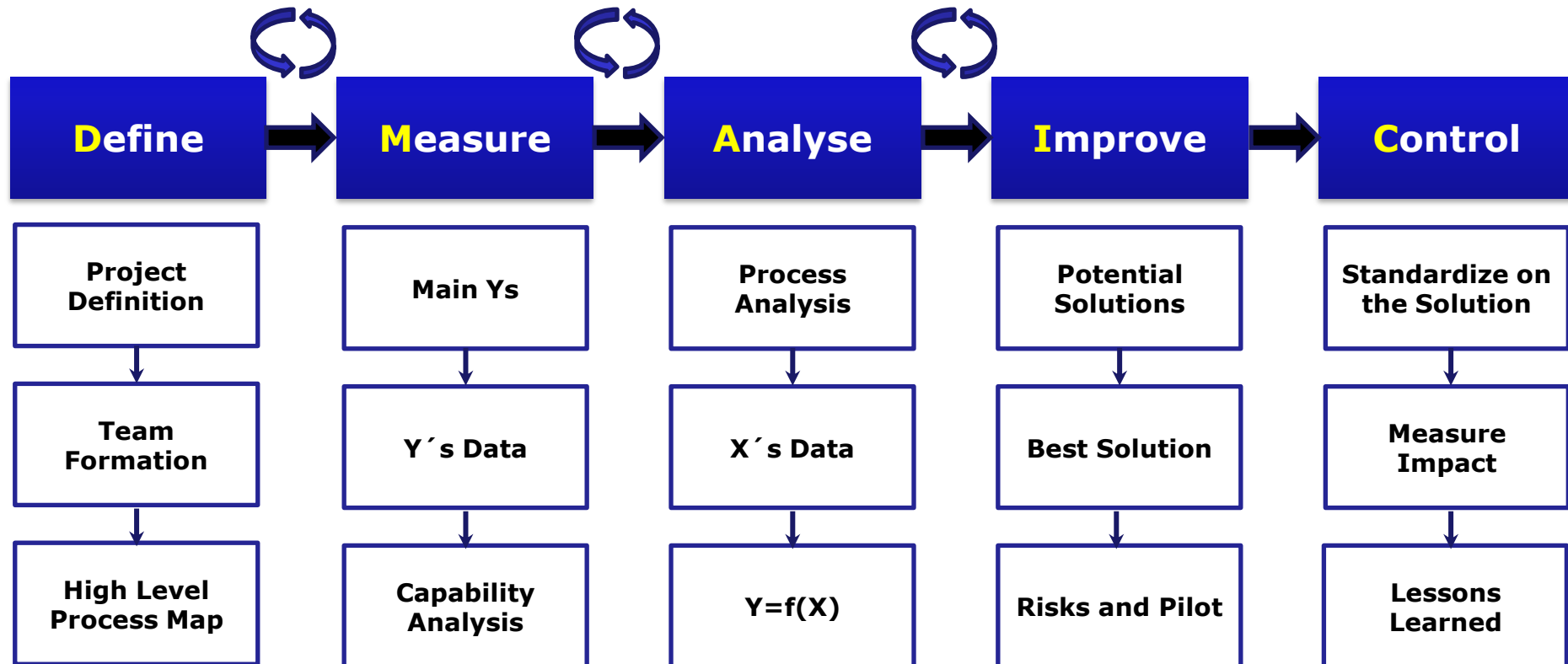


DMAIC- DEFINE

Project definition / Team formation / High level process map

Green Belts´ s Training | May 2021

Roadmap Six Sigma – DMAIC for improving products and processes



DEFINE



**Project
Definition**

Team Formation

**High Level
Process Map**

Try to respond at this phase:

What is wrong and what do you want to achieve?

How is the problem related to the customer?

What are the boundaries of the project?

Where, when and how will the project be developed?

Who can help?

Does the project have a chance of being successful?

Six Sigma projects start with **problems**, not solutions!

