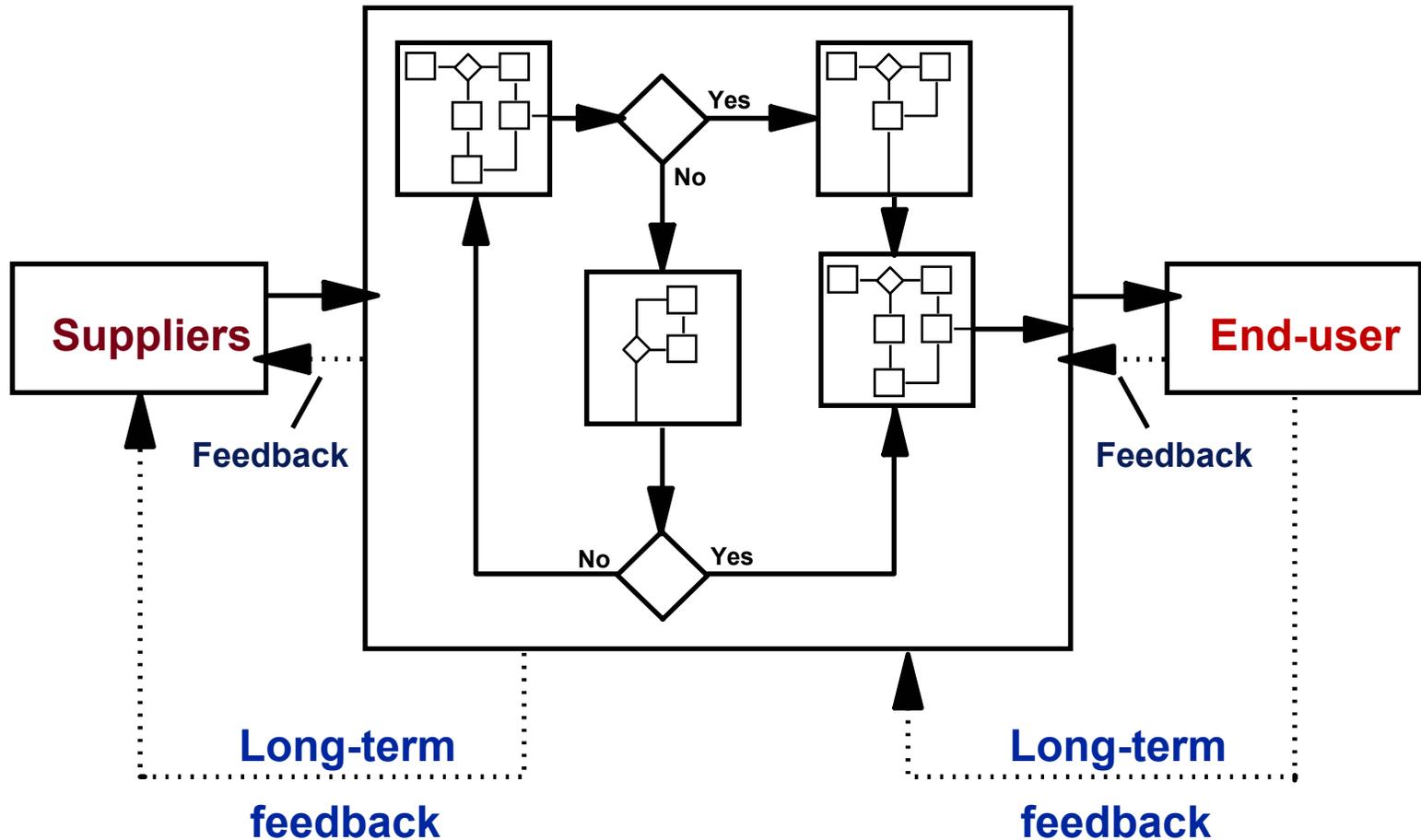
End-users and the Organization



