IT PROJECT MANAGEMENT

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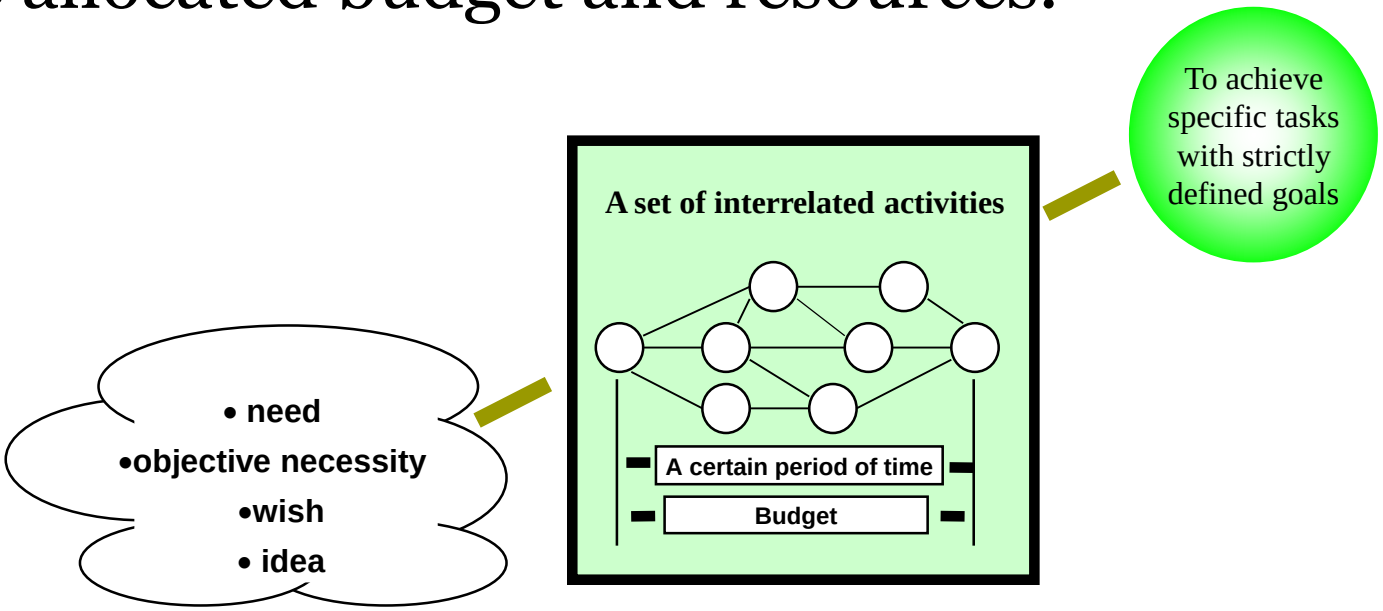
- Basic concepts of project management
- Goals and criteria for the success of the project
- Methodology: Waterfall
- Methodology: Scrum
- Methodology: Kanban
- Cynefin model

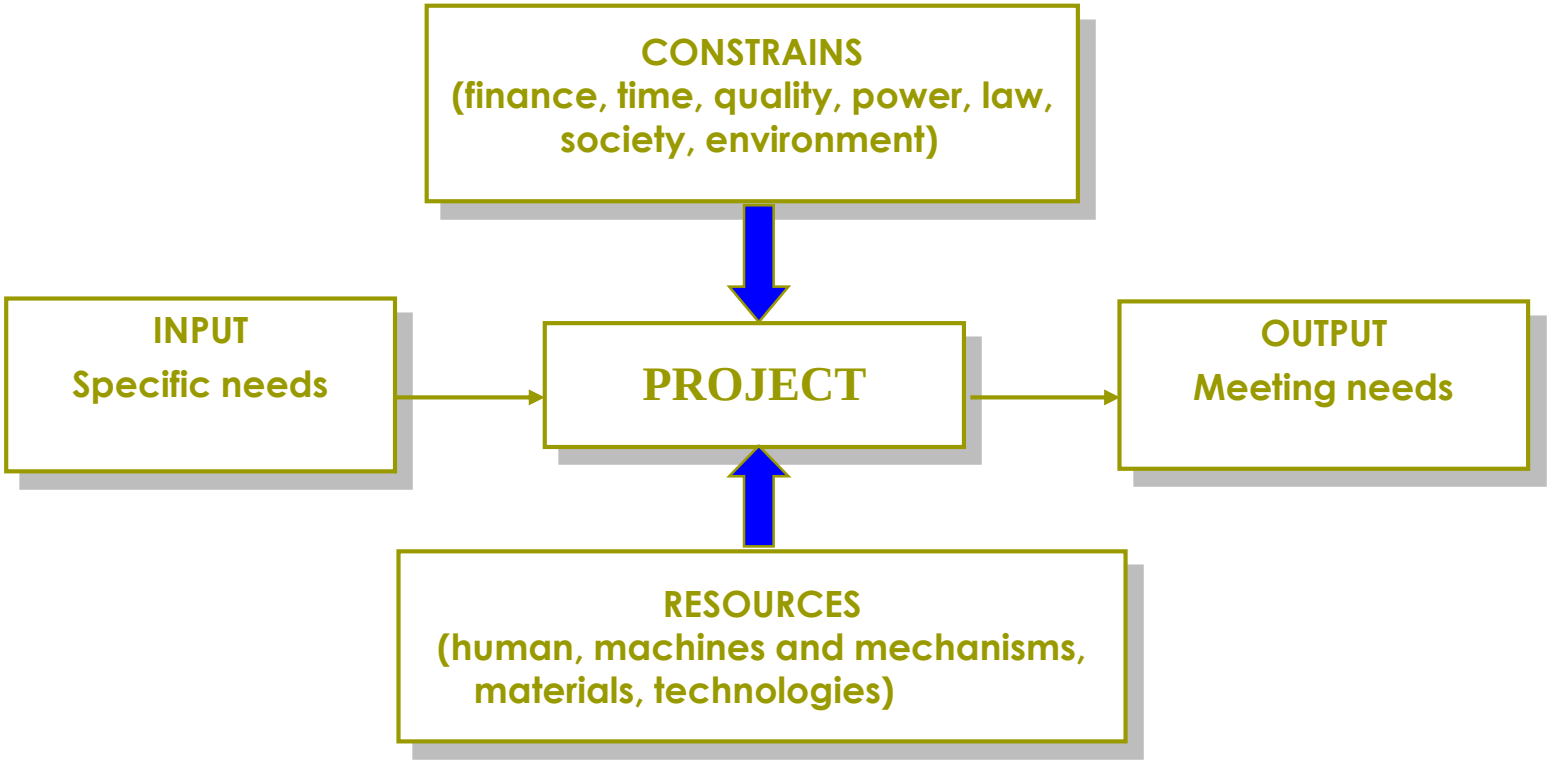
What is project?

- A project is a set of interrelated activities that are aimed at achieving specific tasks with strictly defined goals for a certain period of time, within the allocated budget and resources.

