

Universal Systems Model

Foundations of Engineering and
Technology

Technology System

- The complete process of designing, creating, using a tool and the result of its use.
- Each technology has parts that have a relationship with all other parts and to the whole.

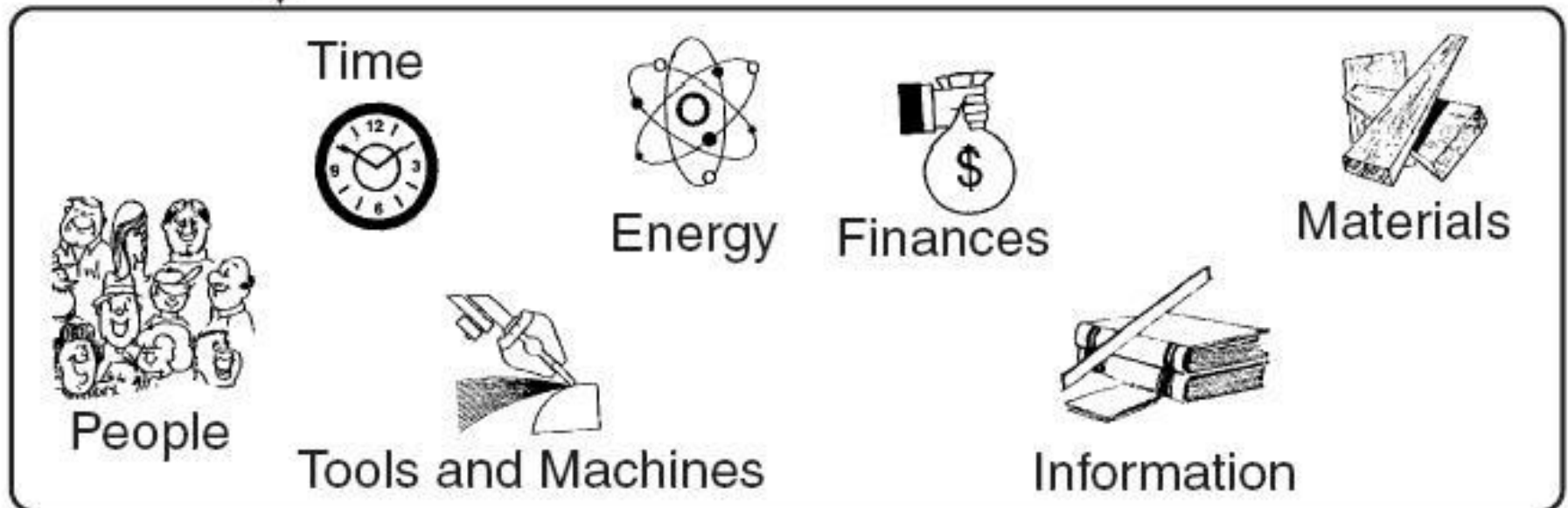
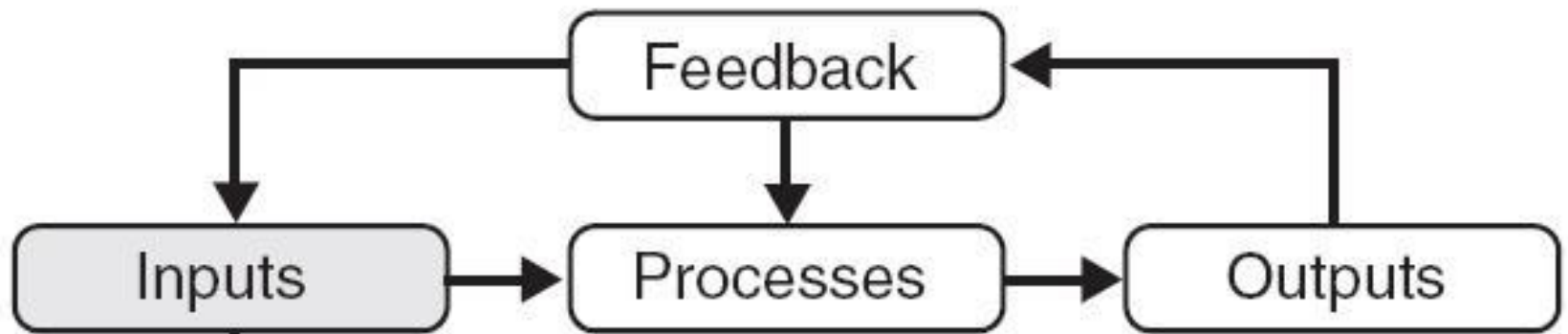
Technology Systems Are:

