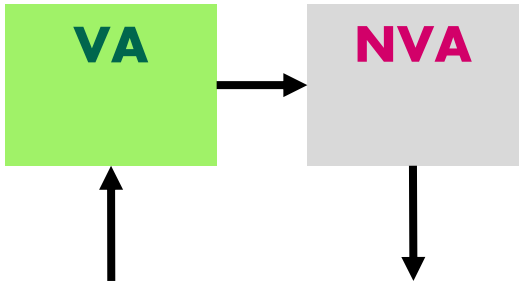
Value Analysis

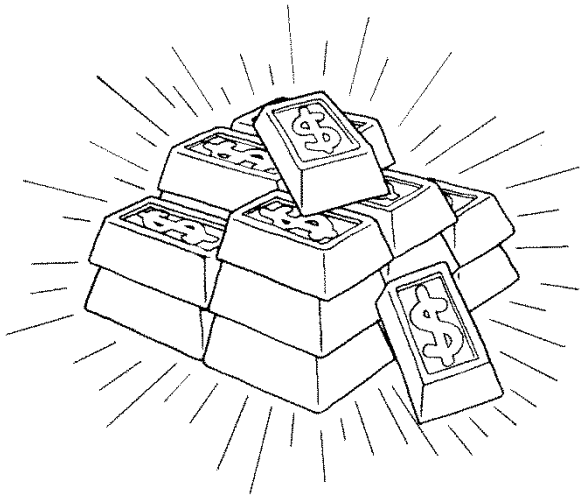


The Continuous Improvement Map

- Value Analysis

Value:

- One of the most important concepts within Lean.
- One of the most valuable outcomes Lean provides.
- **Value Analysis** focuses on what adds value to business processes as perceived by the customer.
- A process that does not add value to the product or service should be redesigned or eliminated altogether.



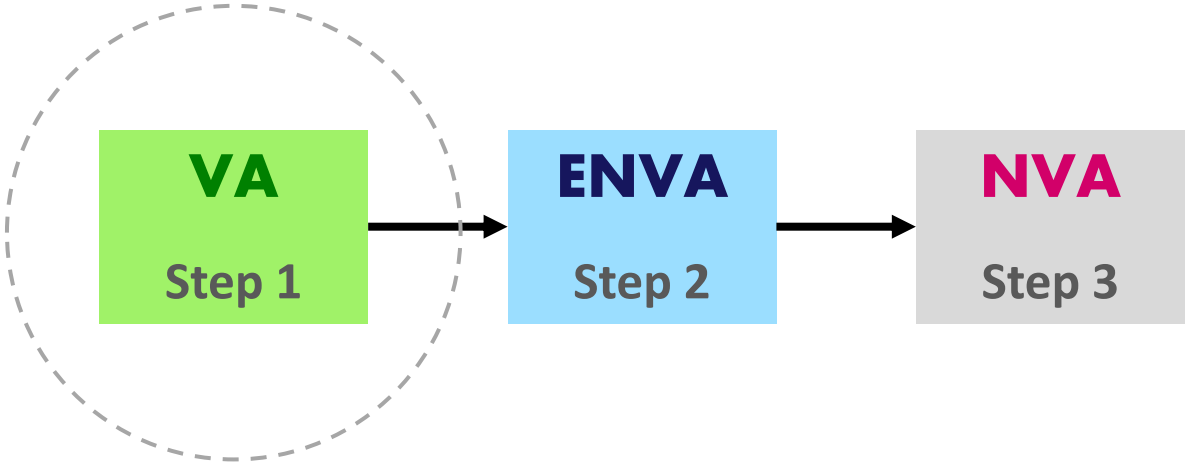
- Value Analysis

- **Each step within a process can be classified into one of three categories:**
  - Value added activities.
  - Essential non-value added activities (or unavoidable wastes).
  - Non-value added activities.