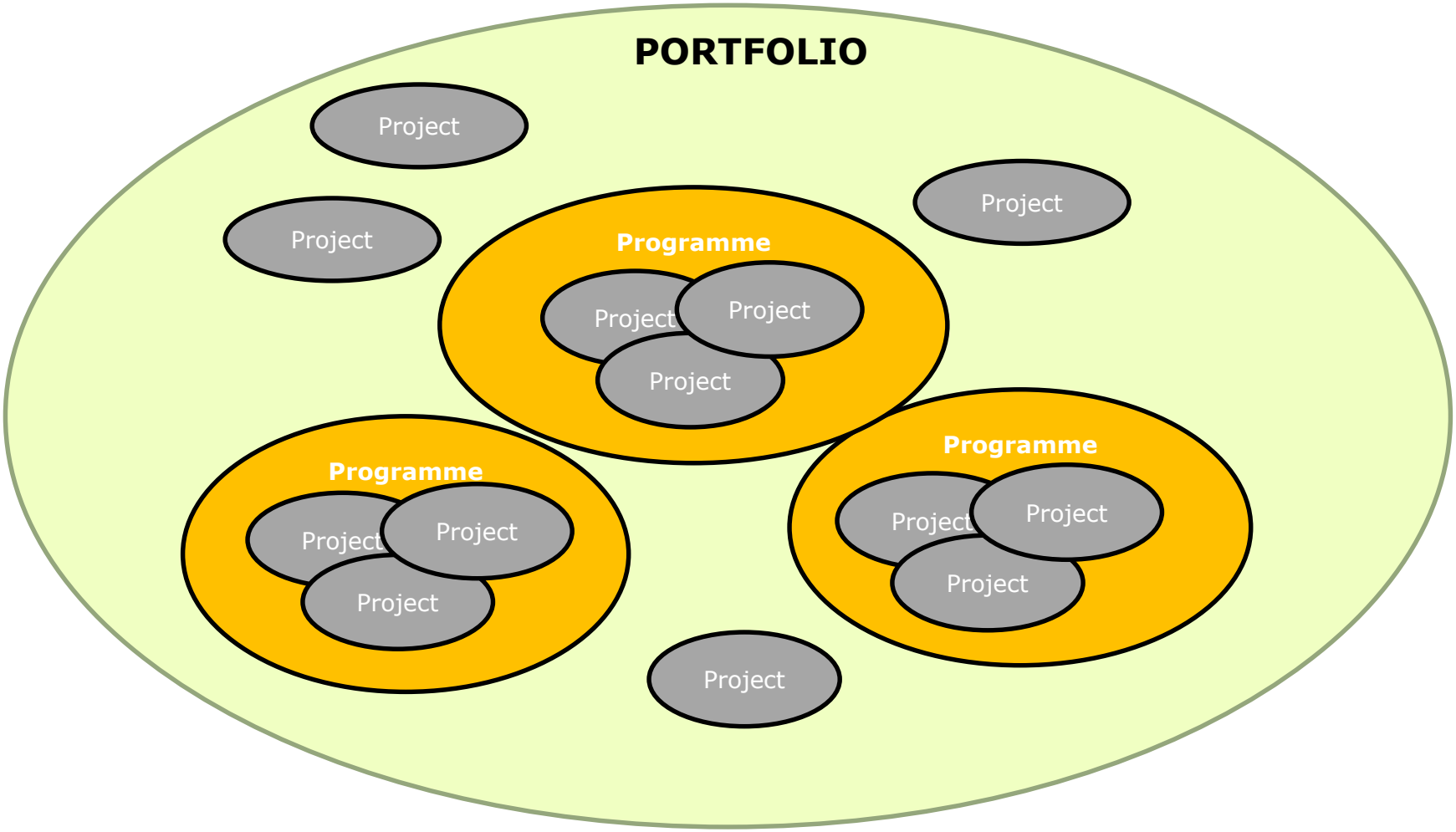


Project features

- it is aimed at achieving one, specific goal, result or intended for the production of a product;
- has certain restrictions or boundaries;
- it is unique;
- skills and knowledge of several "professions" and organizations are used;
- there is an element of uncertainty;
- limited in time, i.e., a start and end are defined;
- limited in financial, material and human resources

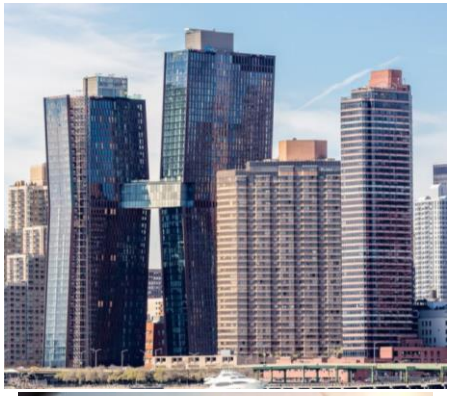


Project, programme, portfolio



Types of the projects

- *Development projects* (creative, *soft project*) – intended for the development and improvement of the company's operations. Not always specific enough.
- *Implementation projects* (*hard project*) – these are usually technical projects. The goals are always clear and specific.



Key issues

What for? - project mission

What? - Aim / task of the project

Methods for project selection

There are usually more projects than the time available and resources to implement them.

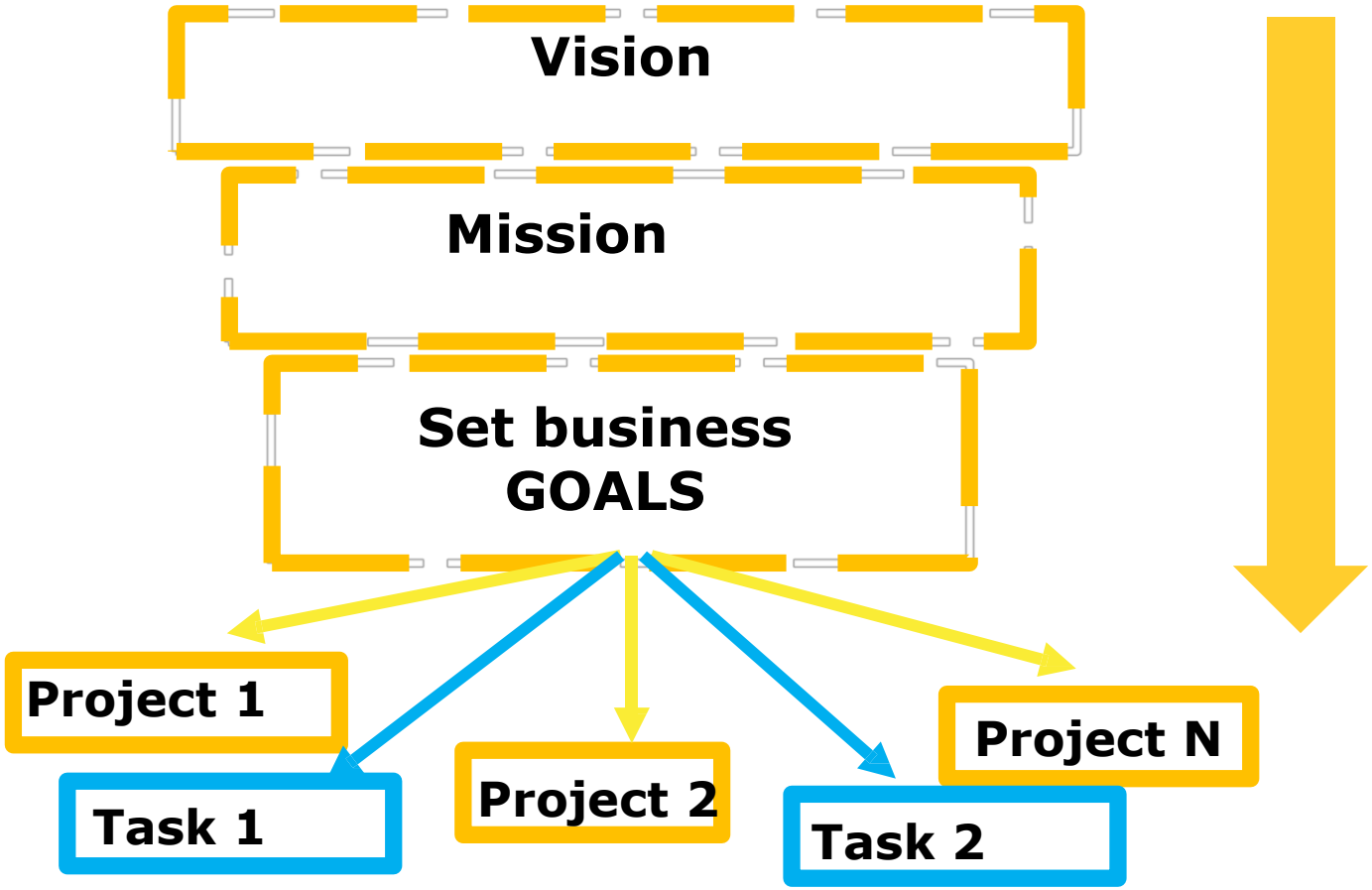
Therefore, it is important to follow a logical IT project selection process.

Project selection methods:

