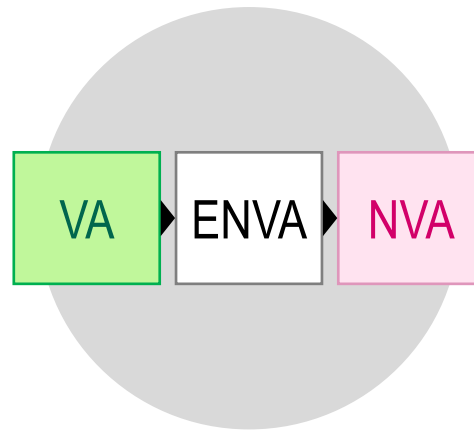


Continuous Improvement Toolkit

VALUE ANALYSIS

Lean Concept of Value



VALUE ANALYSIS

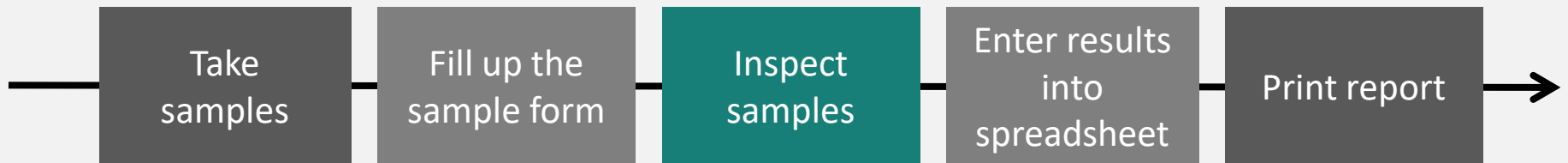
Oftentimes, we tend to create **additional steps** to a process in order to fix a problem or improve a situation.

Over time, these additional activities become an accepted part of the process although they do not add any value to the product or service.



VALUE ANALYSIS

To improve our processes, we need to identify these non-value-added activities, determine the problems they were made for, then find new ways to avoid those problems in the first place.



VALUE ANALYSIS

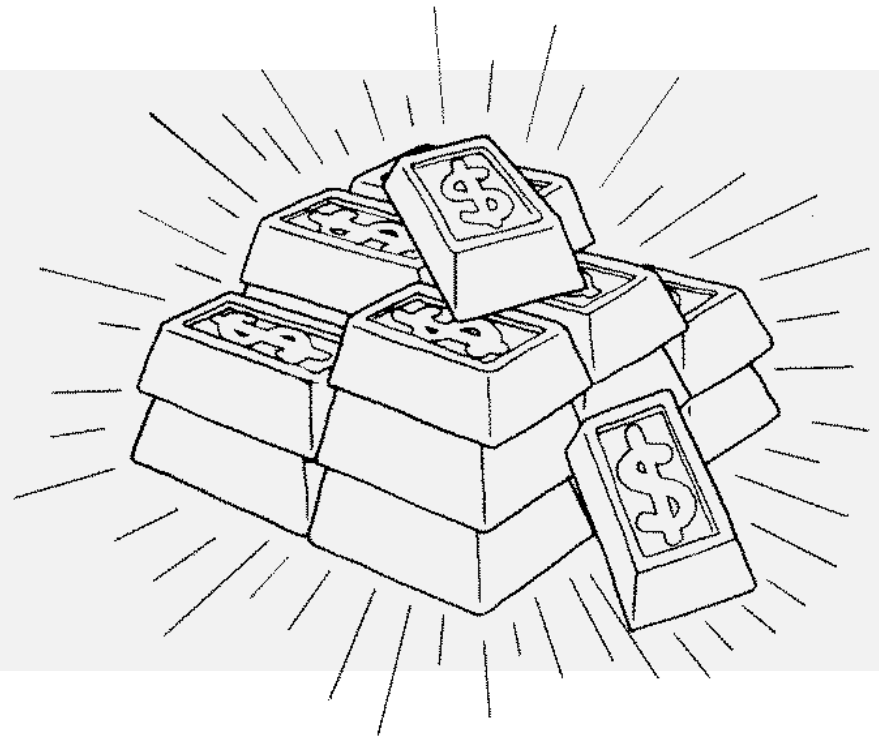
Problem solving and continuous improvement efforts should focus on those aspects of processes that are **wasteful** and add no value to the customer.