- Value Analysis

Value Added Activities:

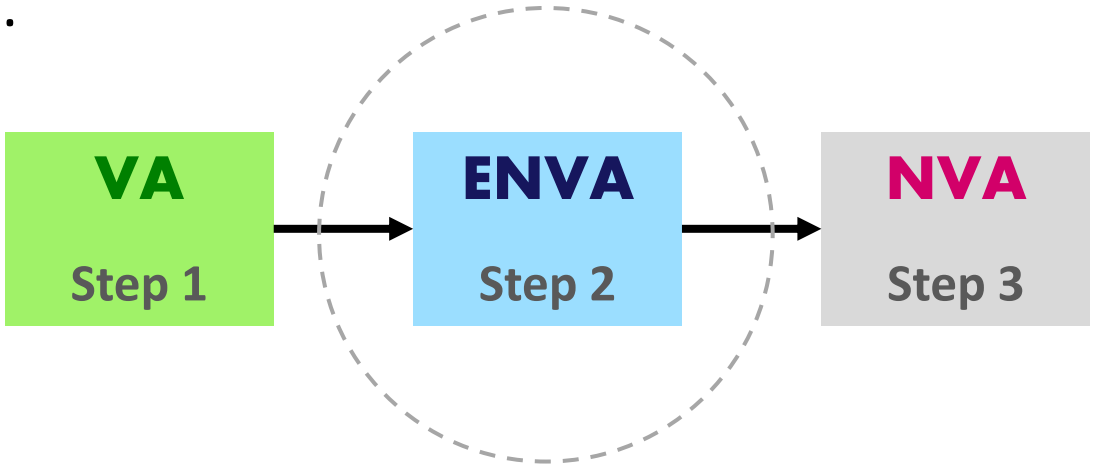
- Increase the worth of a product or services from the customer's perspective.
- **Common examples include:**
  - Machining a part.
  - Serving a customer at a call center.



- Value Analysis

Essential Non-Value Added Activities:

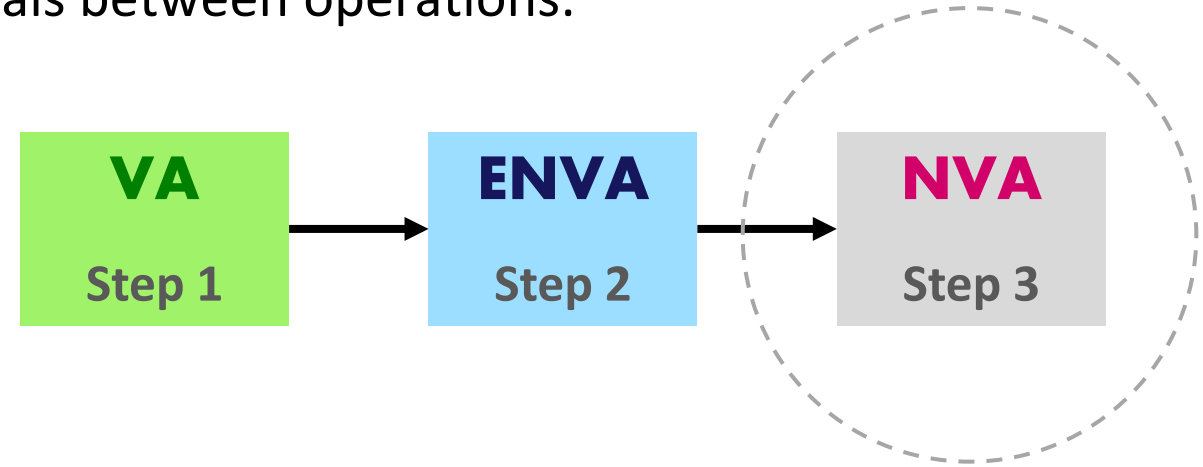
- Add no value to a product or service.
- The customer is not willing to pay for them.
- However, they are necessary for the business due to the current settings of the process.
- Common examples include: purchasing, R&D and inspecting parts for quality defects.



- Value Analysis

Non-Value Added Activities:

- Add no value to the product or service.
- Not required for business operational reasons.
- Must be eliminated immediately.
- **Common examples include:**
  - Rework an application form.
  - Handling of materials between operations.
  - Delayed starts.

