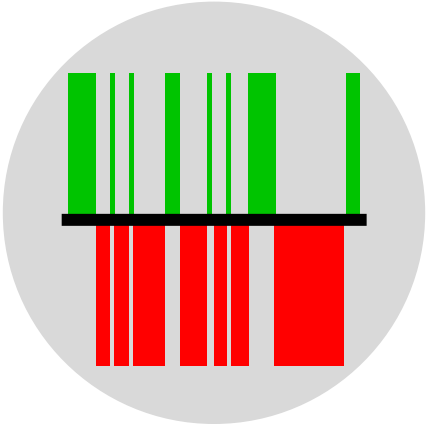
Continuous Improvement Toolkit

TIME VALUE MAP



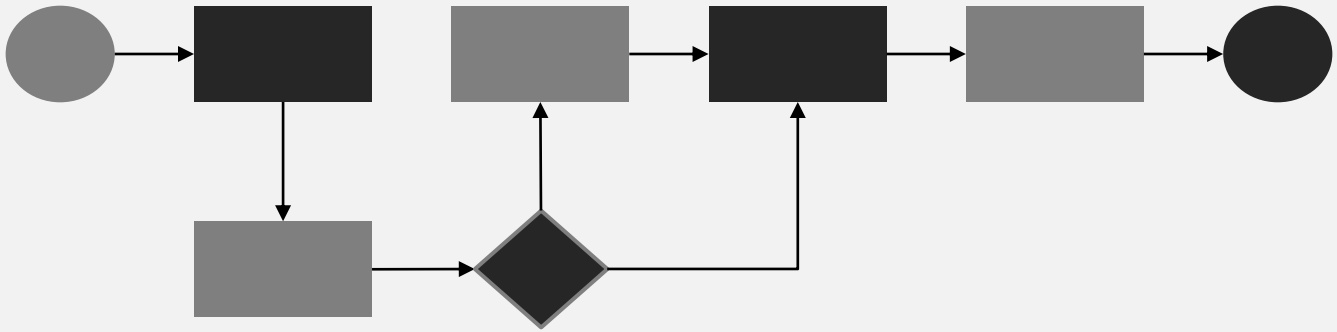
TIME VALUE MAP

A graphical representation of the value-added and non-value-added **time** in a process.

It demonstrates the **proportion of time** that is spent on a given process.

TIME VALUE MAP

Used to **monitor** how a specific process operates and how much time is wasted in the process starting from the beginning of the process until product or service delivery.



TIME VALUE MAP

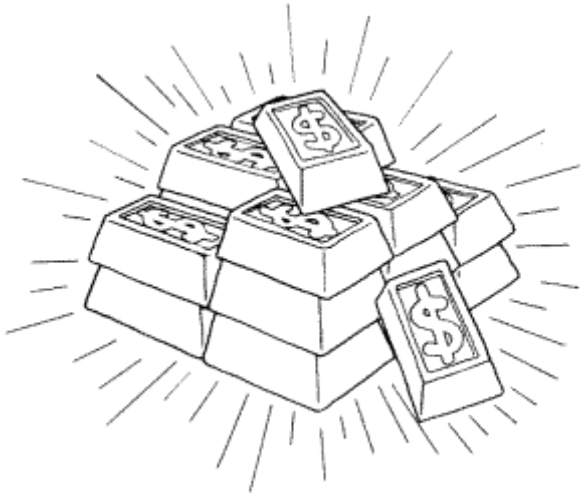
The **ultimate goal** is to eliminate or reduce waste, or any activity in the process that does not add value.

It allows the identification of waste **related to time**, especially waiting and unnecessary delays.

TIME VALUE MAP

The analysis focuses on what **adds value** to a business process as perceived by the customer.

The aim is to make the process more efficient while maximizing the value delivered to the customer.



TIME VALUE MAP

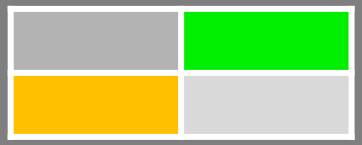
One of the many **Lean tools** that will help to identify and analyze waste and non-value-added activities.

Waste walks

Waste logs

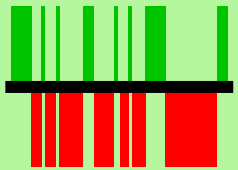
Opportunity process maps

Value matrices



VA/NVA metrics

Time value maps



TIME VALUE MAP

Constructed using the **process and queue times**.

Value Stream Timeline

Such information can be obtained from the timeline of the value stream map or after conducting a process chart exercise

TIME VALUE MAP

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

Value-added activities

Essential non-value-added activities

Non-value-added activities

TIME VALUE MAP

Value-Added Activities

Increase the worth of a product or services from the customer's perspective.

Examples – Machining a part and serving a customer

TIME VALUE MAP

Essential Non-Value-Added Activities

Add no value and the customer is not willing to pay for them, however, they are necessary for the business due to the current process settings.