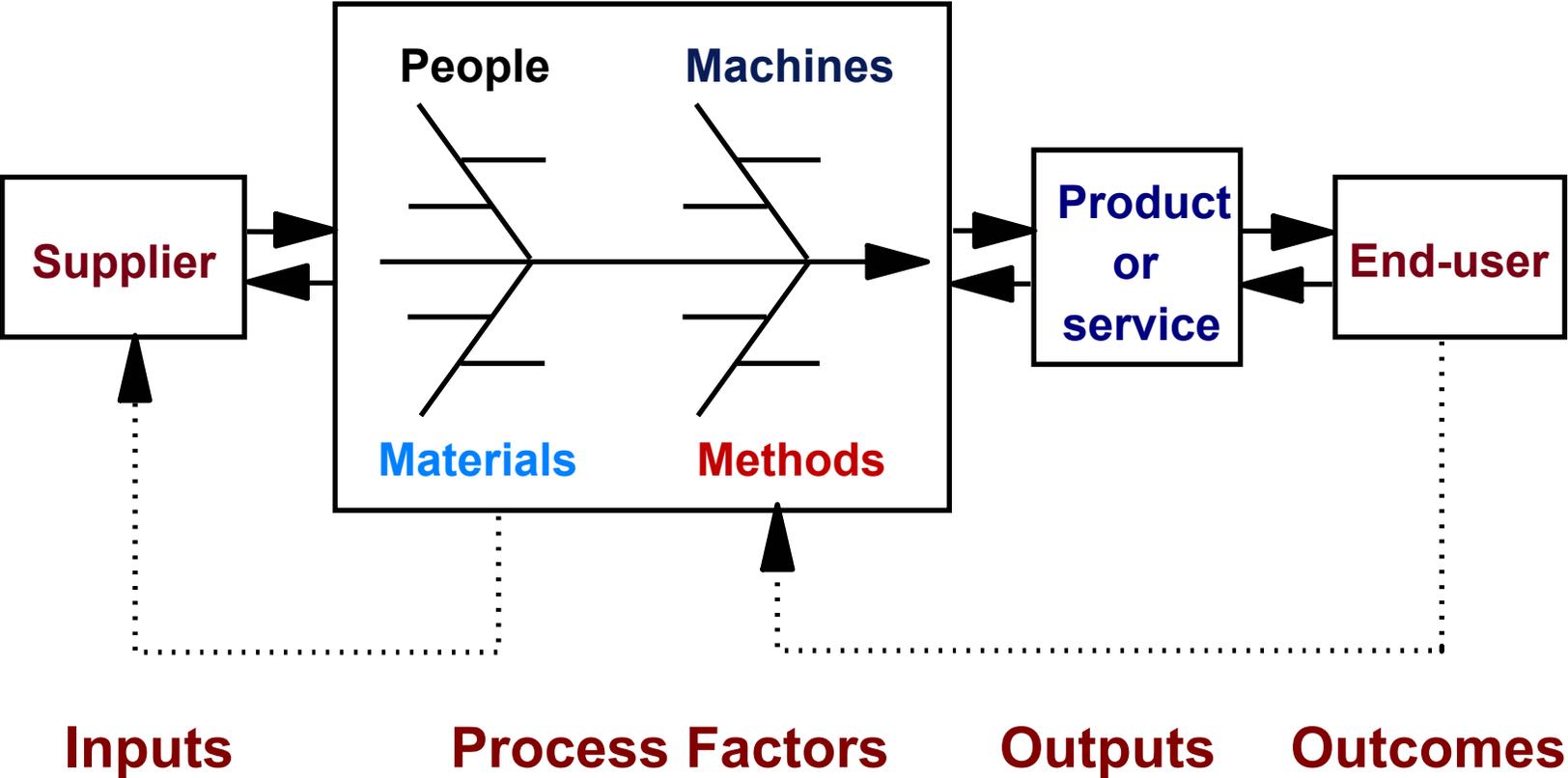
Suppliers, End-users and the Organization