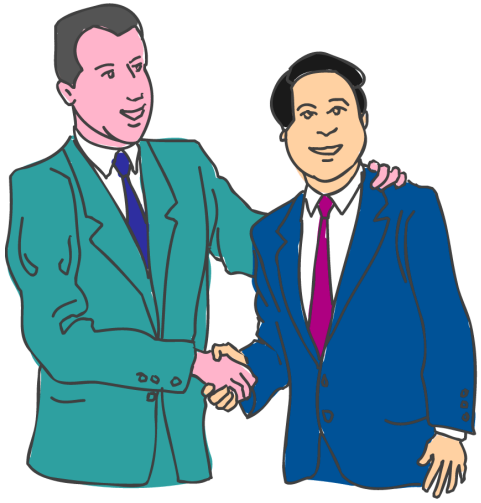


- Value Analysis

- Researches has shown that value added activities are typically less than **10%** of the total process lead time.
  - The work that the customer cares about is only **10%**.

- Value Analysis

- The first step when analyzing the value of any process is to determine who the ultimate customer is.
- An **ultimate customer** is the end user of the product or service.
- Understand their expectations clearly and know exactly what they are willing to pay for.
- Listen actively to your customers.
- Encourage them to send feedback on how well your product or service meets their needs (for future process improvements).



- Value Analysis

- **Patients** are the ultimate customers in medical services.
- It is important to provide them with comprehensive and personalized health care.
- Patients instead often get stuck in processes that don't add value to their primary care:
  - They are often asked to fill out medical forms multiple times.
  - They wait too long to receive a consultation from their primary doctor.

- Value Analysis

- The traditional approach to process improvement is to focus on reducing the time to perform the value added work.
  - Normally through capital investment.

- The Lean approach however focuses on eliminating the root causes of the **90%** of the non-value added activities.
  - Much cheaper and more effective.

- Value Analysis

- **Tools to identify and analyze non-value added activities:**
  - The eight wastes.
  - Waste walks.
  - Waste recording forms & waste logs.
  - Opportunity process map.
  - Value matrix.
  - Value timeline.
  - VA/NVA metrics.

- Value Analysis

The Eight Wastes:

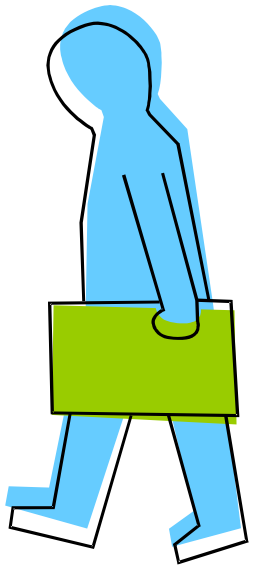
Transport
Inventory
Motion
Waiting
Overproducing
Over Processing
Defects
Skills

- Value Analysis

Waste Walks:

- Used to quickly identify waste within an area or in a process.
- Allows walkers to understanding how the process really works.
- Helps them quickly identify waste and identify continuous improvement opportunities.

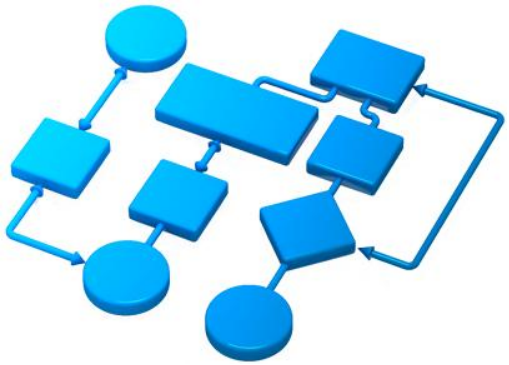
Observe the process with an eye towards waste



- Value Analysis

How to Conduct a Waste Walk:

- Clearly describe the objective of conducting the waste walk.
- Select the process or area and define the boundaries.
- Prepare an observation form to collect the desired information.
- Get permission from the process owner or supervisor to conduct the walks and talk to the people there.
- Walk the flow of the process and look for each of the eight types of waste.
- Collect data, observe actual practices, interview people and ask questions.
- Identify opportunities to eliminate waste.
- Prioritize improvement actions as appropriate.