Examples – Purchasing materials and inspecting parts

TIME VALUE MAP

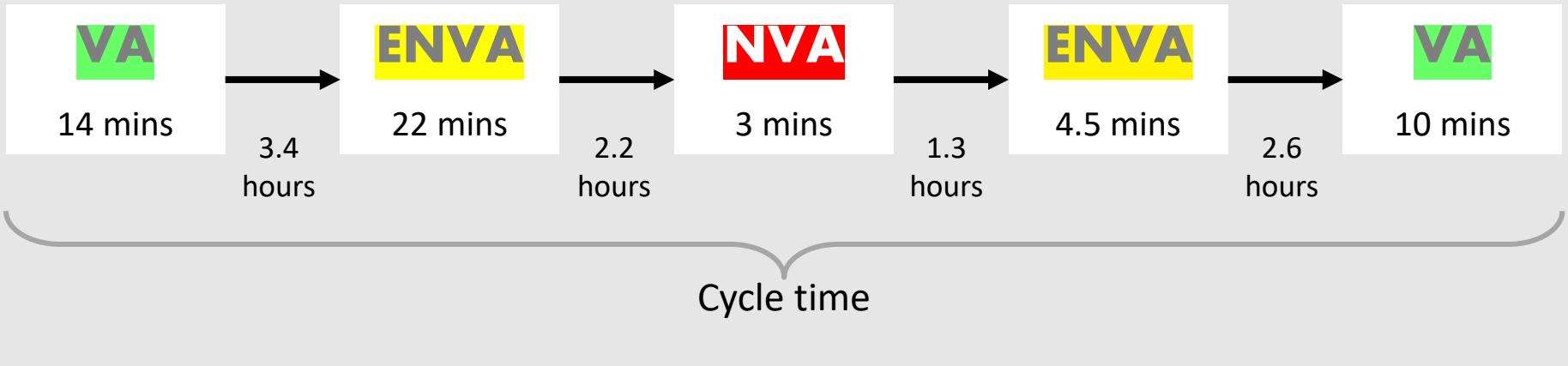
Non-Value-Added Activities

Add no value to the product or service, and not required for business operational reasons. They must be eliminated immediately.

Examples – Searching for a tool and reworking an application

TIME VALUE MAP

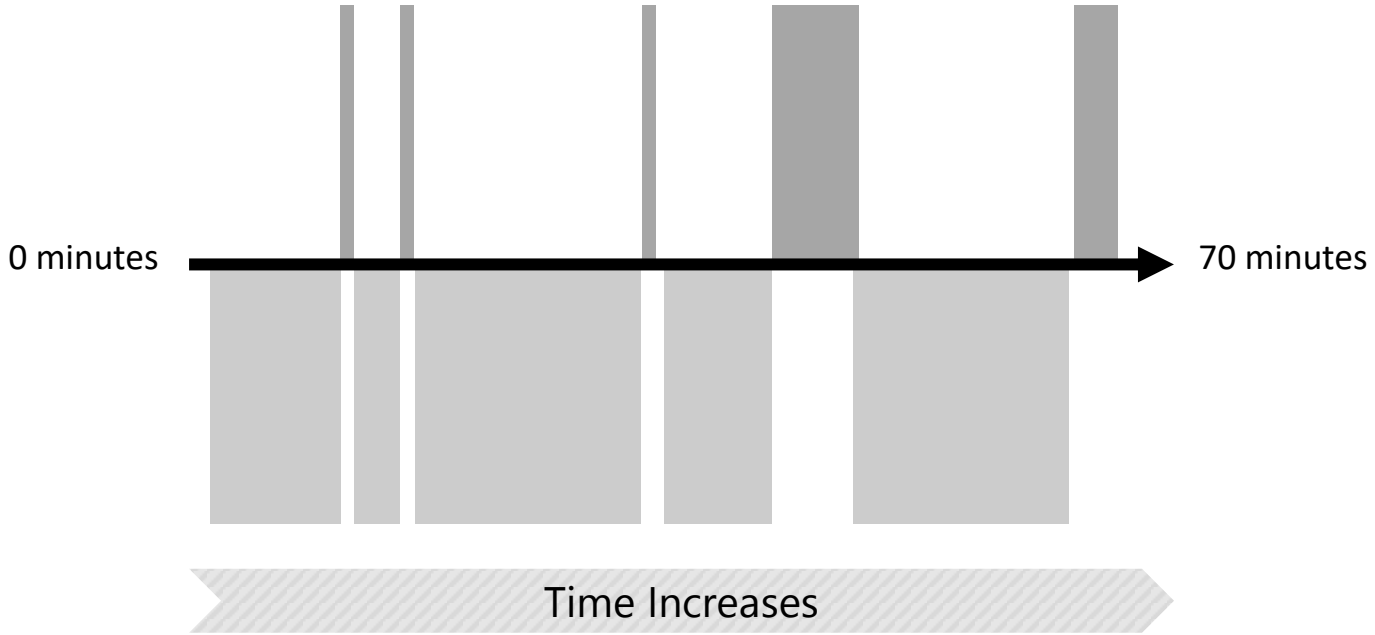
You need to examine **how long** it takes to complete each activity within a process.