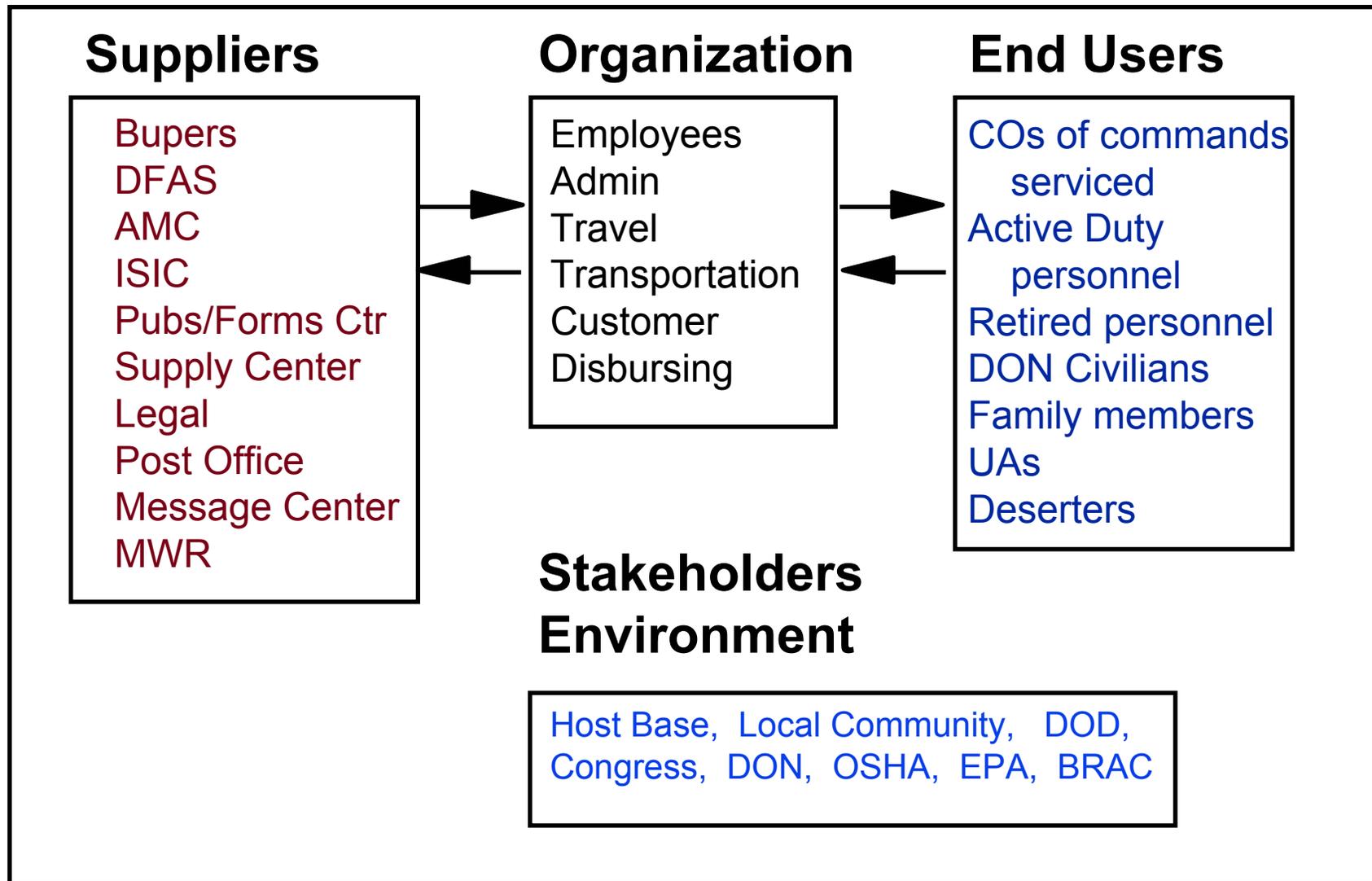
Feedback Loops and the Organization



Measures in the Extended System



Extended System for a PSD



An Example of Measurements in the Extended System

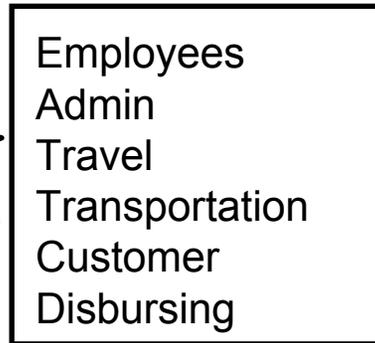
Suppliers



Inputs

- Information on changes provided by service mbr
- Supporting Documents
- Training of DKs
- Computer Access

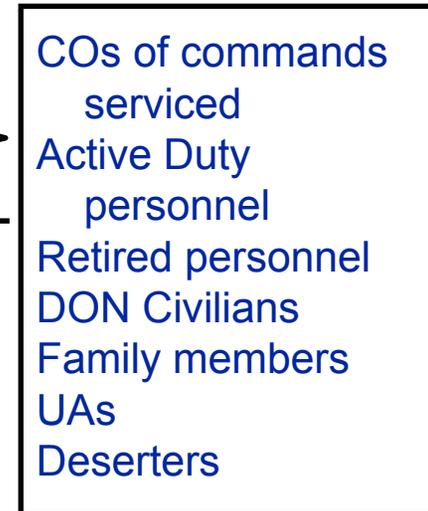
Organization



Process

- Processing changes in SDS system
- Corrections to the ECHO system made within 3 days