VALUE ANALYSIS

Value is one of the most important concepts within Lean thinking and one of the most valuable outcomes Lean provides.

It is simply how much your product or service **cost** from the perspective of your customers.



VALUE ANALYSIS

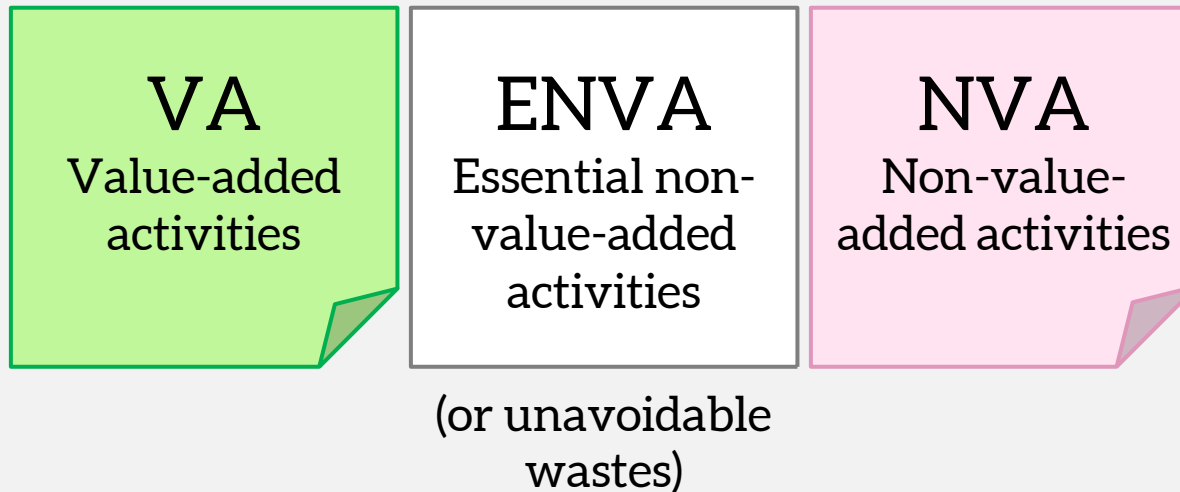
Value analysis focuses on what adds value to business processes as perceived by the customer.

Any activity that does not add value to the product or service should be feed into your future problem-solving efforts.



VALUE ANALYSIS

Each activity within a process can be classified into one of three categories . . .



VALUE ANALYSIS

Value-Added Activities – Refers to the activities that increase the worth of a product or services from the customer's perspective.

They are required even if the process seems to be going on perfectly well.