This involves recording the processing (or touch) time as well as the queue (or waiting) time, idle time, inspection time, etc.

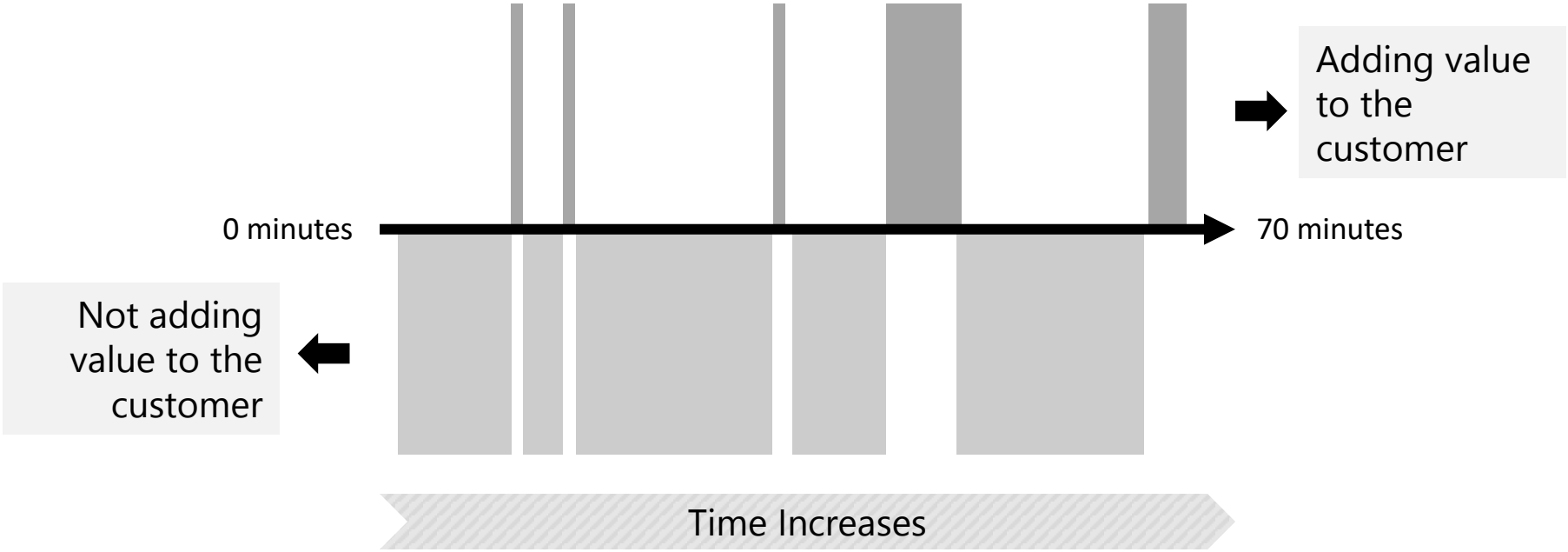
TIME VALUE MAP

All activities are plotted as bars proportional to their time values along a horizontal timeline.