Define: Main Deliverables

DMAIC Project Summary

Project title: **xxxxxxx**

Champion: **xxxxxxx**

Team (with leader): **xxxxxxx**

Start of the project: **xxxxxxx**

Estimated end of project: **xxxxxxx**

Historical context: **xxxxxxx**

Stakeholders: **xxxxxxx**

Problem statement: **xxxxxxx**

Main client: **xxxxxxx**

Voice of the client: **xxxxxxx**

Objective: **xxxxxxx**

Quality costs: **xxxxxxx**

Constraints: **xxxxxxx**

Keywords: **xxxxxxx**

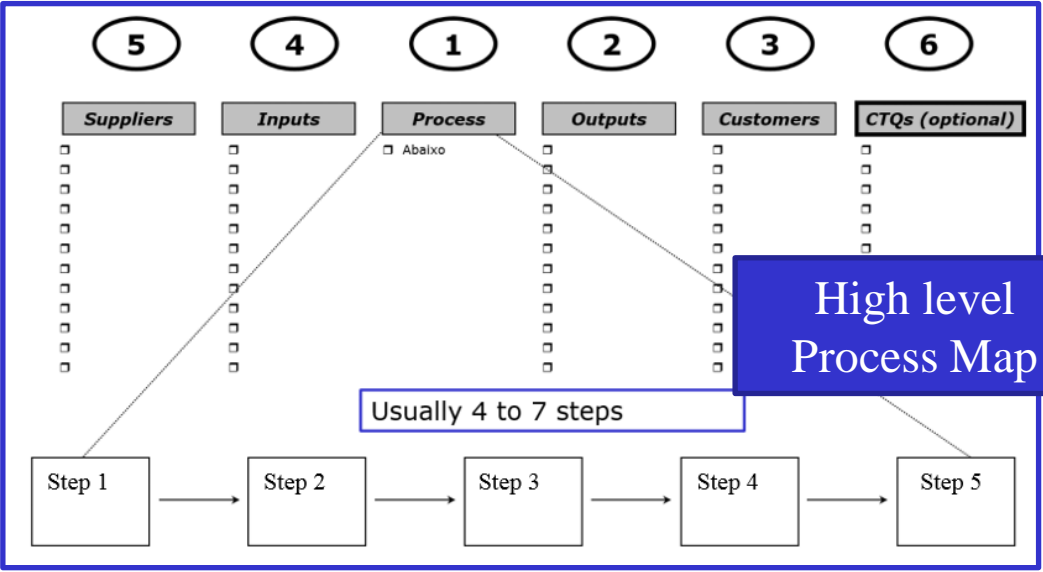
Additional considerations: **xxxxxxx**

Project Definition

Stakeholder	Role	Define	Measure	Analyse	Improve	Control
XXXX	Champion	A	A	A	A	A
XXXX	Leader	M	M	M	M	M
XXXX	Specialist	R	R	R		
XXXX	Trainer			R		
XXXX	Manager	I	I	I		

A Approver, sponsor or business leader whose approval is required
R Resource, an expert whose skills are needed for a given period of time
M Member, full-time team members
I Interested Party, someone you need to ensure is informed of the status of the project

Team Formation



The company's Project Charter is usually a **template (ppt file)**

Consider in a DMAIC project

Avoid problems with known root cause;

See if the problem can be measured;

Avoid very large problems;

Try to see why the project is worth it;

See if the project should be done now;

See how the project is viewed by the company;

Good Six Sigma projects should reduce costs.

Project definition



In this phase the objective is to have the **Project Charter** approved

Project Title

The best way to come up with titles is to ask yourself, "What would I type into **Google** to find this project?"

The title should be clear and unambiguous (do not make it "cute").

A good title should paint a **quick picture** for the reader of the key idea(s) of your project.

The words you use in your title should clearly reflect the focus of your proposal. The **most important words should come first**, then the less important words.

Try to remove words from your title that really are not necessary for understanding.

Try and use only a **single sentence** for your title. If the sentence is getting too long try removing some words. When all else fails try using a two part title with the parts separated by a colon (use only as a last resort!). Do not attempt to use the title as an abstract of your entire proposal.

Champions are fundamental in Project Selection

Champions must be integrated into the business, select projects accurately, adjust the speed of the deployment as necessary, and take responsibility for implementation.

Unless metrics are placed on all responsibilities of a Champion, the organization is placing the deployment at risk.

Champions must be proficient in four other areas:

Business and operations interface

Project selection

Pace mediation

Results implementation

Six Sigma Background for Champions:

1. Read the Book: Six Sigma Demystified (4 initial chapters)
2. Take the Quiz
3. Project selection
4. Project Definition

Who is the project
Champion?

Project time estimate

The amount of uncertainty in the estimates decreases as planning is complete and you execute more of the project plan. The estimates at initiation may be plus or minus 50% but by the time the project is half-complete, the ranges of the estimates might be plus or minus 5%.

Some approach for time estimate:

Analogous Estimating:

It is based on information from prior projects that are similar to the current project. You make adjustments up or down for the relative difficulty of the current project.