End Users



Outputs

- Correct check issued on time
- Correct direct deposit by payday

Outcomes

- Timely service
- Accurate pay
- Responsiveness to needs
- Courtesy
- Smooth travel

Constraints Inherent in Any System

Focus on the Extended System

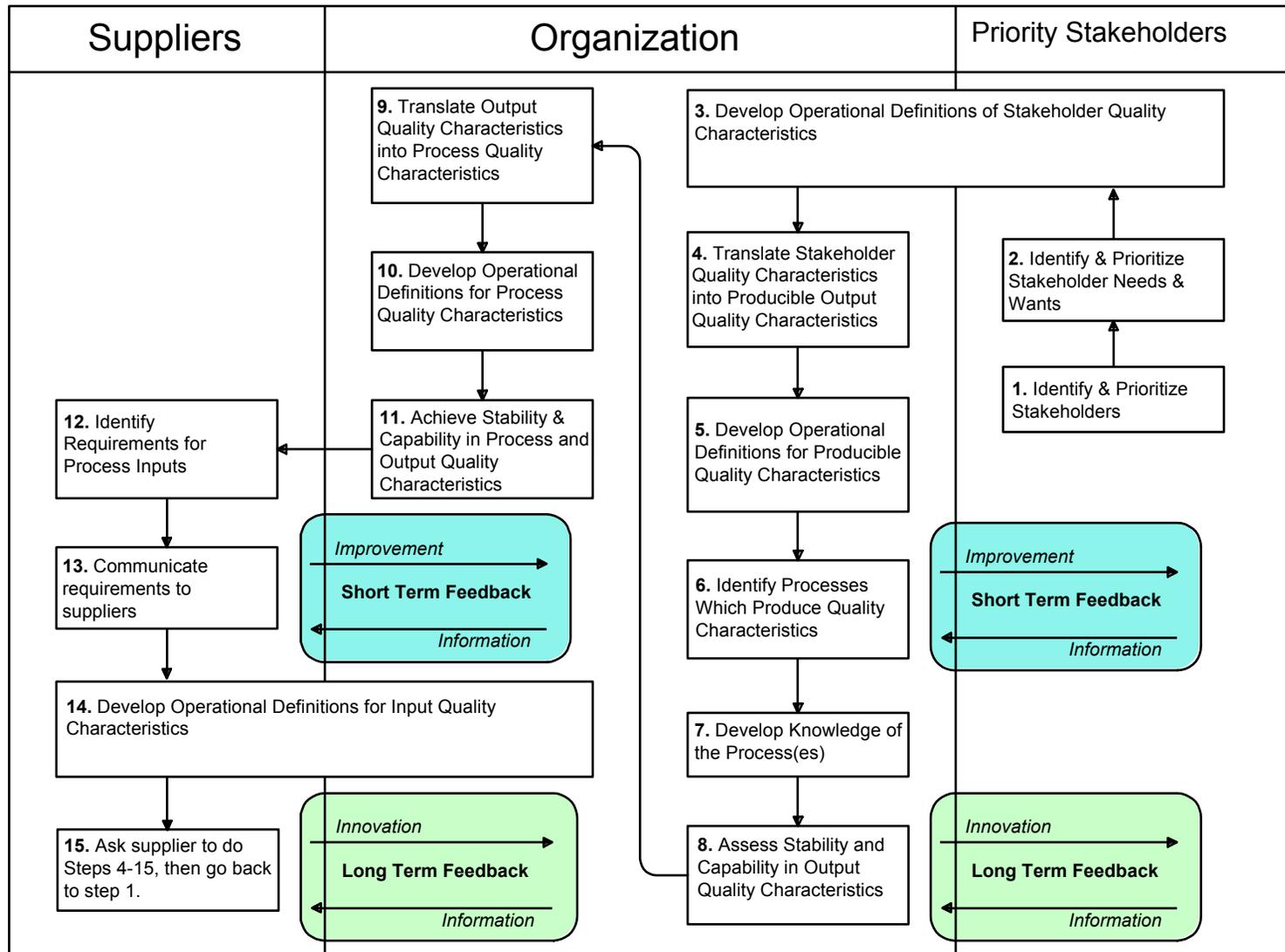
- **Optimization**
- **Suboptimization**