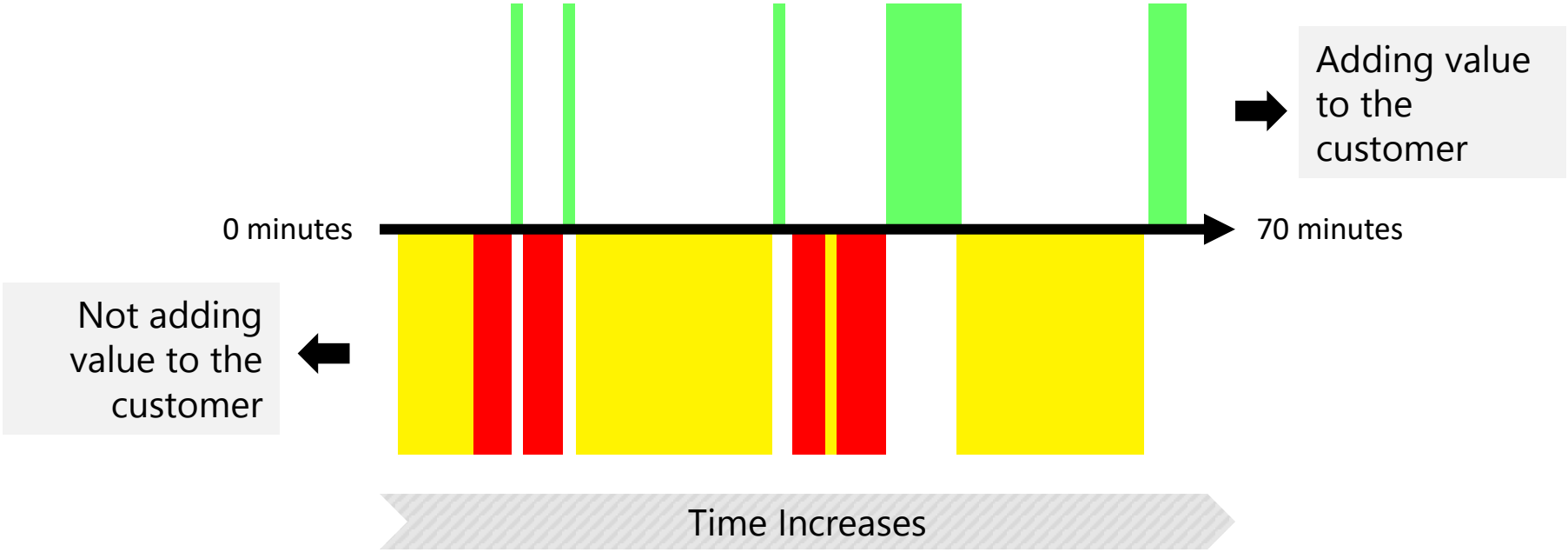
TIME VALUE MAP

Activities that add value to the customer are plotted **above** the timeline whereas activities that do not add value to the customer are plotted **below** the timeline.



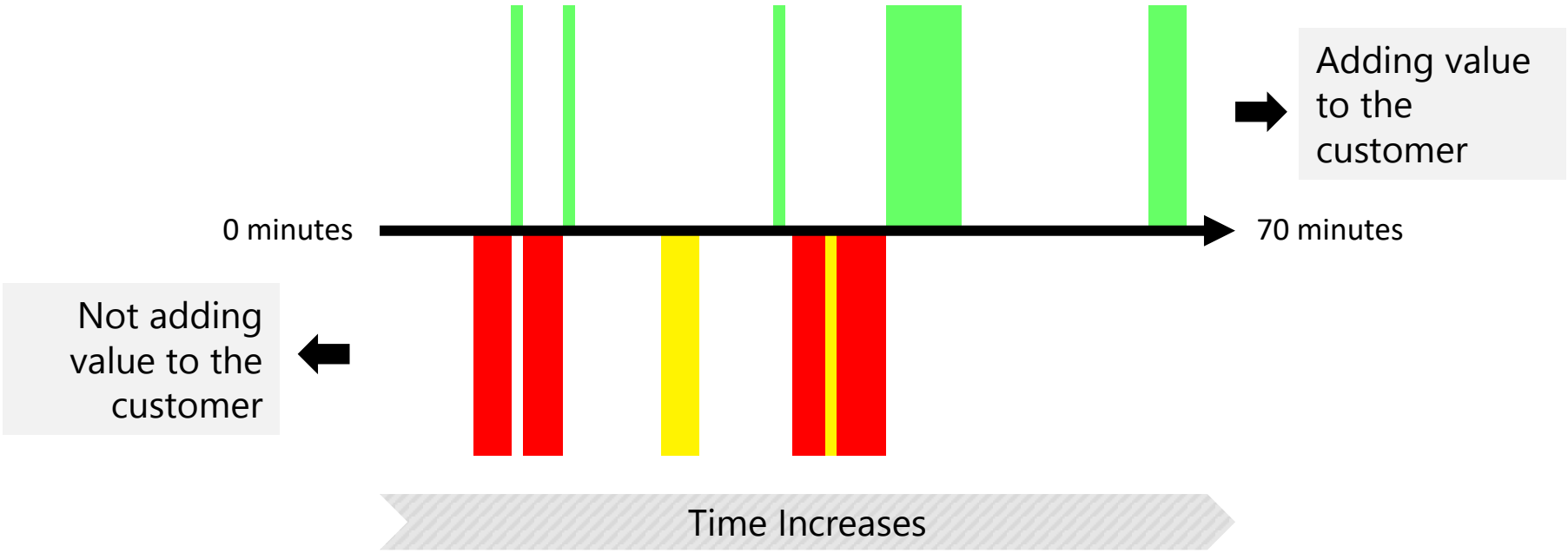
TIME VALUE MAP

You may use the **traffic light colors** to convey the map more clearly.