Parametric Estimating

You use published data about how much work, duration and cost particular tasks take.

Bottom-Up Estimating

You meet with the people who will be doing the work and develop estimates based on their judgment.

Try to use a **Gantt chart!**

Historical context / Case / Business case

Writing the business case helps you describe or characterize the issues and estimate the potential value of improvement projects. At this stage, you aren't looking to define the project but rather to **identify the value**. Describe why the project is important now!

A general business case:

As a company, our (*insert specific type of*) performance for the (*name specific area*) area isn't meeting (*define goal, target, or other measure*). Overall, this is causing (*name type of*) problems that are costing us as much as \$ (*list specific amount*) per (*insert time frame*).

A business case example

As a company, our final process yield performance for the paint and polish area isn't meeting the targeted 97 percent yield. Overall, this is causing floor space, shipment, and resource problems that are costing us as much as \$900,000 per year.

Who

When

What

&

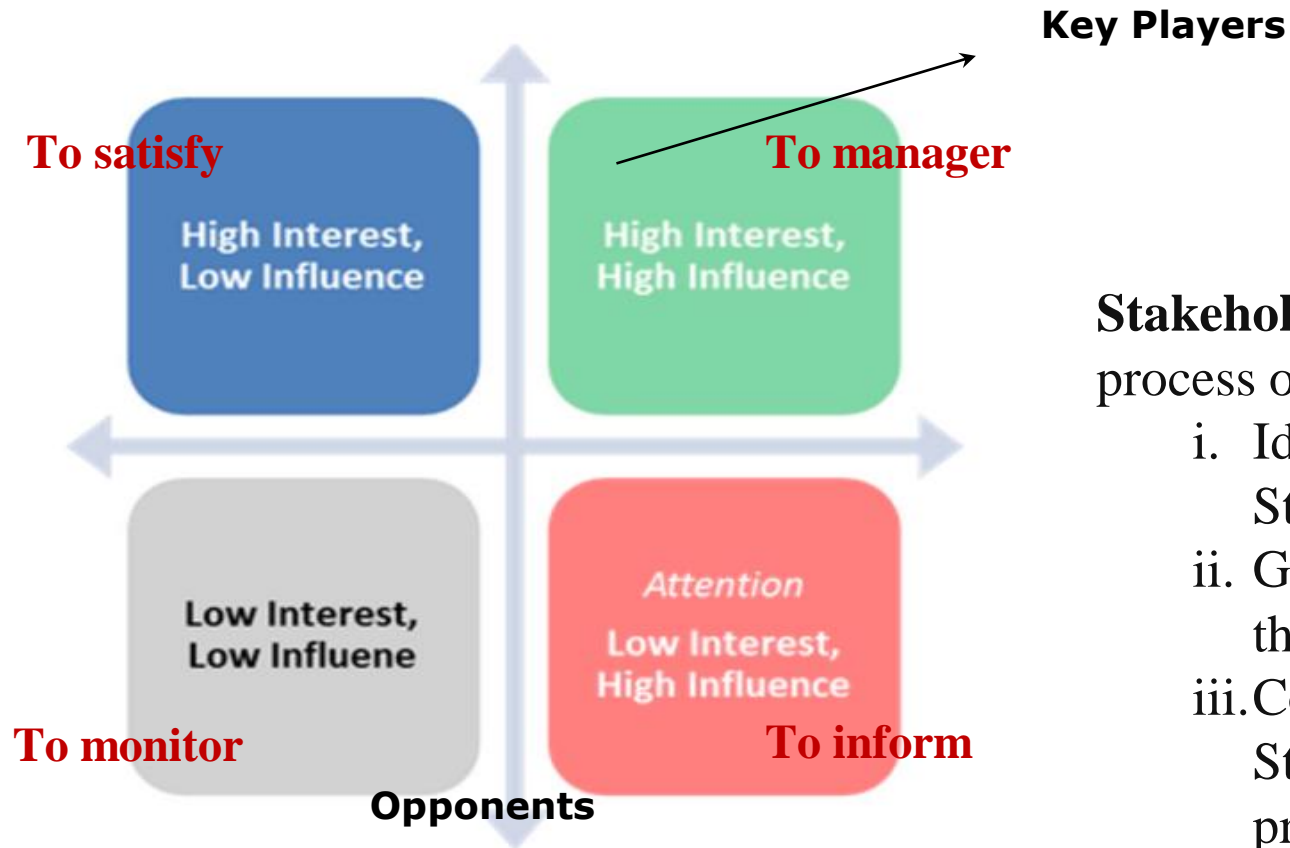
Why

Where

How

Stakeholders

Stakeholder(s) is a member or a team, who influences (or) is influenced by the outcome of the project. The member can be a part of the organization or can be an outside member.