- Value Analysis

Waste Recording Form:

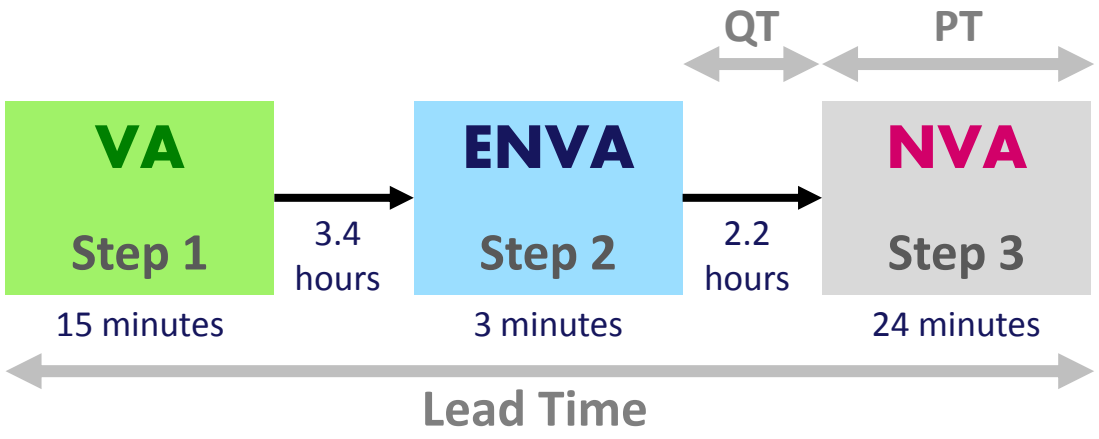
- Helps identify and record wasteful activities.
- It usually contains a place to classify the waste according to the eight wastes.
- It may also contain a place that encourages the team to propose priority areas for action.

Process	Waste Category	Description	Possible Cause	Proposed Action

- Value Analysis

Opportunity Process Map:

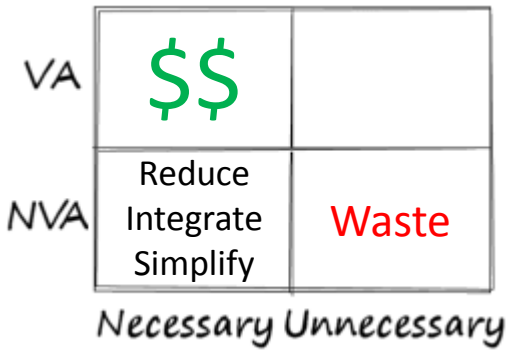
- Provides a visual picture of how the process works and where wasteful activities exist.
- A type of process map with additional information about whether activities are value added or non-value added.



- Value Analysis

Value Matrix:

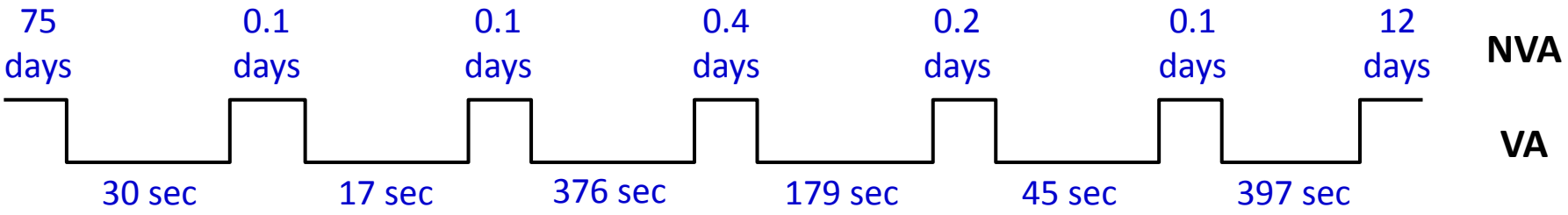
- Used to help make correct decisions about wasteful and non-value added activities.
- If the activity is unnecessary and adds no value to the product or service, then you need to eliminate it immediately.
- If the activity adds no value but is necessary for business operational reasons, then it can be reduced, integrated or simplified to optimize the process.



- Value Analysis

Value Timeline:

- Reflects the value added and the non-value added activities of the core process.
- Helps approximating VA and NVA percentages.
- Placed at the bottom the value stream map.



- Value Analysis

VA/NVA Metrics:

- Total Value Added Time.
- Value Stream Ratio (VA%) - The proportion of time spent in the process that a product or service is actually being worked on a way that is adding value.

$$\textbf{VS Ratio (\%)} = \frac{\text{Total Value Add Time}}{\text{Total Lead Time}}$$