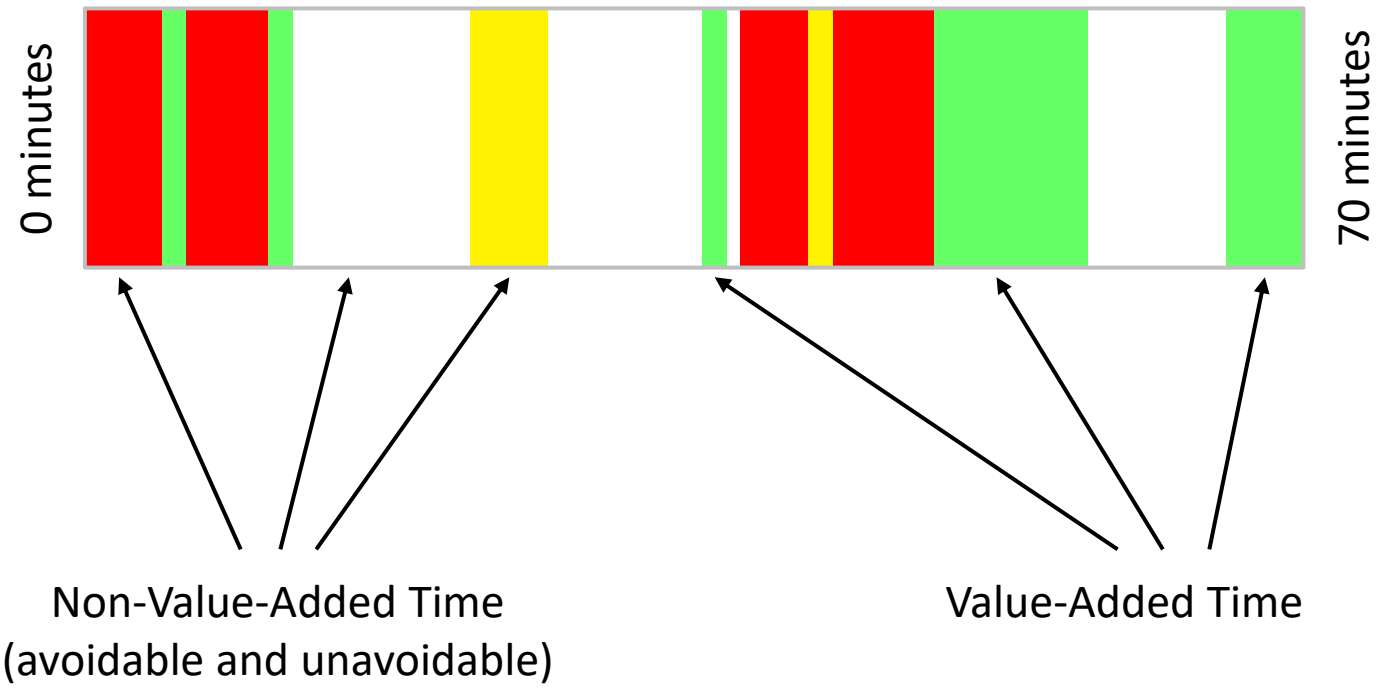
TIME VALUE MAP

Delays, waiting and idle time could be represented as **blank spaces** or gaps between the bars.



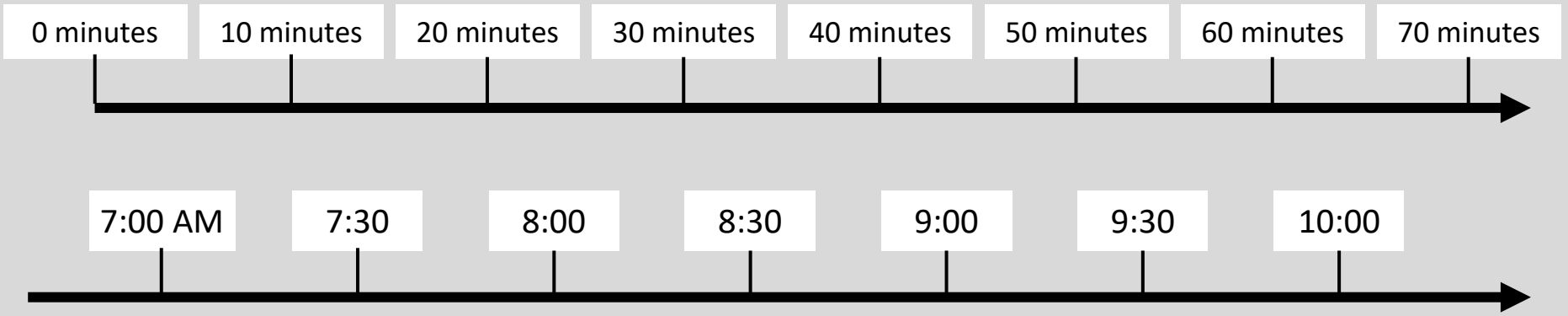
TIME VALUE MAP

Can be represented in this format where all bars are parallel to each other.



TIME VALUE MAP

The **scale** of the timeline can either be intervals of the cycle time (in seconds, minutes, hours, etc.) or the actual time of a day.