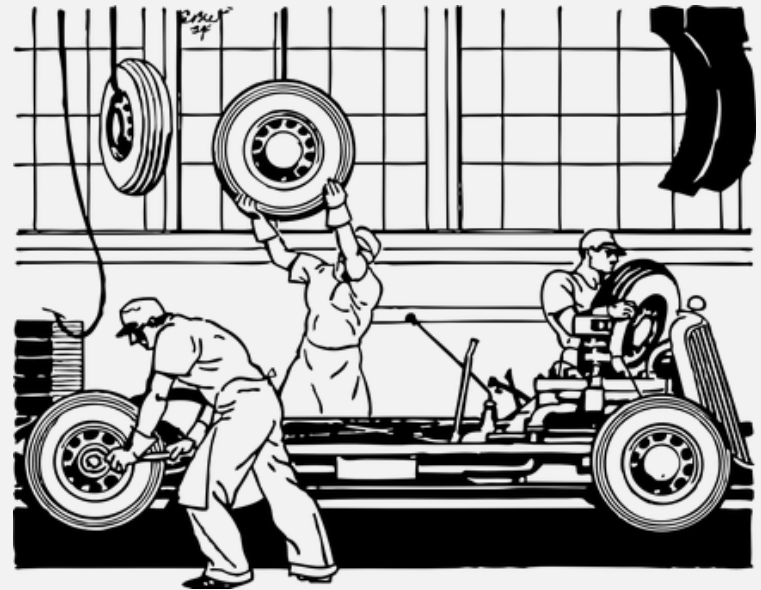


VALUE ANALYSIS

Value-Added Activities – Refers to the activities that increase the worth of a product or services from the customer's perspective.

Common examples include:

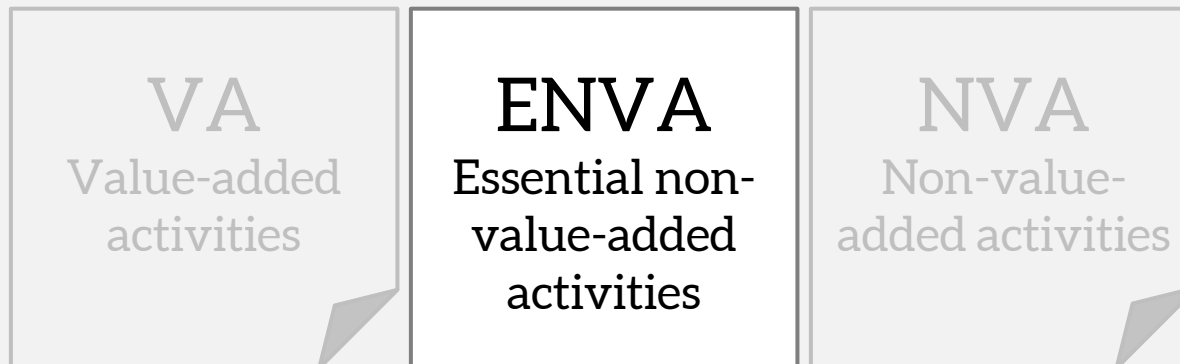
- ▶ Machining a part.
- ▶ Assembling a product.
- ▶ Serving a customer at a call center.
- ▶ Writing a proposal.



VALUE ANALYSIS

Essential Non-Value-Added Activities – Add no value to the product or service and the customer is not willing to pay for them.

They add cost to the product or service but are required to conduct the business.

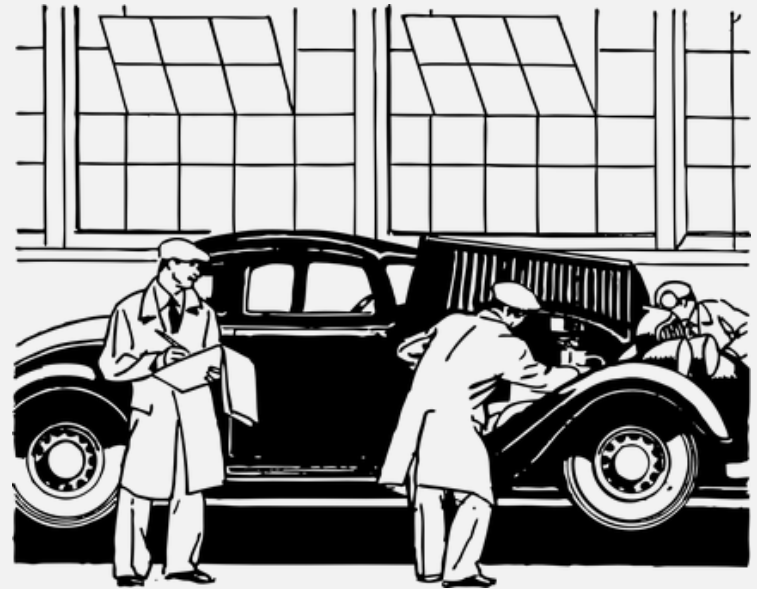


VALUE ANALYSIS

Essential Non-Value-Added Activities – Add no value to the product or service and the customer is not willing to pay for them.