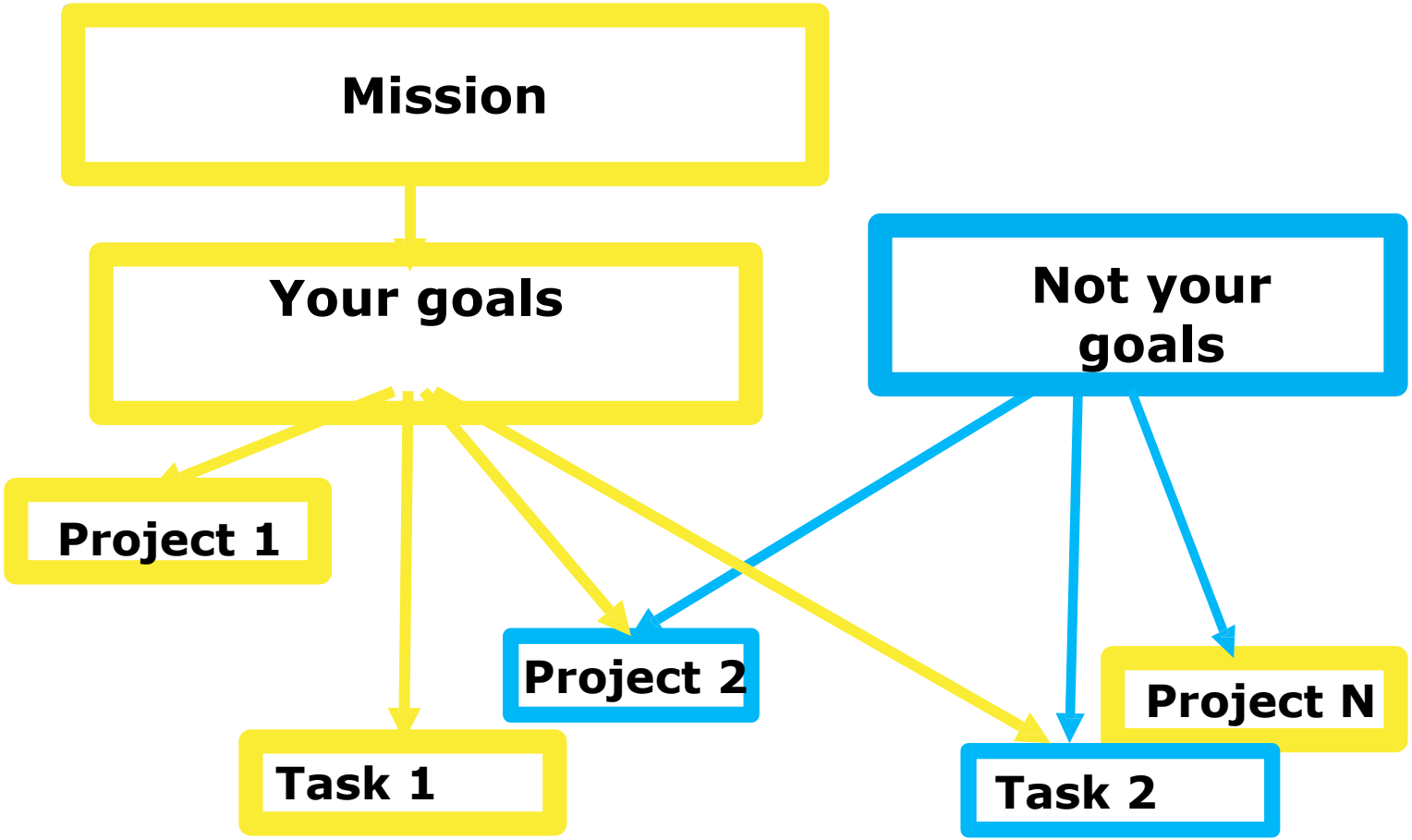
- Focus on general needs
- Categorization of projects
- Financial methods
- Valuation models

Decomposition of strategy

Decomposition of strategy



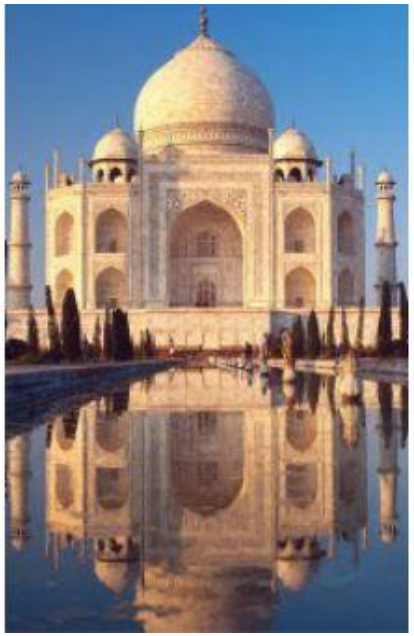
Projects in life



Project management

a powerful tool that allows a company to effectively implement strategic goals

Development of the project management



Professional associations

www.ipma.world/

- **1965 -** International Project Management Association **INTERNET**, which brought together more than 20 national associations. (The name was changed to IPMA in 1994).

IPMA® international project management association

https://www.pmi.org/

- **1969 - PMI-Project** Management Institute in USA with Chapters in many countries around the world.

Project Management Institute
Registered Education Provider

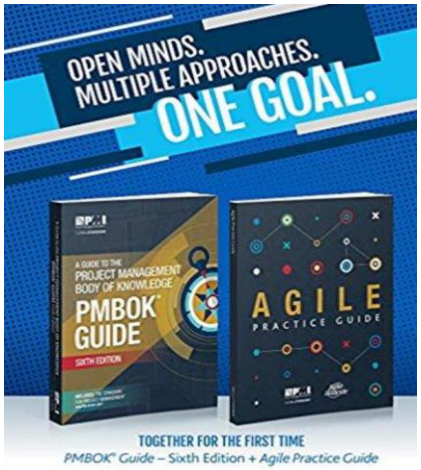
Project Management Institute.

Standards and their types in project management

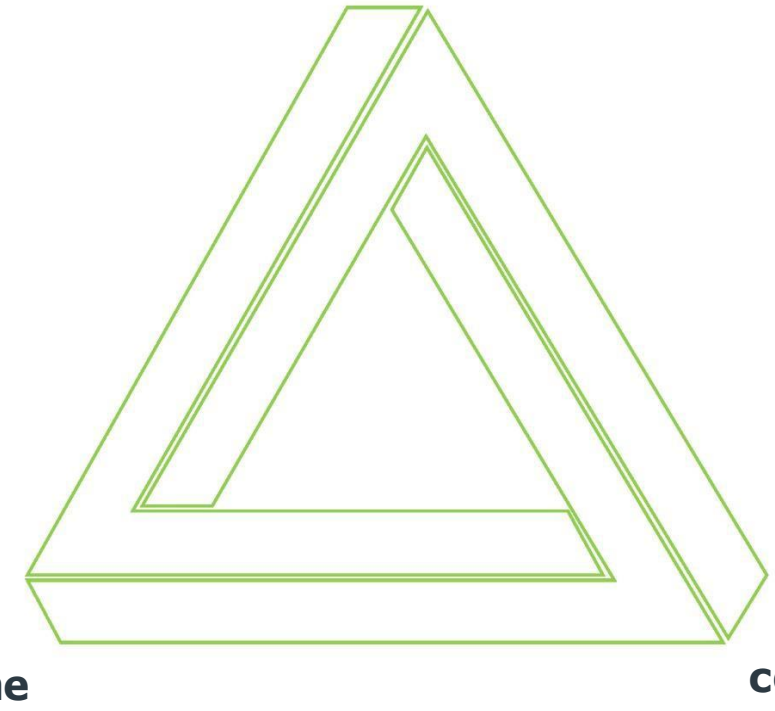
- The standardization of project management can be explained by the fact that technical staff was intensively involved in project management.
- Technical staff require clear definitions and rules that are clearly set out in standards, such as ISO, DIN or ANSI standards.

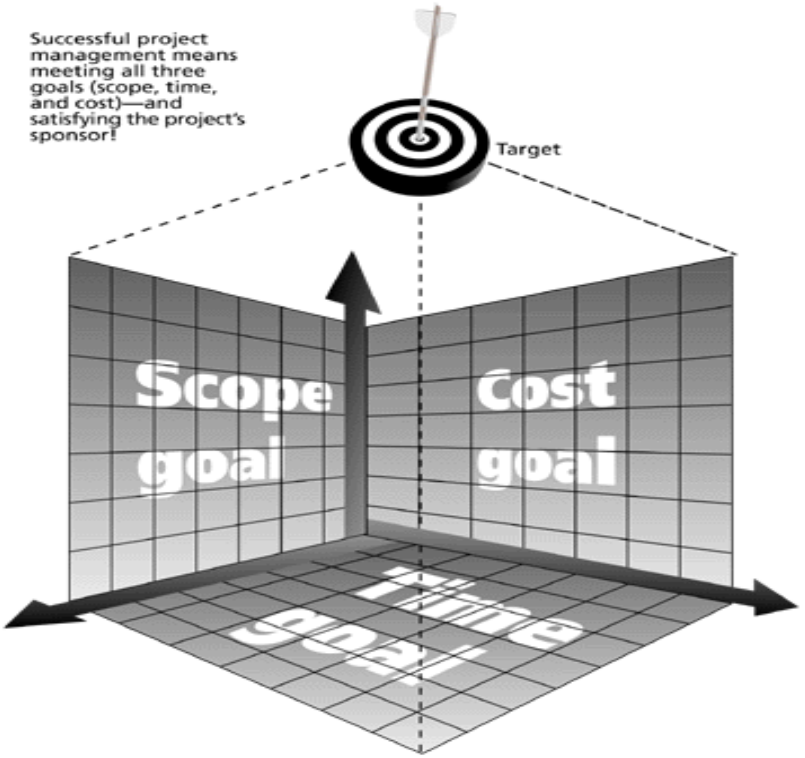
Standards and their types in project management

- Standards developed by the International Organization for Standardization (ISO) in project management;
- International standards developed by one of the internationally recognized project management associations / societies on which the project manager certification systems are based; IPMA, PMI, PRINCE2
- National standards, for example, balticpm.eu lnpva.lv