TIME VALUE MAP

How to Create a Time Value Map

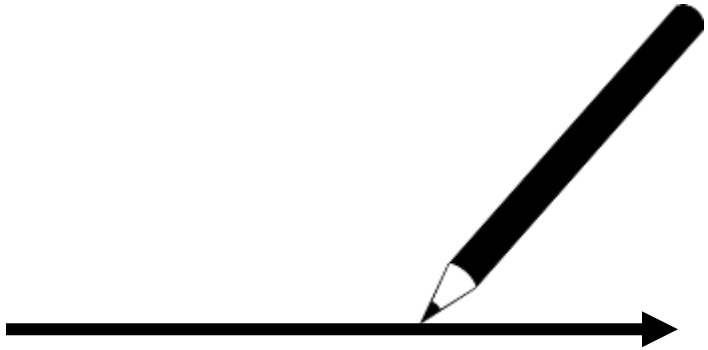
Make sure everyone is **clear** on what process to analyze

TIME VALUE MAP

How to Create a Time Value Map

Draw the **process timeline** at the center of a whiteboard or flipchart (could be a horizontal or vertical line)

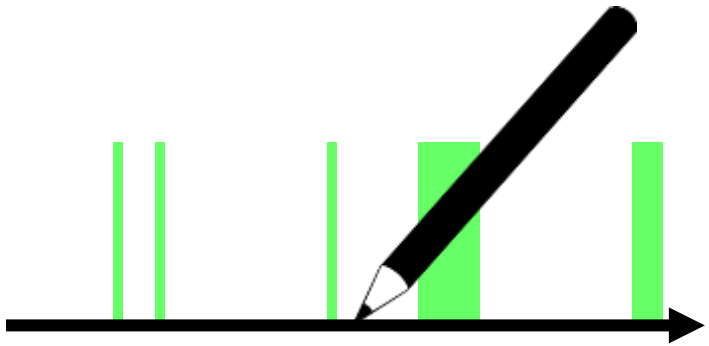
Specify the start and end times, total cycle time, cycle time intervals, and the queue times between activities



TIME VALUE MAP

How to Create a Time Value Map

Draw bars to represent the **value-added activities** time above the timeline

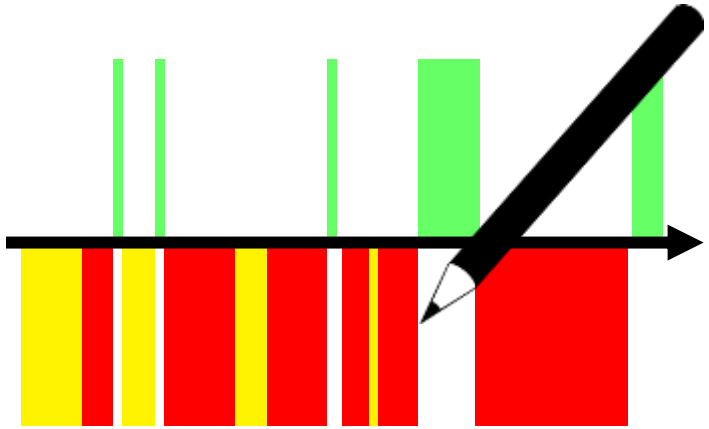


TIME VALUE MAP

How to Create a Time Value Map

Draw bars to represent the **non-value-added activities** time below the timeline

Place queue times between activities in the order that they occur

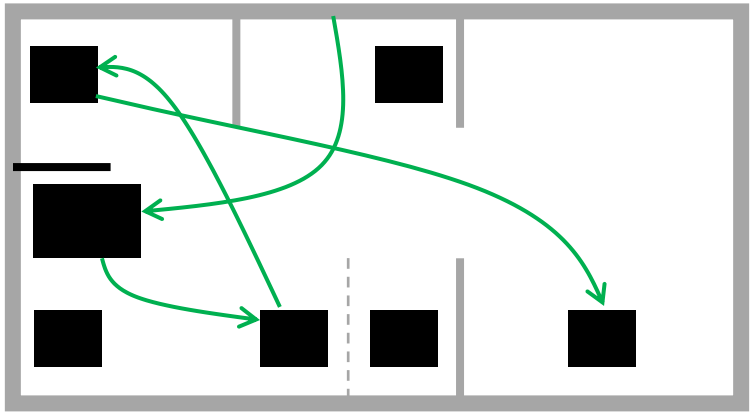


TIME VALUE MAP

How to Create a Time Value Map

Implement **projects** and **systems** to eliminate or reduce the non-value-added activities and decrease the overall waiting time