Stakeholder Management is the process of:

- i. Identifying the relevant Stakeholders
- ii. Getting their buy-in for the project & changes
- iii. Communicating the Stakeholders on the progress

Problem Statement

"A well-defined problem is half the solution."

Two elements to fit into a good Problem Statement are:

- **Vision** (which would ideally be if the problem did not exist)
- **Statement** of the problem (some sentences describing the problem specifically)

An **example** of Problem Statement for a company that produces software:

- We want all our software delivered to the client without problems and do not have to adapt.
- Today we have many flaws in the release of software that result in many adaptations. Whenever a failure occurs, resources will have to be allocated in correcting failures and many actions need to be taken. Deadlines and receipts are forfeited and there may be penalties. There is also a damage done to the reputation of the company.

Customers

Of course, companies have to make sure its **distributors, buyers, contractors, sales team,** and employees are all happy, **but they are not the reason the company exists.**

When deciding who is the customer, the focus should always be on **the people using the product.** They are the ones for whom value is being created and the reason why the market and the product exists.



Voice of the Client (VOC)

VoC
VoC 1
VoC 2
VoC 3
...
VoC i

Some VoC techniques:

- Customer Interviews
- Online Customer Surveys
- Live Chat
- Social Media
- Recorded Call Data
- Online Customer Reviews
- In-Person Surveys
- Net Promoter Score
- Focus Groups
- Emails
- Dedicated Feedback Form

VOCs are linguistic expressions of the customers (qualitative)

Voice of the customer (VoC) is a term used in business and Information Technology to describe the in-depth process of capturing customer's expectations, preferences and aversions.

VoC is the actual customer descriptions in words for the functions and features customers desire for goods and services.

Objective Statement

The Objective of a Six Sigma project can be a specific statement about a certain **metric**. Try to establish a target.

At **GE**, for example, the following Objectives are used as a reference:

- If a process is operating at a **3 Sigma or lower level**, the reduction of PPM (or DPMO) should be **divided by 10**.
 - Ex.: from 10000ppm to 1000ppm.
- If a process is operating at a **3 Sigma or higher level**, the PPM (or DPMO) reduction should be **divided by 2**.
 - Ex.: from 1000ppm to 500ppm.

Costs of Quality

(COPQ – Costs of Poor Quality)