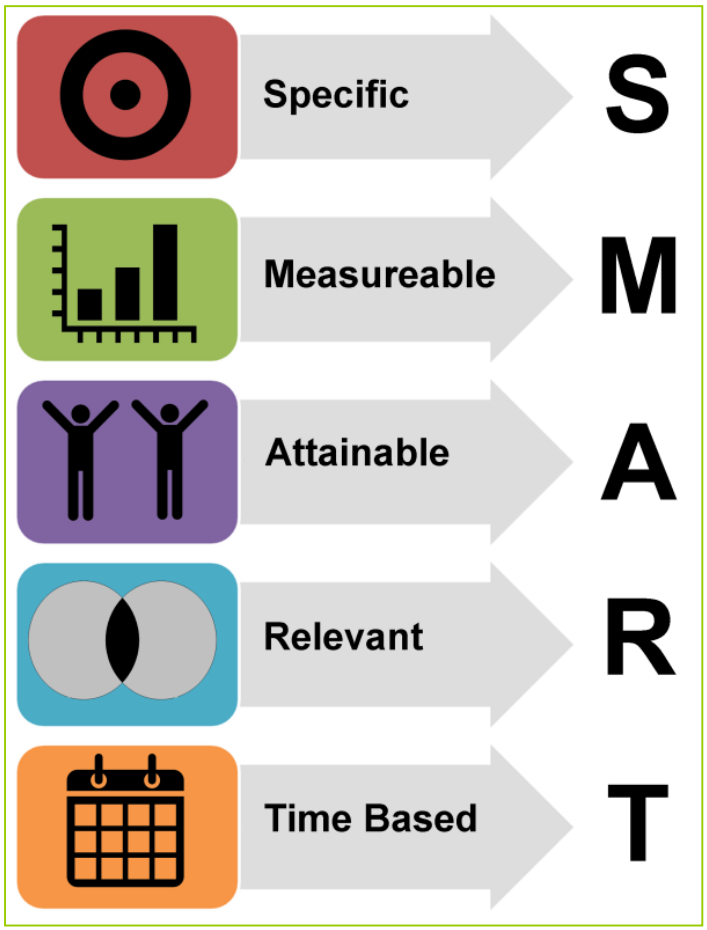


Project limitations - Triple Constraints





Goals of the project



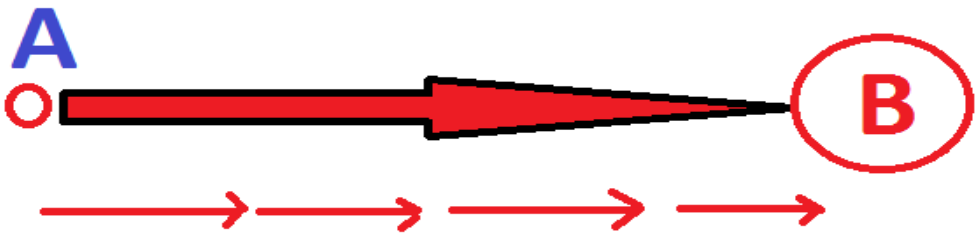
- **S**pecific (simple, sensible, significant).
- **M**easurable (meaningful, motivating).
- **A**chievable (agreed, attainable).
- **R**elevant (reasonable, realistic and resourced, results-based).
- **T**ime bound (time-based, time limited, time/cost limited, timely, time-sensitive).

Project goal

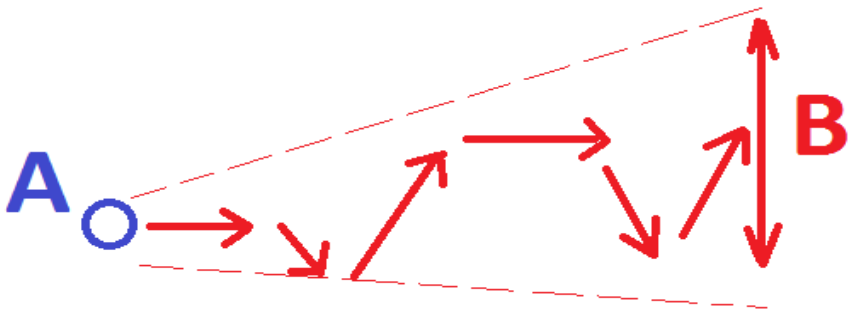
6 questions for SMART goal	
Who	Who is involved?
What	What exactly do I want to achieve?
Where	Determine the location
When	Set time periods
Which	Define restrictions
Why	▪ What will you gain by reaching the goal? ▪ Is it good for business?

Project goals

Clear goals



Unclear goals



Working with unclear goals

Emotional component (strong)

The goals must be supported with enthusiasm and energy for the project.

Sensory component

The more tangible the goal, the easier it is to pass it on to the rest of the team. Think of tangible goal-achieving artifacts.

Advanced component

Indeterminate goals are not static, they change over time. It is important to stop periodically to reflect on the results. Such targets should be adjusted on the basis of new information received.

Project success criteria

- How will you know that the project is a success?
- What elements (measurable, tangible, …) should be received as a result of the project?
- What will stakeholders gain after the project is completed?
- Project team members
- Project sponsor / client
- Users of project products
- … ..

It is very important to determine what the project success criteria are at the beginning of the project

Categorization of IT projects

Categorization: or project address

- Problem
- Chance
- Directive

Categorization: how long it takes and when necessary

Categorization: the overall priority of the project

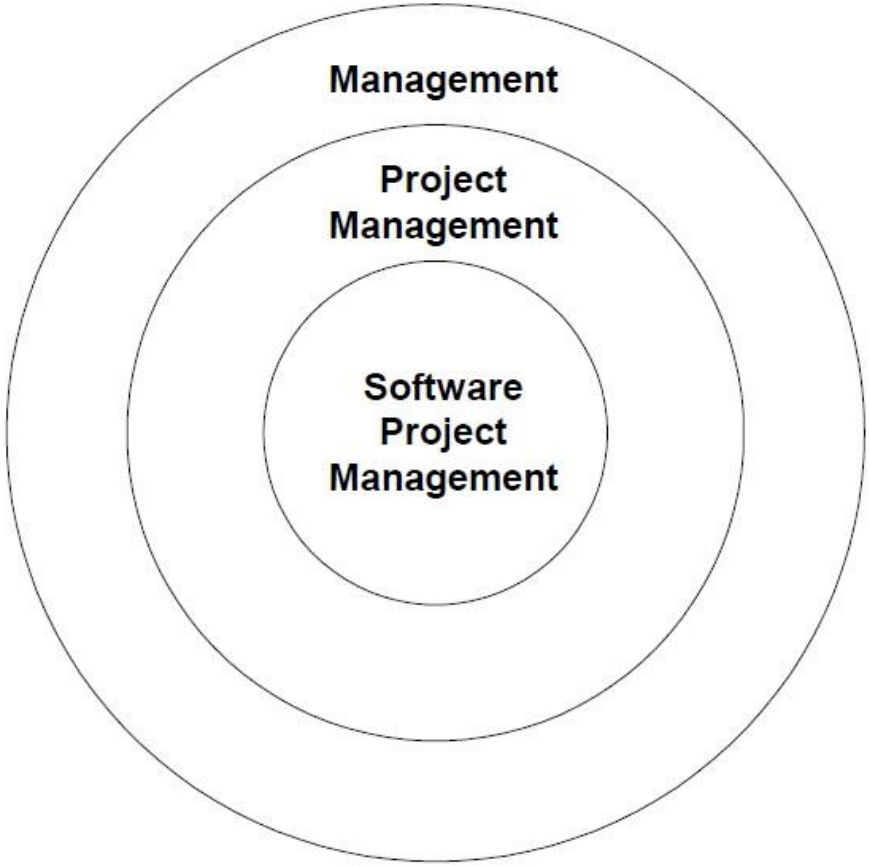
Methods for project selection

It is often difficult to provide a strong justification many IT projects, but everyone will agree that they are of high value.