Value stream maps and spaghetti diagrams are good starting points



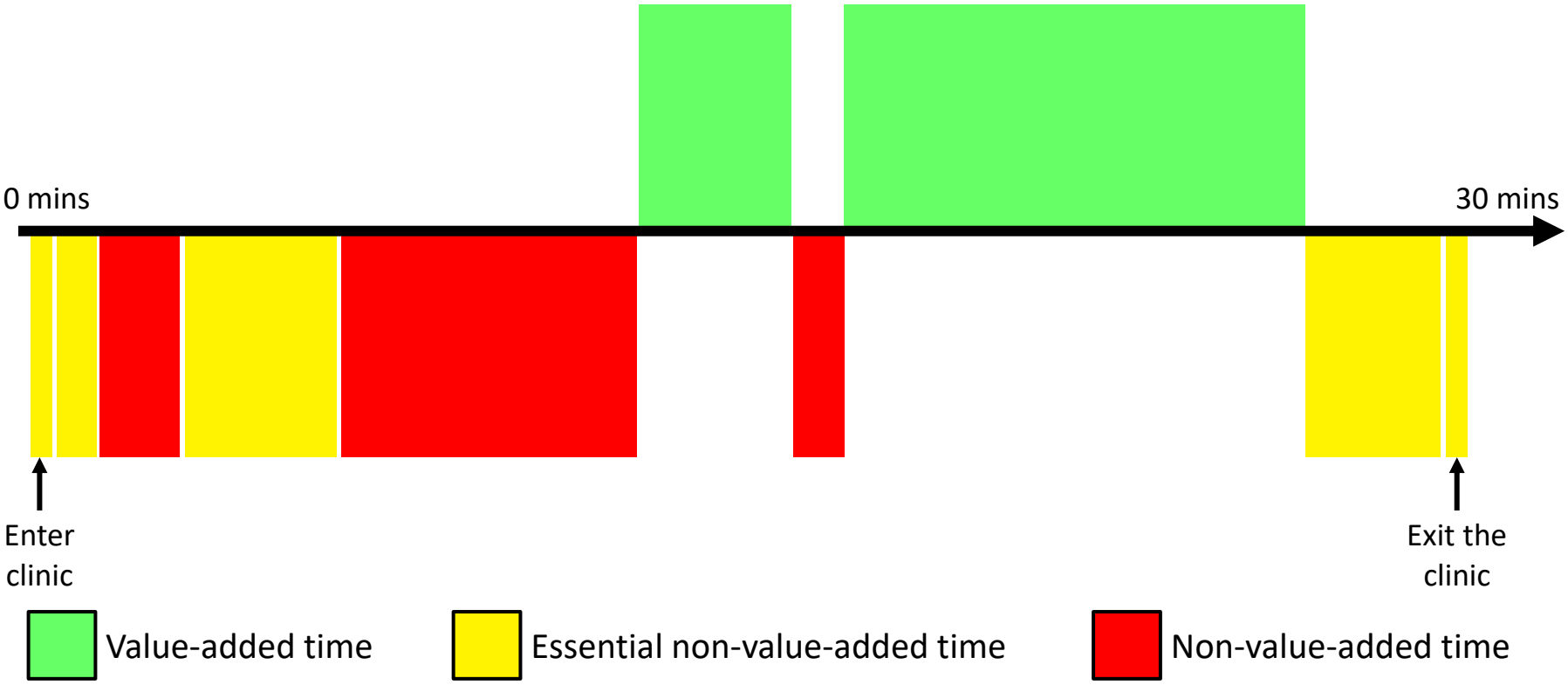
TIME VALUE MAP

Example – Patients Flow in a Clinic

Step #	Time IN MINS	VA/NVA						Process description
1	0.5	ENVA		X				Enter clinic & approach patient window
2	1.0	ENVA	X					Inform reception of arrival
3	1.5	NVA				X		Wait for the patient file to be loaded
4	3.0	ENVA	X					Register patient into the system
5	6.0	NVA				X		Wait in the waiting room
6	3.0	VA			X			Measure and record patient vitals
7	1.0	NVA				X		Wait in the doctor's office
8	9.0	VA			X			Get examined by the doctor
9	2.5	ENVA	X					Book for the next visit
10	0.5	ENVA		X				Exit the clinic