- Created from human need or want
- Designed and developed by people
- Modified and/or abandoned over time

Universal Systems Model Steps

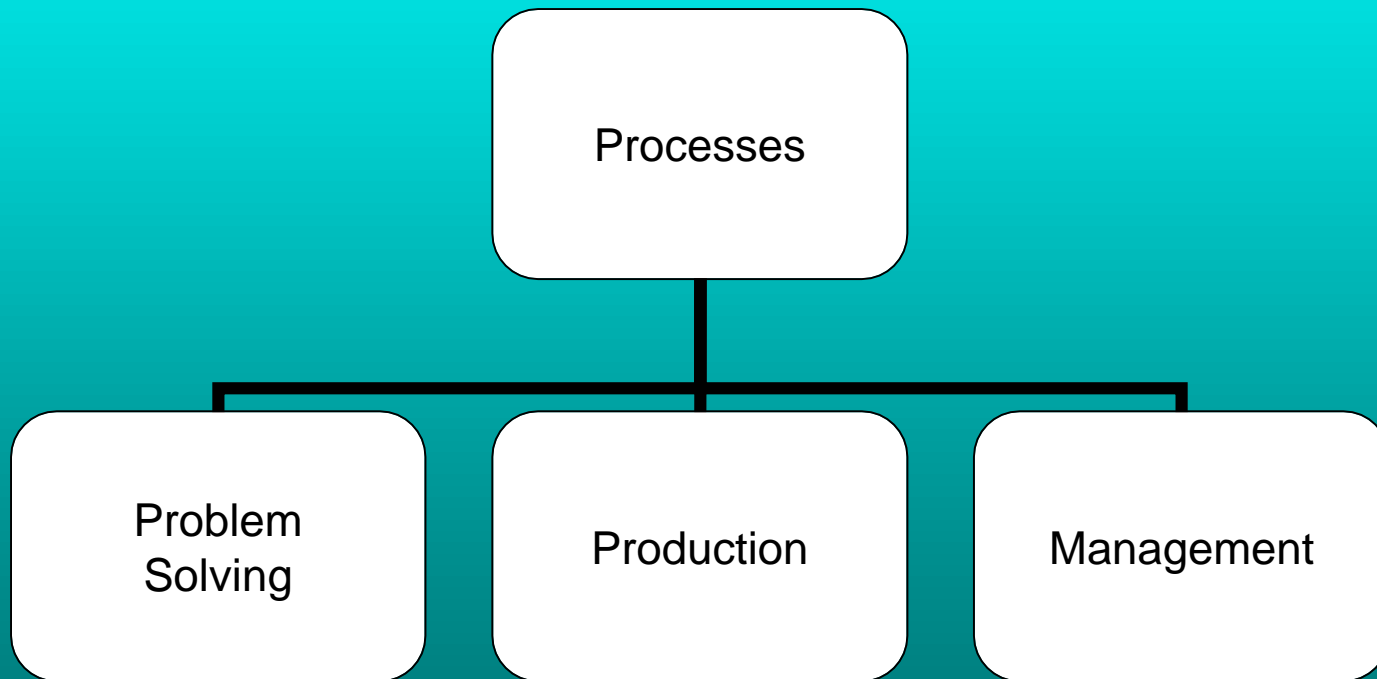
1. Inputs- elements that flow into the system and are consumed or processed in the system
 - 7 different inputs
 - » People – Everyone involved in any capacity
 - » Materials – Think Ingredients
 - » Tools or Machines – Output from another system used to modify or manipulate materials
 - » Energy – What is used to power equipment?
 - » Information – Recipe . . . Output from the problem solving process
 - » Finances – Cost for other inputs
 - » Time – Time to manufacture, develop, enhance, innovate