Three important criteria for projects:

- There is a need for a project
- Funds are available
- There is a strong will for the project to succeed

Software project management

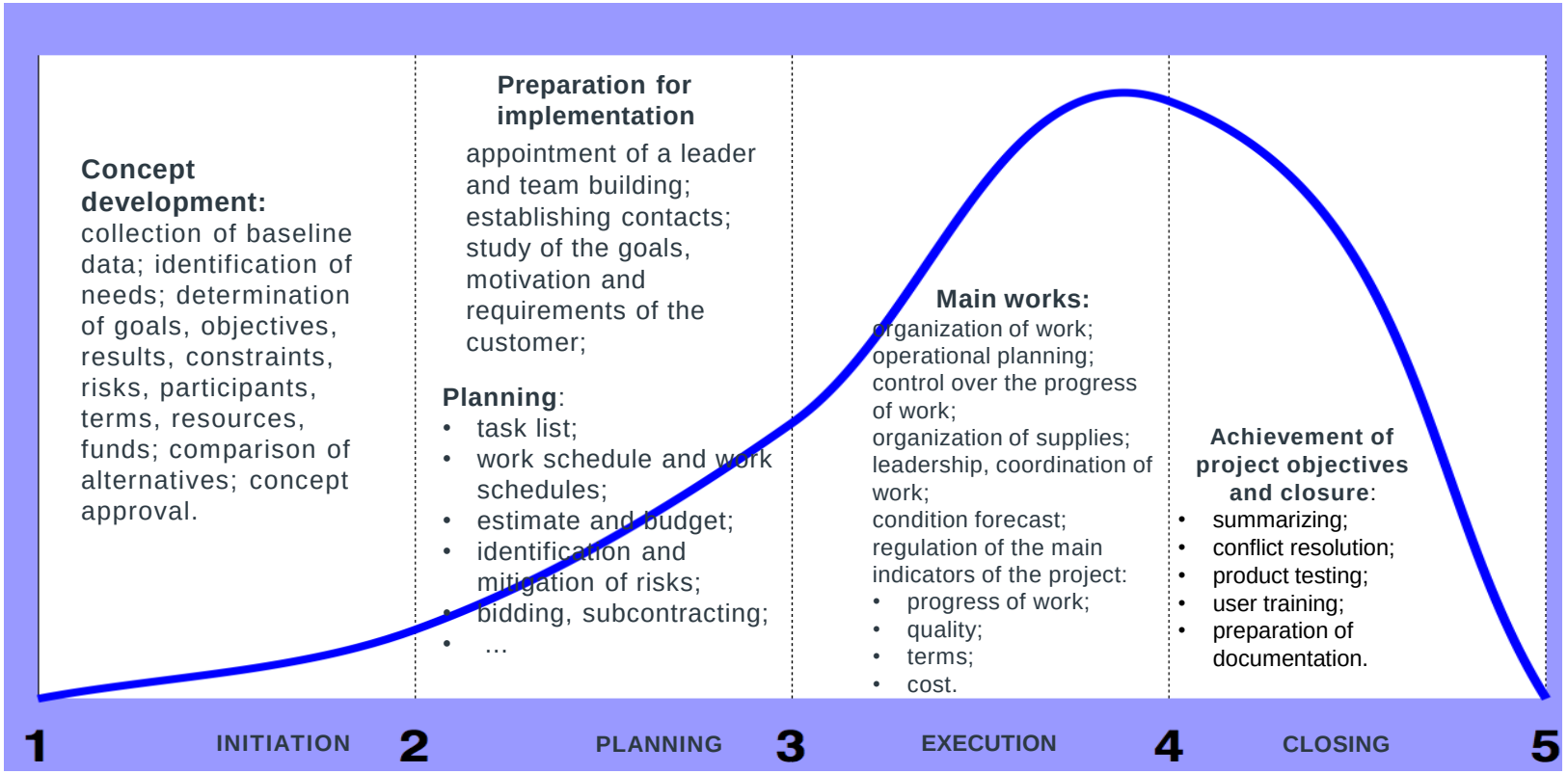


There are 3 possible lifecycle approches in IT project management

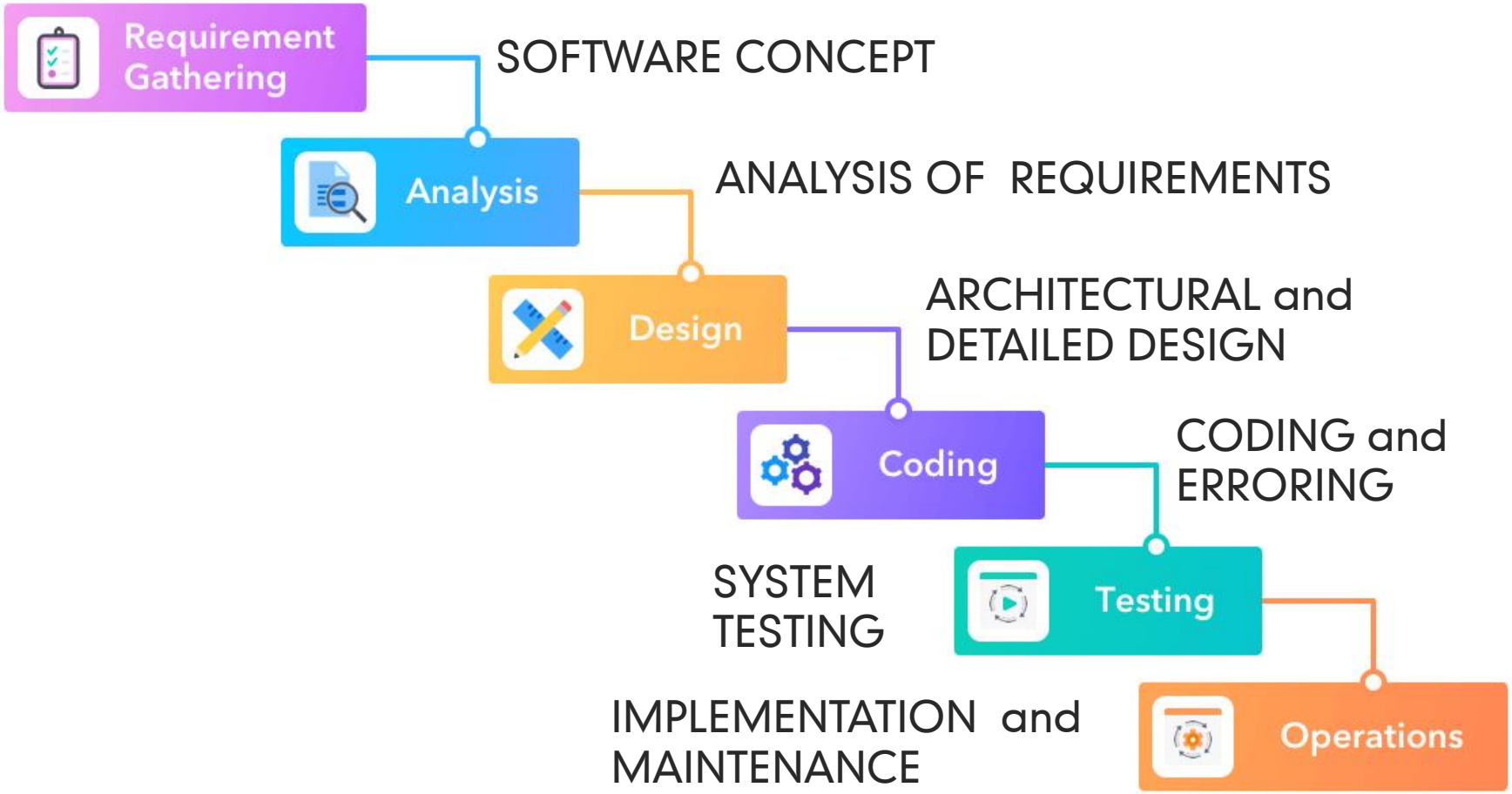
- The predictable (**Waterfall**). The traditional approach, even in the 2010s, is applied ten times more often than others. Step by step linear algorithm.
- **Iterative**. A modern approach, in which the functionality of the developed software is expanded with each new release within the project.
- **Adaptive**. Agile, Scrum and other methods. The company's goals and development strategy can change regardless of the original plan.

Classical project lifecycle

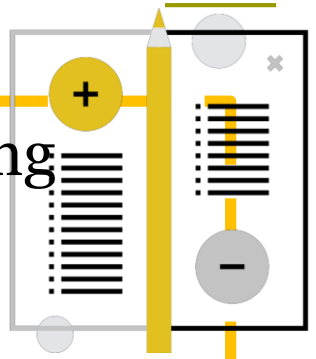
- There are different project life cycle models in the project management literature, however, the most commonly used model consists of four stages of the project life cycle:



Watwerfall



Some Disadvantages of Waterfall



- Starting with this requires a clear understanding of the purpose of the project
- Clear requirements for the project product are required
- The customer sees the project result only at the end of the project
- Mistakes made during planning can be critical to a project;
- Change is a constant struggle between the Client and the Project Manager ...

Excessive time consumption (Waste)

- Partially completed work
- Redundant processes
- Features / functionality appear
- Switching between works
- Waiting
- Unnecessary movement
- Defects
- Management activities

Project Management Methodologies

Agile Methodology

Agile methodology provides a flexible, iterative design and build process. Agile is more than a methodology. It covers a set of processes for extensive projects in dynamic environments. Therefore it is much appreciated by the customers.

Kanban Methodology

Kanban methodology uses lean principles and aims to increase productivity by eliminating wasted time and resources. This methodology can be used in conjunction with Agile.

Lean Methodology

Lean is a problem solving tool of eliminating wastes and removing wasteful activities that don't add value to the process. By the help of this problem solving tool only the activities which add value to the process can be considered. Activities can be categorized by their values in the process.