A good Six Sigma project reduces costs

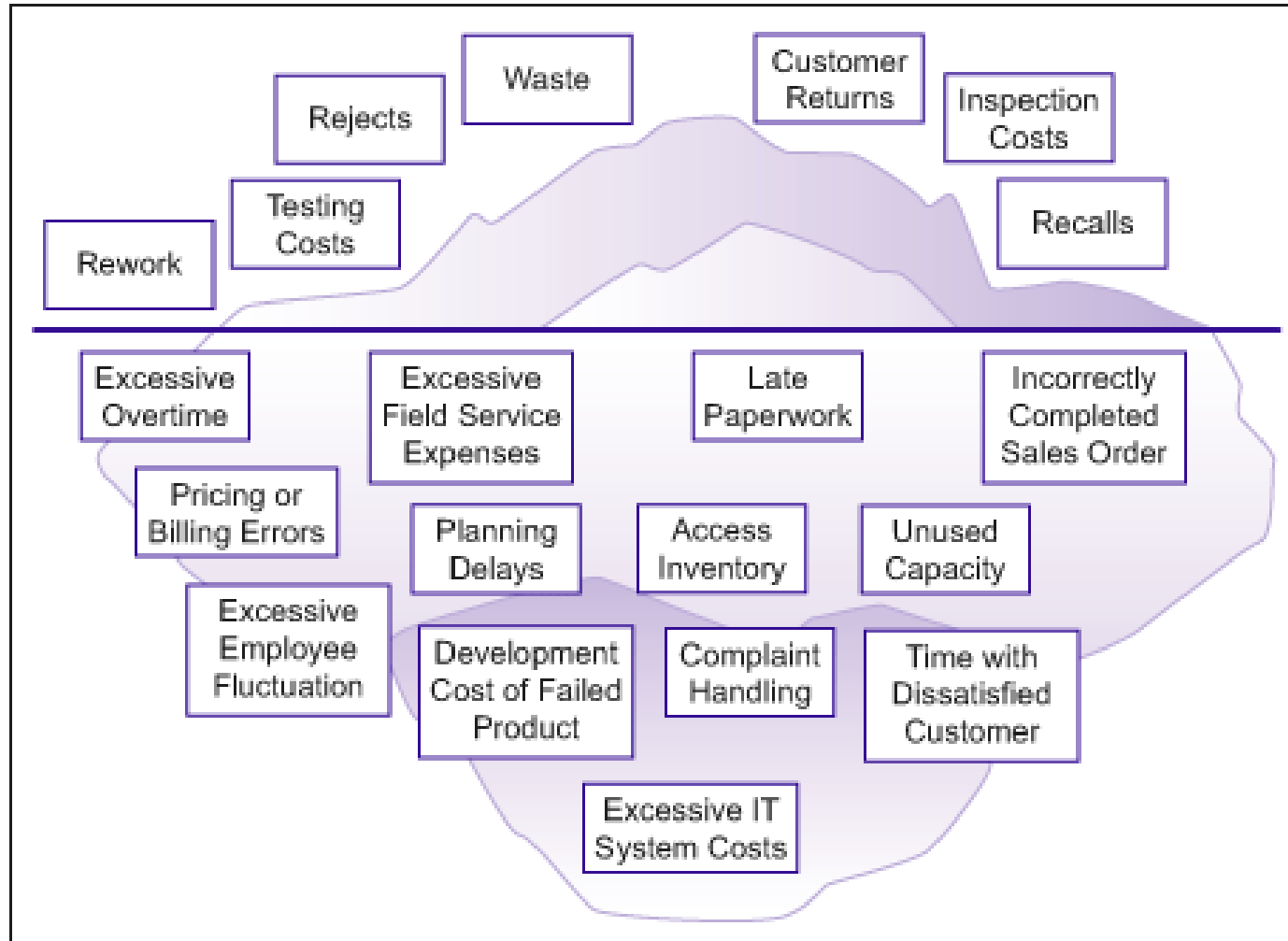
Main types of costs

Inspection

Prevention

Internal faults

External faults



Try to estimate the savings of your Project.

Assumptions and Constraints

We always make assumptions and are bounded by constraints.

The following are a few examples of **assumptions**:

- You will get all resources required by you.
- During the rainy season, cheap labor will be available.
- All important stakeholders will come to the next meeting.

The following are a few examples of **constraints**:

- You must complete 25% of the work within the first 30 days.
- You have to work with the given resources.
- You will be given only two site engineers.

Assumptions = Possibilities.
Constraints = Limits.

Keywords

What keyword would you write in a search engine for your project?

Examples:

- Short-tail keyword. Ex: Lemon
- Short-term fresh keyword
- Long-term evergreen keyword
- Product defining keyword
- Customer defining keyword
- Geo-targeting keyword
- LSI (Latent Semantic Indexing) Keywords: Lemon Tea
- Intent targeting keywords

Additional Comments

Examples:

- An important e-mail from the customer
- An important news about the sector
- A fact about the problem in the past
- A comment by an specialist
- A note from one stakeholder
- A quote from literature
- ...

Team formation



In the Team formation use the ARMI model to describe the team.

ARMI Team

Stakeholder	Role	Define	Measure	Analyse	Improve	Control
XXXX	Champion	A	A	A	A	A
XXXX	Leader	M	M	M	M	M
XXXX	Specialist	R	R	R		
XXXX	Trainer			R		
XXXX	Manager	I	I	I	I	I

A	Approver, sponsor or business leader whose approval is required.
R	Resource, an expert whose skills are needed for a given period of time
M	Member, full-time team members
I	Interested Part, someone you need to ensure is informed of the status of the project