Stages of the Systems Approach to Process Improvement Model



Aim: Improve those aspects of the system that will optimize its performance

Systems Approach to Process Improvement Model



Step 1:

Identify and Prioritize Stakeholders

- How to start process improvement efforts**
- The dominant factors of the organization's business**
- Identify who is responsible for these activities**
- How to identify the most important stakeholders**

Step 2: Identify and Prioritize Stakeholder Needs and Wants

- ❑ Express needs and wants in terms of quality characteristics--product or service characteristics**
- ❑ Develop a sampling plan to collect reliable data in an economic way**
- ❑ Provide for better planning in meeting stakeholder needs and wants**
- ❑ Focus on the most significant quality characteristics**

Step 3:

Develop Operational Definitions for Stakeholder Quality Characteristics

- ❑ **Express stakeholder concepts or ideas so they provide a communicable meaning for business**
- ❑ **Understand and agree on what is needed**
 - **Criterion**
 - **Test**
 - **Decision**

Step 4: Translate Stakeholder Quality Characteristics Into Producible Quality Characteristics

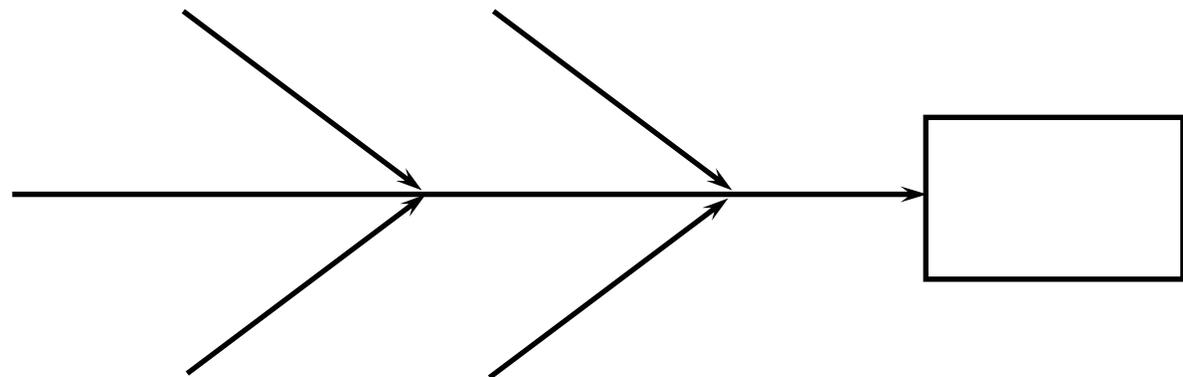
- What do the needs and wants mean in terms of our organization?**
- How can we produce what is needed?**

Step 5: Develop Operational Definitions for Producible Quality Characteristics

- Communicable meaning between internal customers and suppliers**
- Communicating the right thing to the producers**

Step 6: Identify Processes in Which Quality Characteristics are Produced

- Where do we focus our efforts?
- What are the relevant methods and techniques?



Step 7: Develop Knowledge of Processes

- ❑ **How do we produce it?**
- ❑ **What are the causes of quality?**
- ❑ **What are the major contributors?**
- ❑ **Do we need more information?**