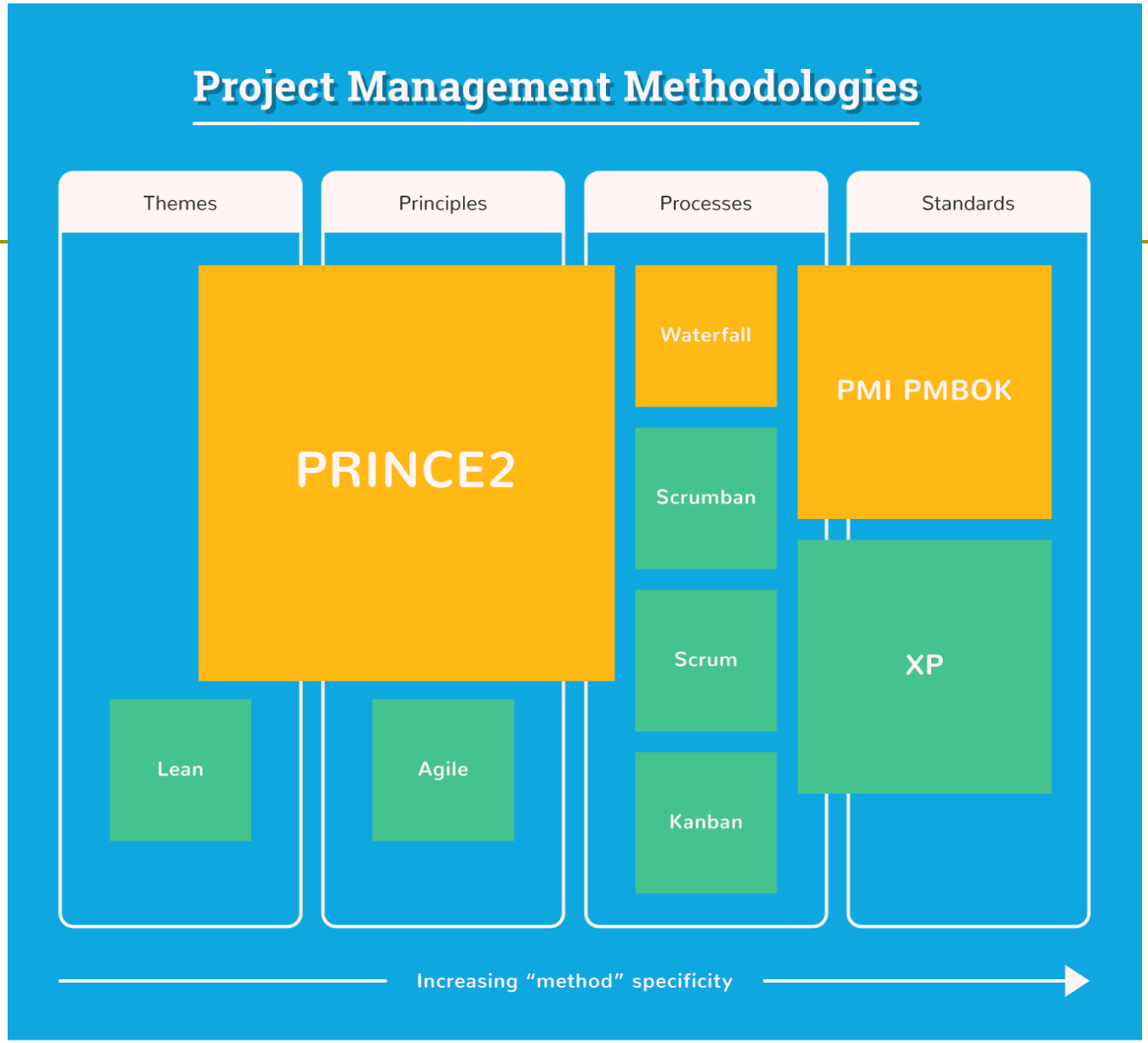
Six Sigma Methodology

Six Sigma is a useful problem solving technique for process improvement which was introduced by engineer Bill Smith while working at Motorola in 1986 then became a popular management approach at General Electric (GE) in 1995 by the studies of Jack Welch .
Six sigma methodology relies on 5 process steps, called DMAIC.

Waterfall Methodology

Waterfall method is a simple method for planning projects. In this method the team completes one task or step then performs the next step. All the requirements and the activity sequences are defined at the beginning. Then all the tasks are performed as a waterfall from the beginning up to the end of the project.

projectcubicle.com



Read the full article at: **thedigitalprojectmanager.com/project-management-methodologies-made-simple**

Agile Manifesto / Values (2001)

People and their collaboration are more important than **processes and tools**

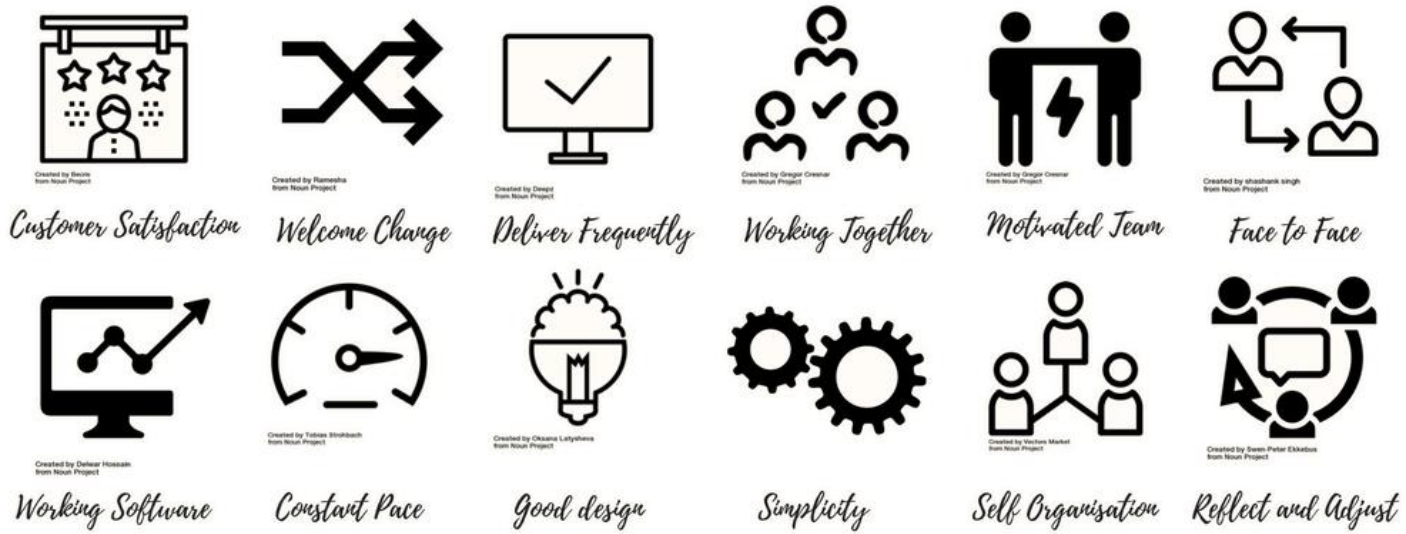
Working services and products are more important than **detailed documentation**

Cooperation with the Customer is more important than **strict contract restrictions (concluding contracts)**

Responding to change is more important than **following the plan (following the plan)**

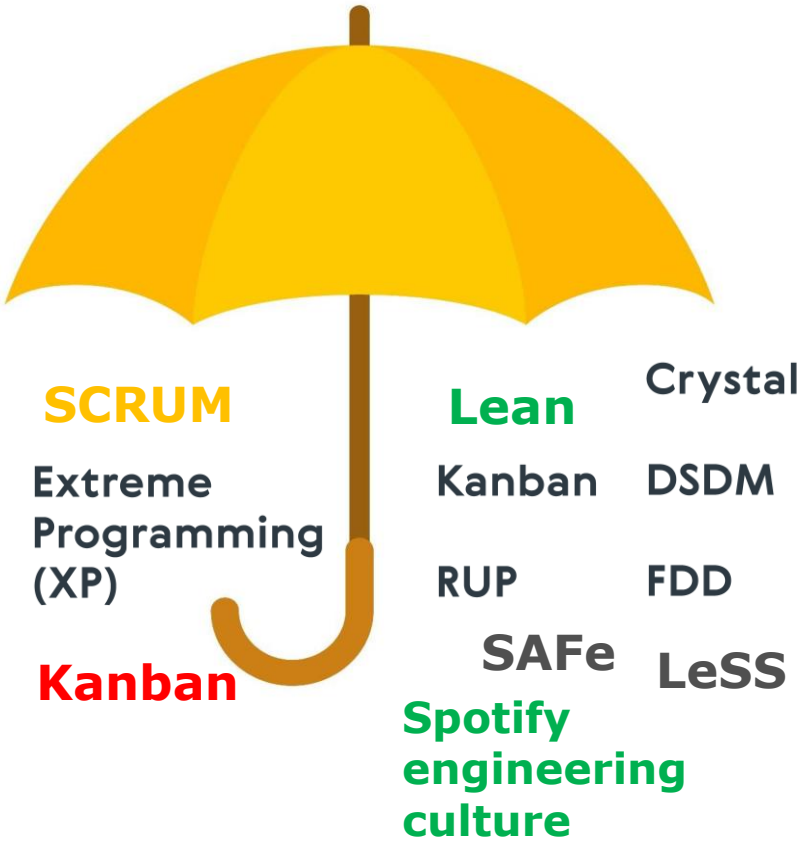
Written on the right is very important, but more important is written on the left