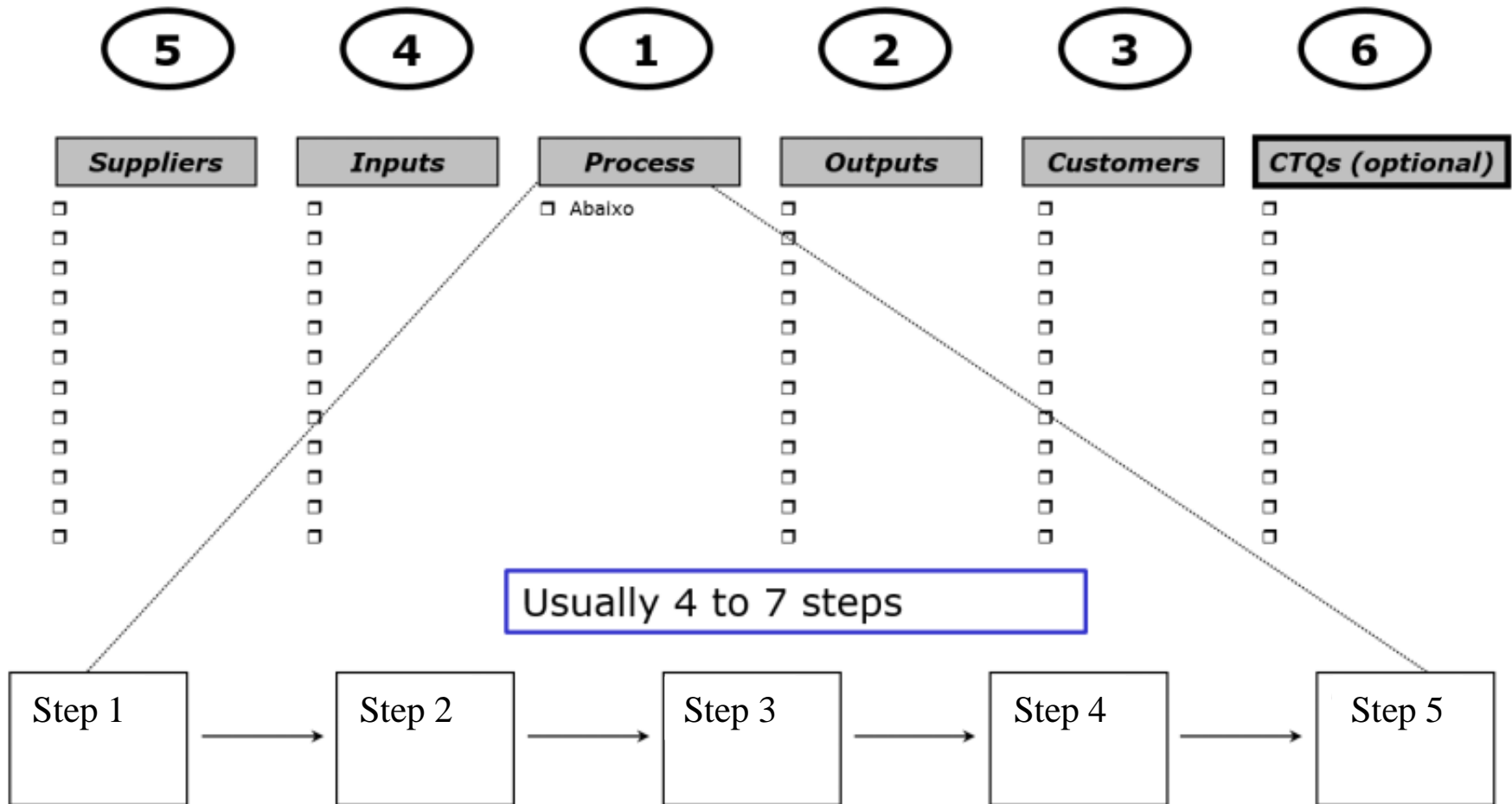
See **ARMI.xls**

High Level Process map



In the High level process map try to define the process to be improved. **It is not needed here all the process details.** Use SIPOC, Flowchart, Pareto Chart, or other tools to define the **scope** of the project.