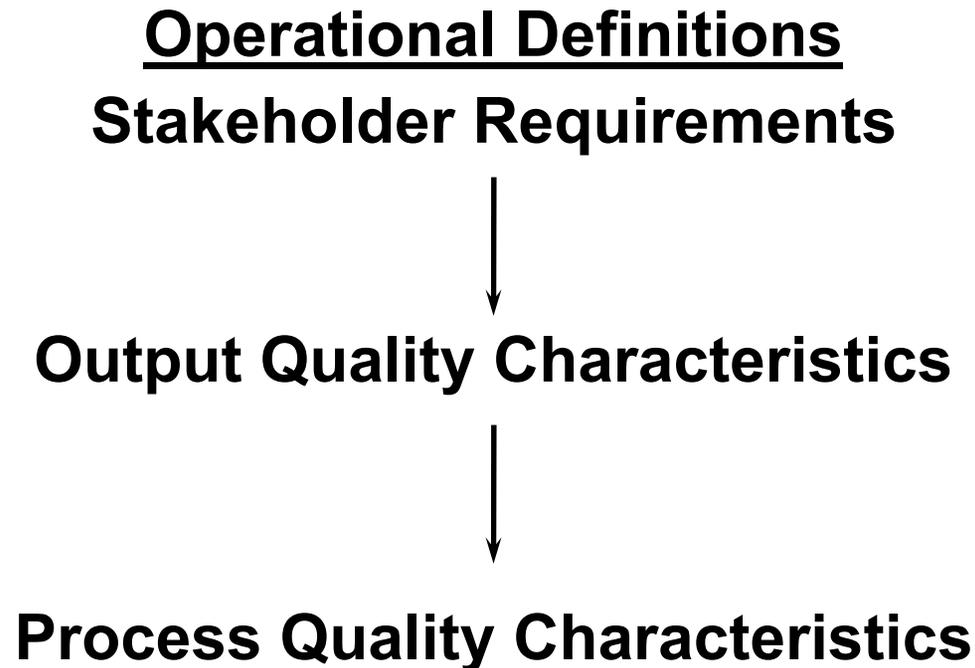
Step 8: Assess and Achieve Stability and Capability in Output Quality Characteristics

- Do we typically have a rational basis upon which we can predict and plan?**
- Are we minimizing the losses of taking action when it is not needed and not taking action when it is needed?**
- Are our processes capable of producing what is required?**

Step 9: Translate Output Quality Characteristics Into Process Quality Characteristics

- ❑ How can you further improve the output measures of the cause system?**
- ❑ Which process causes contribute the most to the output variation?**
- ❑ What will happen if you only achieve and maintain output stability and capability?**

Step 10: Develop Operational Definitions for Process Quality Characteristics

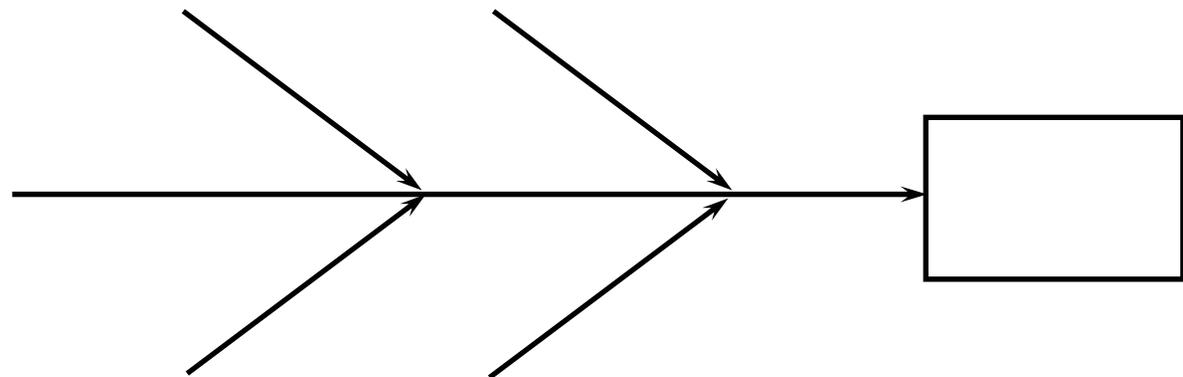


Step 11: Assess and Achieve Stability and Capability in Process Quality Characteristics

- Explore ways to improve output performance**
- Identify ways to reduce the variation in process factors**
- Determine quality characteristics of the process factors to focus on**
- Continue to monitor output measures**

Step 12: Identify Requirements for Process Inputs

- ❑ What is needed to produce stakeholder requirements?
- ❑ Why do we wait until now to identify process inputs?



Step 13: Communicate Requirements to Suppliers

- ❑ **Be specific**
- ❑ **Determine the input quality characteristics to be improved**
- ❑ **Input variation is affected by the number of suppliers**

Step 14: Develop Operational Definitions for Input Quality Characteristics

- Communicable meaning for external customers and suppliers**
- Input requirements are known precisely**

Step 15: Ask Suppliers to do Steps 4 to 15, and Repeat the Model

- Suppliers must improve their own processes**
- Continual quality improvement occurs only if we repeat the model**

Summary

- ❑ **Importance of understanding the extended system**
- ❑ **Extended system components**
- ❑ **Opportunities for measurement and the extended system**
- ❑ **Stakeholder requirements, organizational improvement efforts and supplier requirements**
- ❑ **Systems Approach to Process Improvement Model**