Common examples include:

- ▶ Inspecting parts for quality defects.
- ▶ Preventive maintenance.
- ▶ Purchasing, accounting, HR, R&D and legal.



VALUE ANALYSIS

Essential Non-Value-Added Activities – Add no value to a product or service and the customer is not willing to pay for them.

Also referred to as:

- ▶ Necessary non-value-added activities (NNVA).
- ▶ Required non-value-added activities (RNVA).
- ▶ Business non-value-added activities (BNVA).
- ▶ Unavoidable waste.
- ▶ Pure waste.

ENVA
Essential non-
value-added
activities

VALUE ANALYSIS

Non-Value-Added Activities – Add no value to the product or service, not required for business operational reasons, and must be considered in future problem-solving efforts.

The non-value-added work that is not necessary for producing the product or service.



VALUE ANALYSIS

Non-Value-Added Activities – Add no value to the product or service, not required for business operational reasons, and must be considered in future problem-solving efforts.

Common examples include:

- ▶ Searching for a tool.
- ▶ Waiting for a delayed starts.
- ▶ Reworking an application.
- ▶ Sending missing information.



VALUE ANALYSIS



Value-added

- ▶ They contribute to the customer in a meaningful way.
- ▶ They physically changes the product or transfer the item more toward completion.
- ▶ They are done right the first time.

Essential non-value-added

- ▶ Required to conduct the business due to the current settings of the process, policy or technology.
- ▶ They have been added to the process to prevent defects and errors in order to sustain the business.

Non-value-added

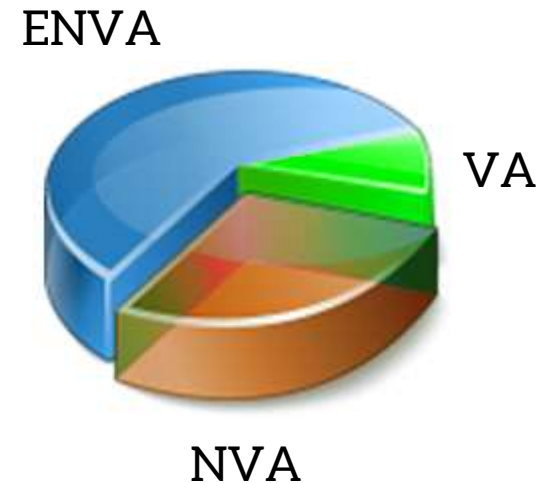
- ▶ Do not add value and not necessary to produce the output.
- ▶ Include the eight types of waste activities.
- ▶ Must be eliminated.

VALUE ANALYSIS

Research has shown that value-added activities in a typical process are less than **10 percent** of the total work performed.

This means that the work that the customer cares about is only 10%.

In fact, companies are spending more time and resources on areas that do not add value.



VALUE ANALYSIS

The first step when analyzing the value of any process is to determine who the **ultimate customer** is.

An ultimate customer is normally the **end user** of the product or service.



VALUE ANALYSIS

It is important that you clearly understand the **expectations** of your ultimate customers and know exactly what they are willing to pay for.

You need to actively listen to them and encourage them to send feedback on how well your product or service meets their needs for future process improvements.



VALUE ANALYSIS

For example, because patients are the ultimate customers in medical services, it is important to meet their expectations by providing them with personalized and comprehensive health care.

Occasionally . . .

- ▶ Patients wait too long to be diagnosed by their primary doctors.
- ▶ They sometimes move from one area to another to receive care.
- ▶ They are often asked to fill out multiple medical forms.



VALUE ANALYSIS

Traditional Versus Lean Approach

TRADITIONAL APPROACH

- ▶ Focuses on reducing the time to perform the process normally through capital investment.