12 AGILE PRINCIPLES



http://agilemanifesto.org/principles.html

Agile community



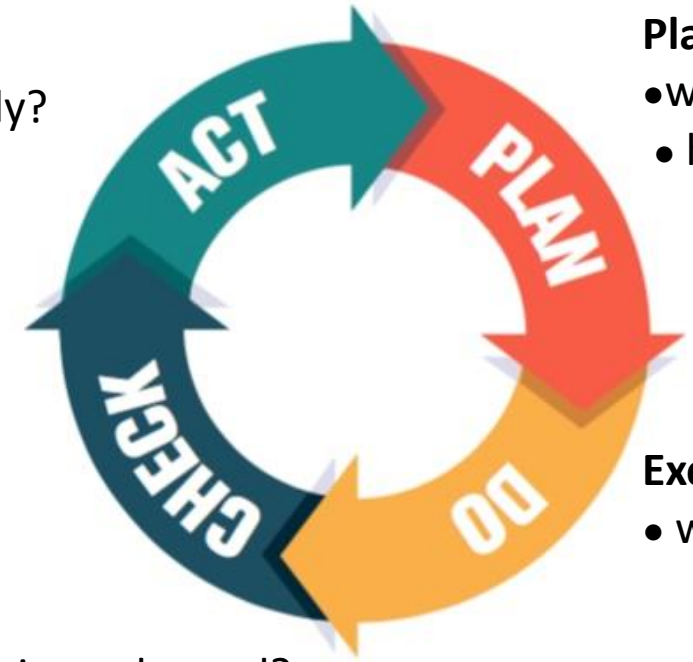
SCRUM

KANBAN

AGILE

«Make mistakes quickly, make mistakes safely» = «Learn fast, learn safely»

We make adjustments
- what will we do differently?
- we will do differently!



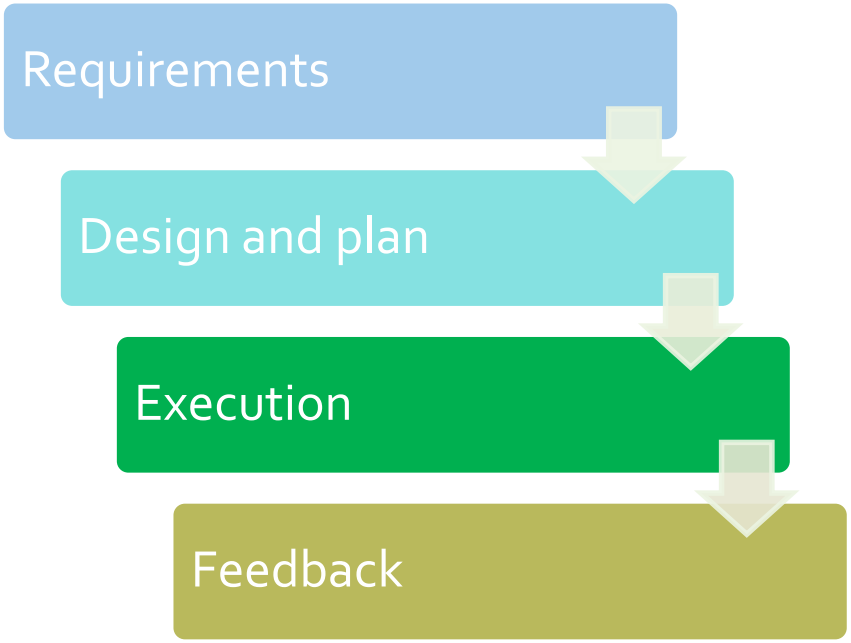
Plan
- what to achieve
- how to achieve

Execute
- we execute plan

Evaluate
- is the result as planned?
- or how we reached result is as planned?

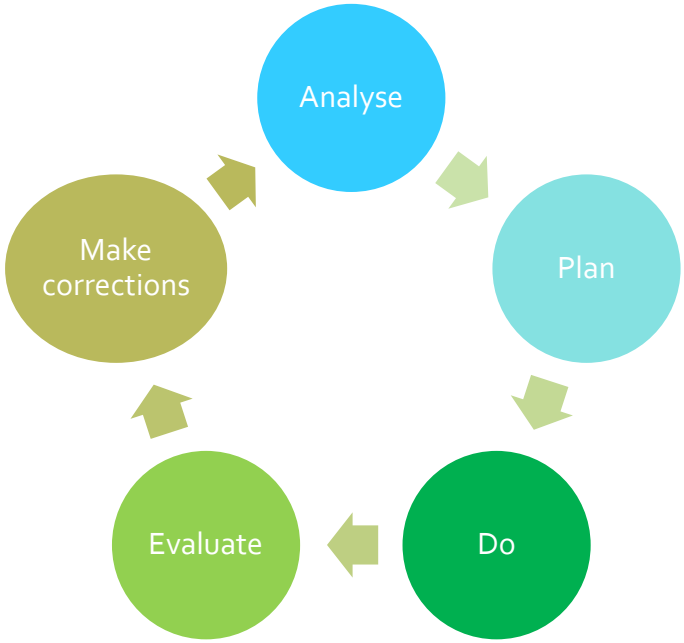
PROJECT MANAGEMENT APPROACHES

Traditional

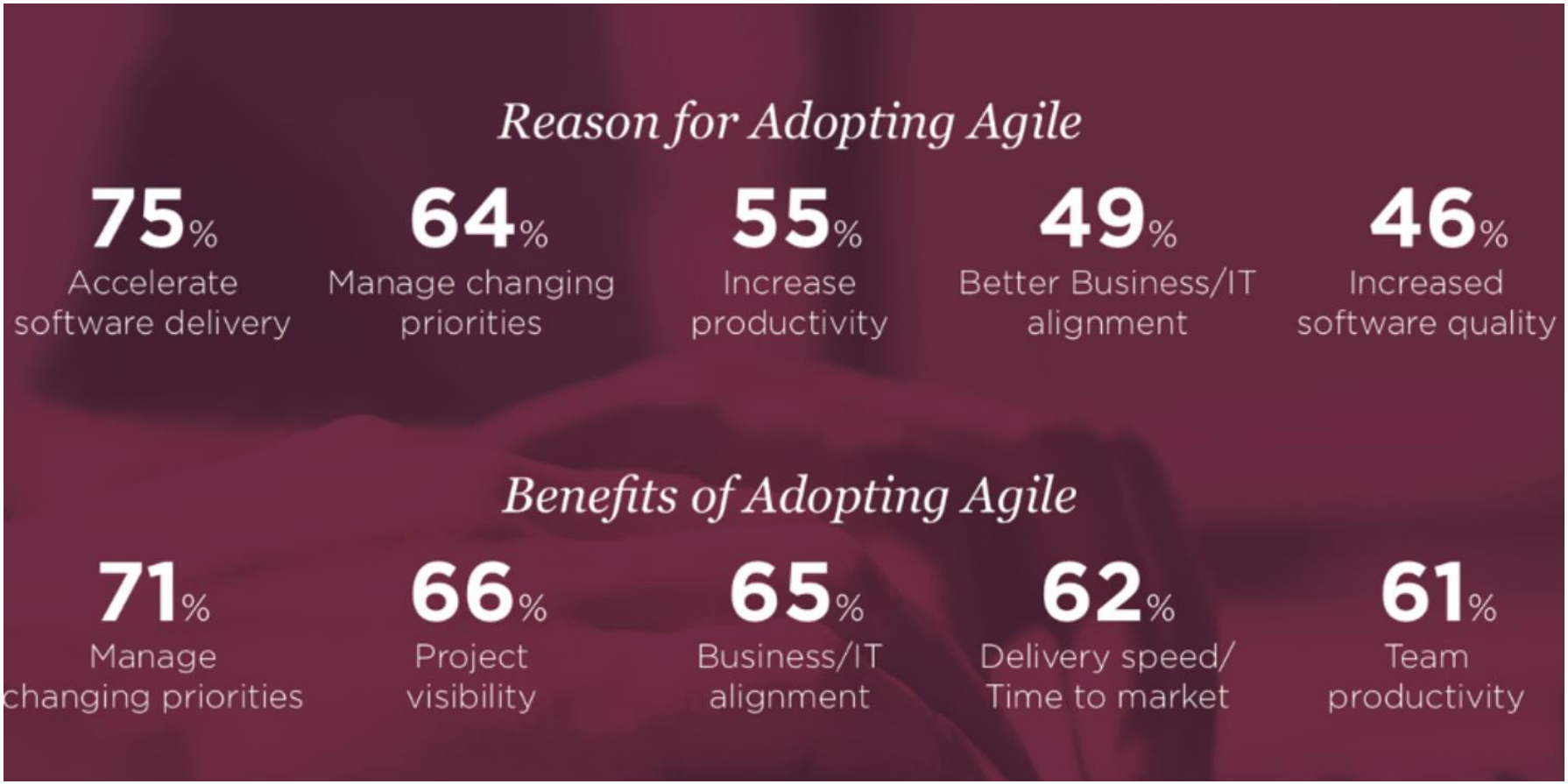


Execution of sequential activities
Detailed planing at the start
Advanced project management