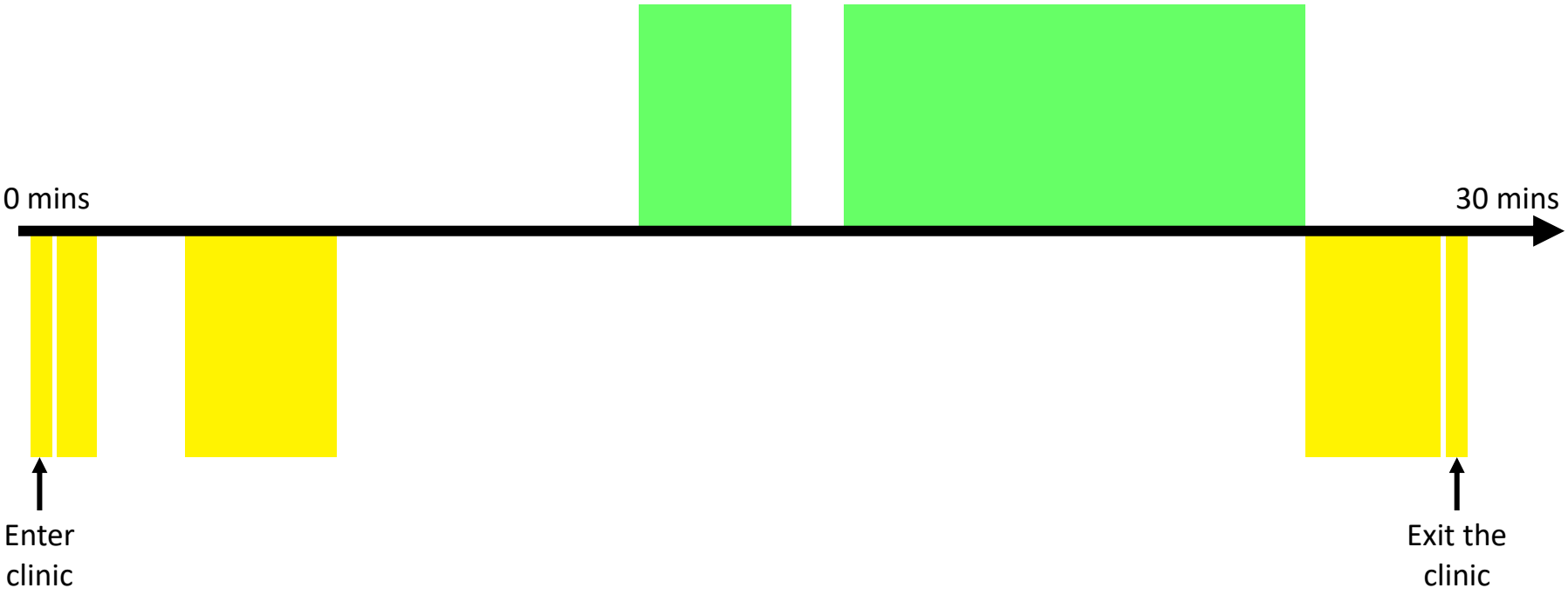
TIME VALUE MAP

Example – Patients Flow in a Clinic



TIME VALUE MAP

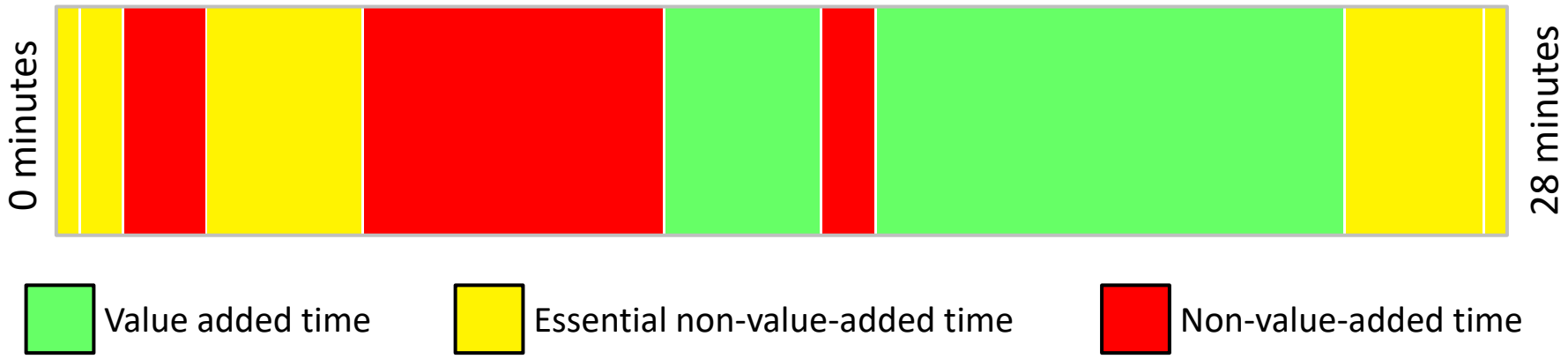
Example – Patients Flow in a Clinic



Waiting is represented as a blank space

TIME VALUE MAP

Example – Patients Flow in a Clinic



Another format where all bars are parallel

TIME VALUE MAP

Further Information

- You can **calculate** the total value-added time, total non-value-added time, and value stream ratio.
- **Value Stream Ratio** (or Process Cycle Efficiency) is a Lean metric that measures the proportion of value-added time spent in a process

$$\text{Value Stream Ratio (\%)} = \frac{\text{Total Value Add Time}}{\text{Total Time}}$$

TIME VALUE MAP

Made with ❤ by

CITOOLKIT

The Continuous Improvement Toolkit

www.citoolkit.com