LEAN APPROACH

- ▶ Focuses on eliminating the root causes of the 90 percent of the non-value-added activities, which is much cheaper and more effective.

VALUE ANALYSIS

The following are some of the concepts and tools that can be used to identify and analyze wasteful and non-value-added activities . . .

The eight wastes	Value matrix
Waste walk	Value analysis matrix
Waste recording form	Value stream timeline
Opportunity process map	VA/NVA metrics



VALUE ANALYSIS

The Eight Wastes

One of the core principles of Lean thinking.

Unnecessary transportation – The unnecessary movement of items or information from one place to another.



Unnecessary movement – Movement performed by people that is not required.



Waiting – Occurs any time a person or a product is waiting.



Excess of inventory – Having more materials or information than what is actually needed.



Over-production – Creating too much material or information.



Over-processing – Processing more than necessary to produce the desired output.



Defects, errors and mistakes – Causing the effort to be redone to correct the problem.



Unused Skills – Wasting human talent, creativity, enthusiasm.



VALUE ANALYSIS

Waste Walk

It is a **practical approach** that helps identifying value-added and non-value-added activities.

Waste walks are used to quickly identify waste and non-value-added activities within an area or in a process.

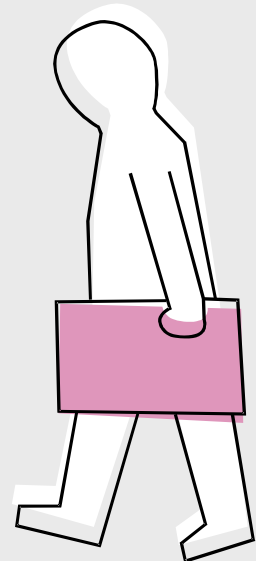


VALUE ANALYSIS

Waste Walk

It allows walkers to understanding how the process really works and helps them quickly identify continuous improvement opportunities.

It is highly encouraged to regularly walk the process to look for opportunities to reduce waste and make improvements.



VALUE ANALYSIS

Waste Recording Form

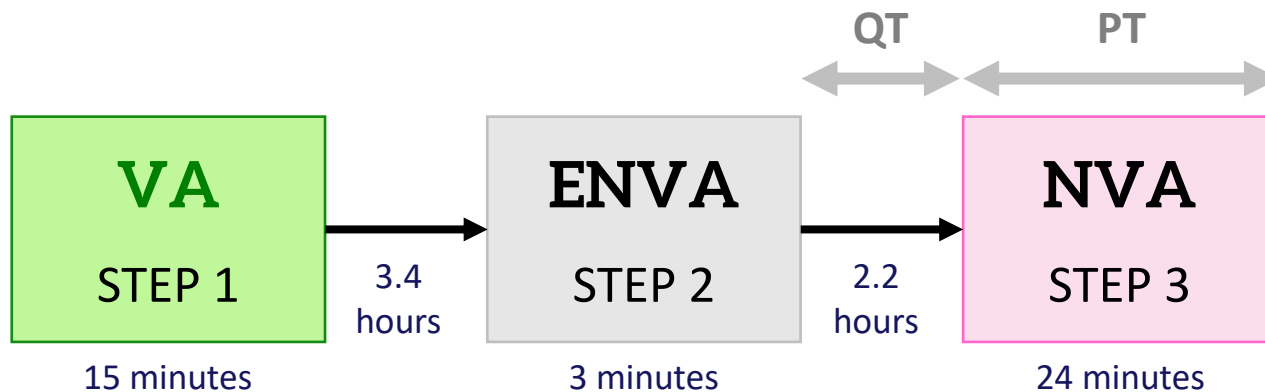
- ▶ Helps identifying and recording wasteful activities during waste walks.
- ▶ Usually contains a place to classify the waste according to the eight types of waste or any other waste classification.
- ▶ May also contain a place that encourages the team to propose priority areas for action.