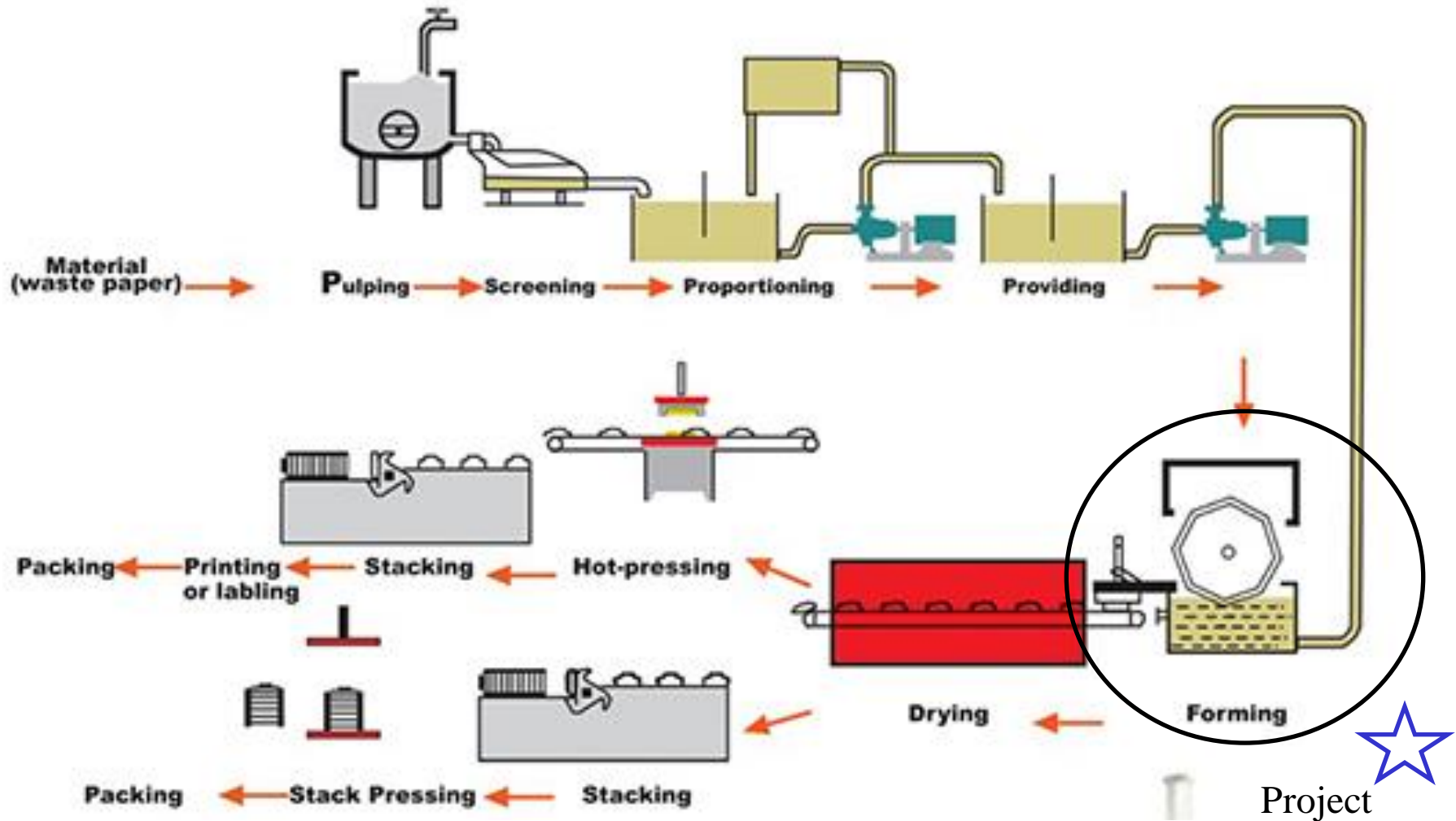
SIPOC



Use SIPOC do define the Project Scope

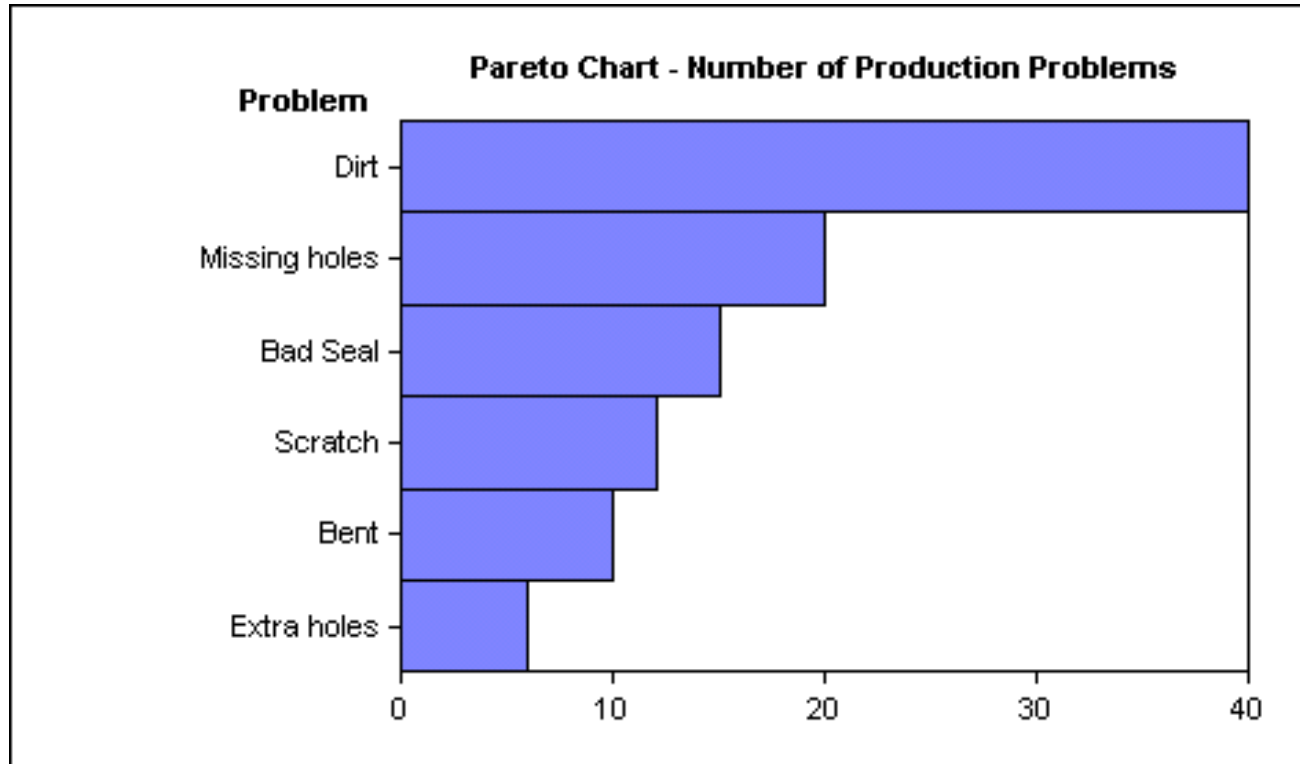
Flowchart / Process Map

Use a Flowchart to define the Project Scope



Ex.: Egg tray production