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Universal Systems Model Steps

2. Processes- the steps needed to complete the task



Processes

- *Problem Solving Process*
 - Identifying the problem
 - Developing solutions to the problem
 - Isolating and detailing the best solution
 - Modeling and evaluating the chosen solution
 - Pictorial or physical models
 - Selecting final solution and preparing for production
 - These were researched in project Tech before I was born

Types of Processes

Production Process

Actions completed to produce the product, structure or service

Action Verbs

Management Process

Controlling and supervising the people, materials, and the production of the output.

Hierarchy – Org Chart

Universal Systems Model Steps

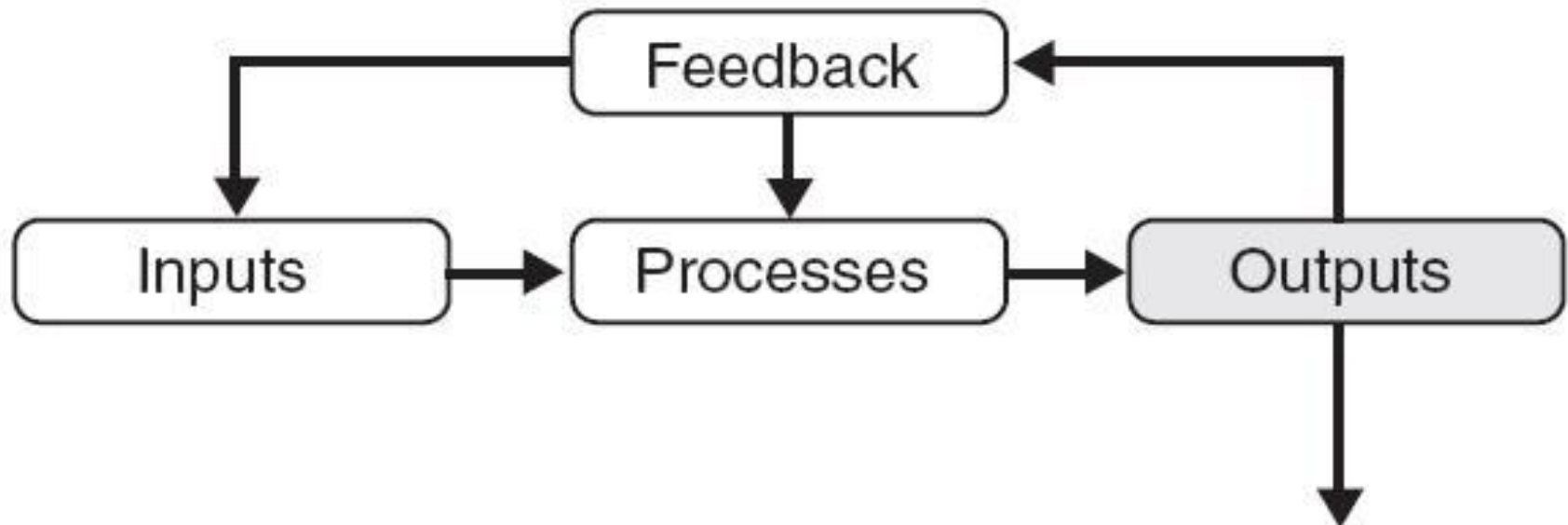
3. Outputs

- Finished product and wastes or pollution
 - Desired or Undesired
 - Intentional or Unintentional
 - Immediate or Delayed
 - Can you have outputs that fit into multiple areas?

4. Feedback- Information about the output of a system used to regulate the inputs and processes

Balance sheet – Revenue – Market Share

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Desired or Undesired
Intended or Unintended
Immediate or Delay
Can you have more than
one?