Process step	Waste category	Description	Possible cause	Proposed action

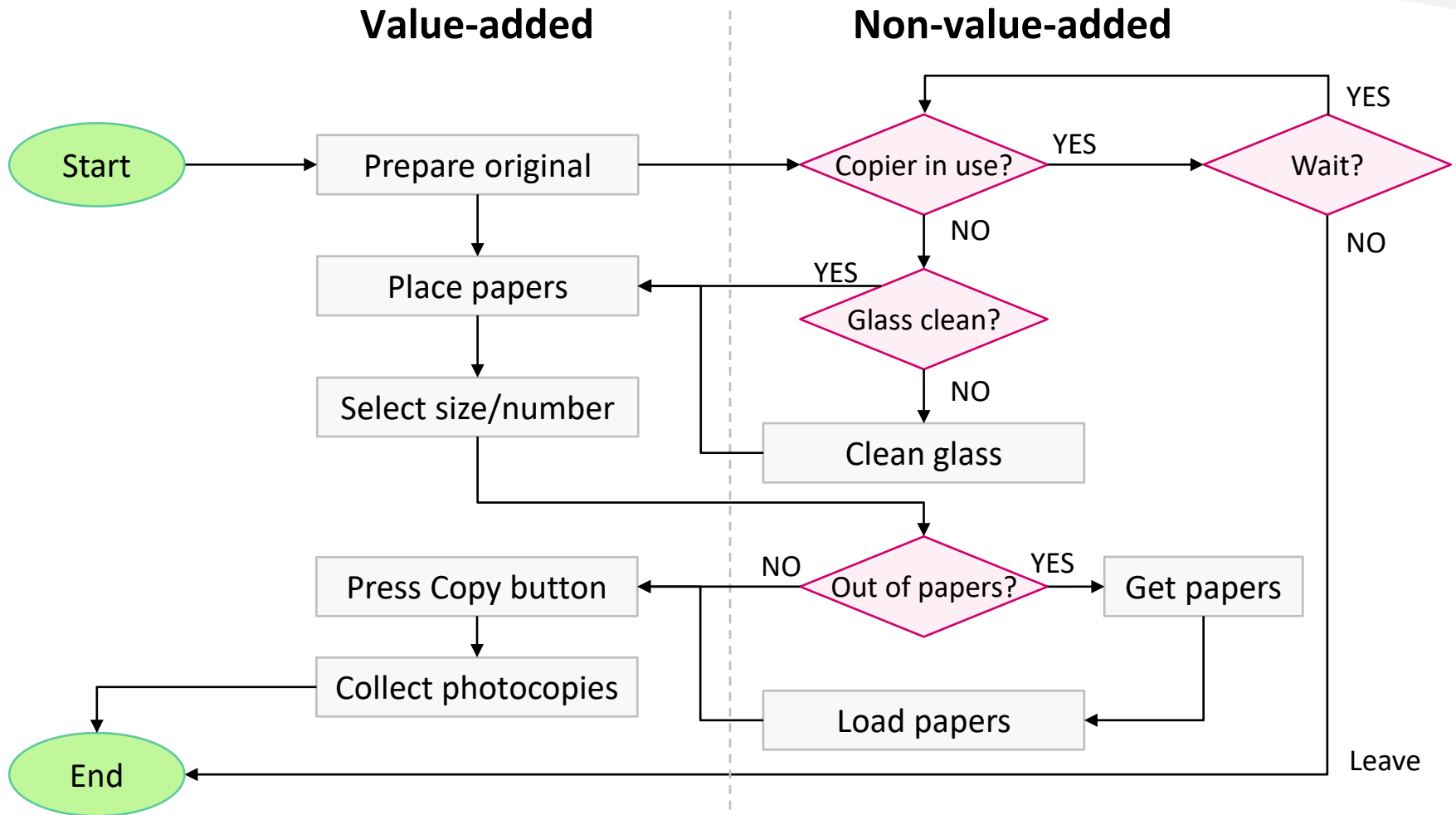
VALUE ANALYSIS

Opportunity Process Map

A type of process map that provides a visual picture of how the process works and whether activities are value-added or non-value-added.