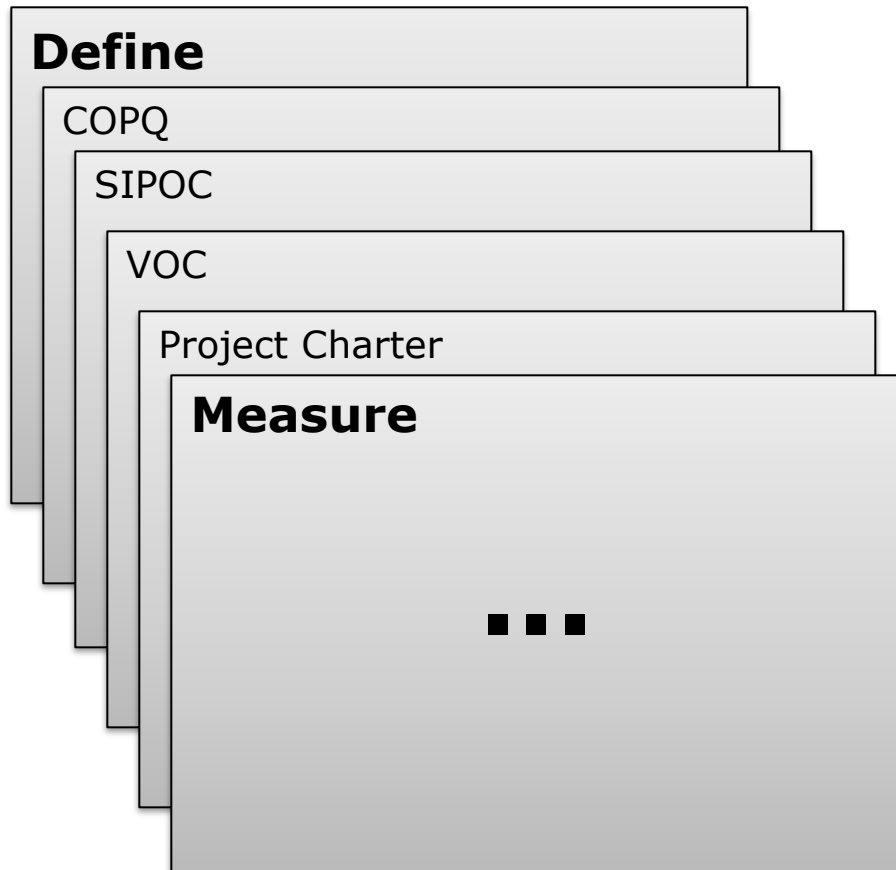
Pareto chart



Project scope.

Use a Pareto chart to define the Project Scope

Project files



Keep an organized list of project-related files

This facilitates meetings, review, preparation of the final report, etc ...