VALUE ANALYSIS

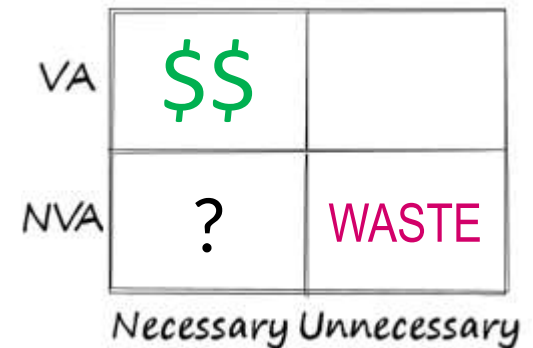


VALUE ANALYSIS

Value Matrix (Value Four-Quadrants Matrix)

Used to help making the correct decision about wasteful and non-value-added activities.

- ▶ If the activity is unnecessary and adds no value to the product or service, then it should be eliminated or reduced.
- ▶ If the activity adds no value but is necessary for business operational reasons, then it can be simplified or integrated wherever possible to optimize the process.



VALUE ANALYSIS

Value Analysis Matrix

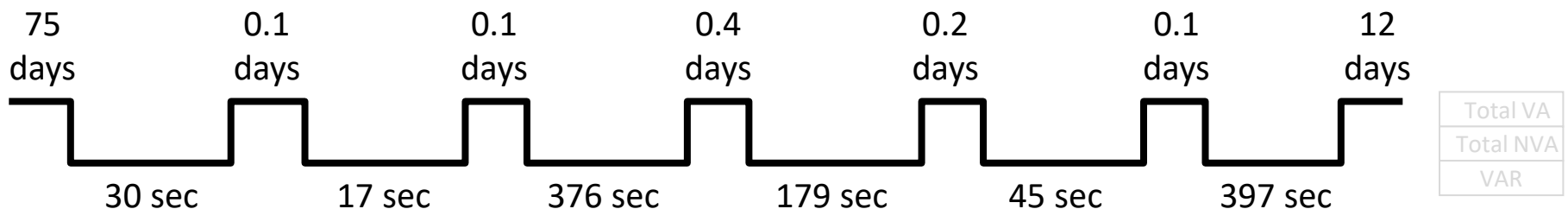
Clarifies the types of non-value-added activities present in the process.

Process step	1	2	3	4	5	6	7	8	9	10	Total	Total %
Time (hours)	12	10	1	10	20	6	10	1	10	20	100	100%
Value-added			X					X			2	2%
Preparation											0	0%
Fixing errors									X		10	10%
Inspection						X					6	6%
Waiting	X				X					X	52	52%
Transportation		X		X			X				30	30%
Total											100	100%

VALUE ANALYSIS

Value Stream Timeline

- ▶ Reflects the value-added and the non-value-added activities of the core process.
- ▶ Often found at the bottom of value stream maps.
- ▶ Helps finding out the VA and NVA percentages.



VALUE ANALYSIS

VA/NVA Metrics

- ▶ Many companies are using various metrics in order to measure the performance of their end-to-end process.
- ▶ One of the most common metrics is the Value-Added Ratio (Value Stream Ratio), which is the proportion of time spent in a process in a way that is adding value.

$$\text{VAR} = \frac{\text{Total Value-Added Time}}{\text{Total Lead Time}}$$

VALUE ANALYSIS

Further Information – Rework

- ▶ Painting for example is usually a value-added activity.
- ▶ However, repainting as a result of using the wrong paint is a non-value-added activity as it is considered a **rework**.
- ▶ Customers are not willing to pay for the mistakes of their suppliers.



VALUE ANALYSIS

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