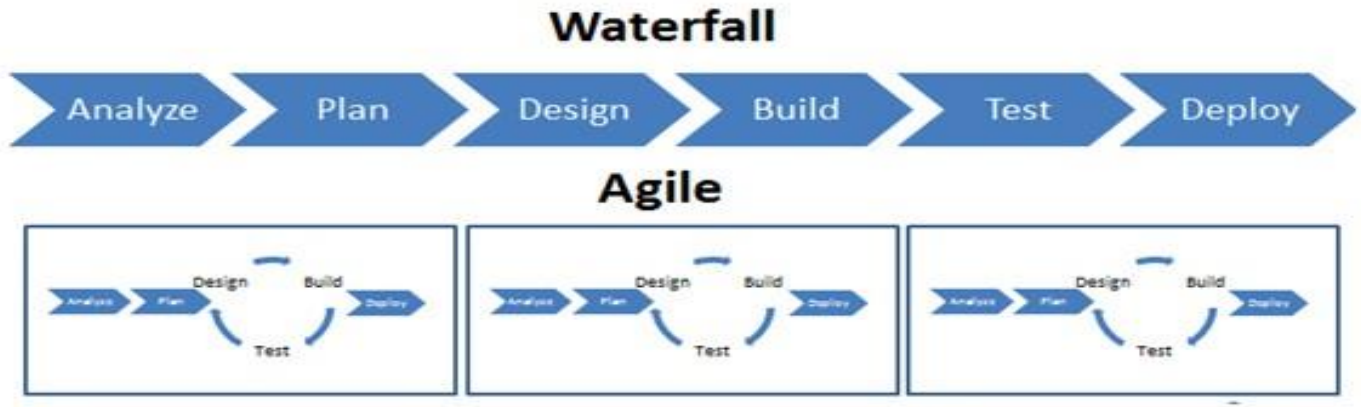
Agile

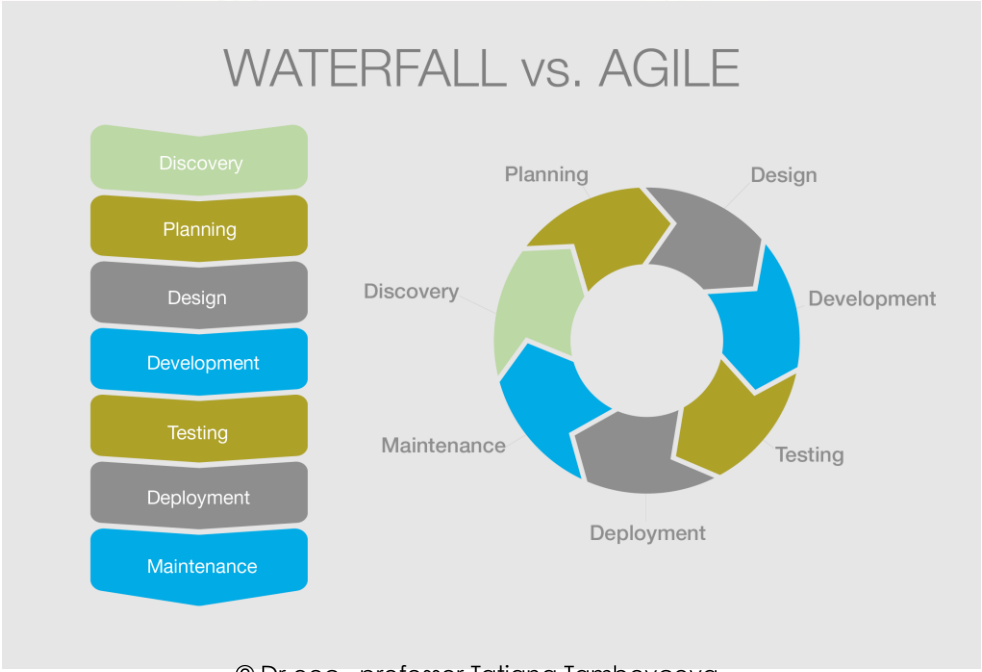


Continuous cycles
Small, obstructed by functional commands
Continuous improvement



Waterfall vs Agile

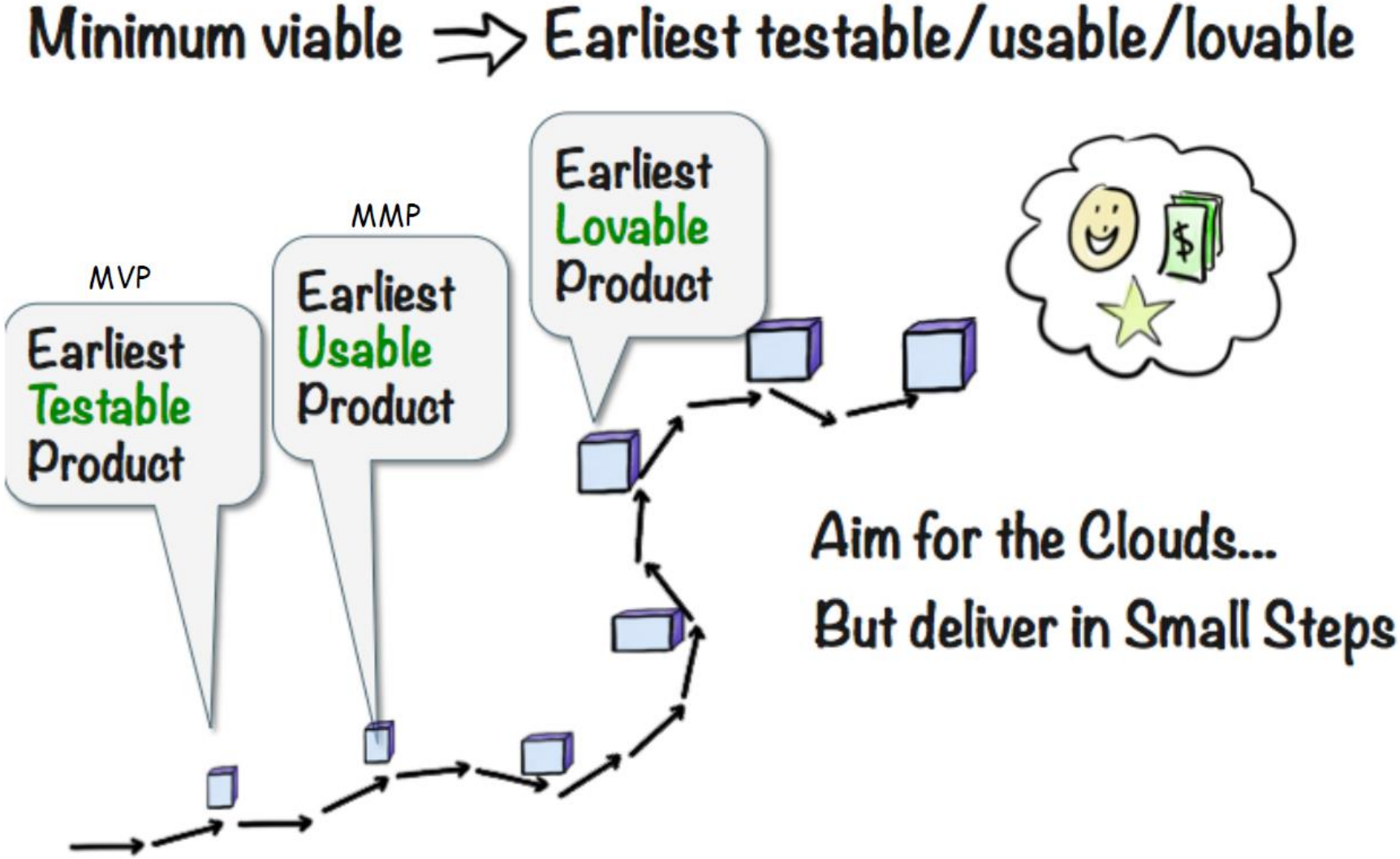




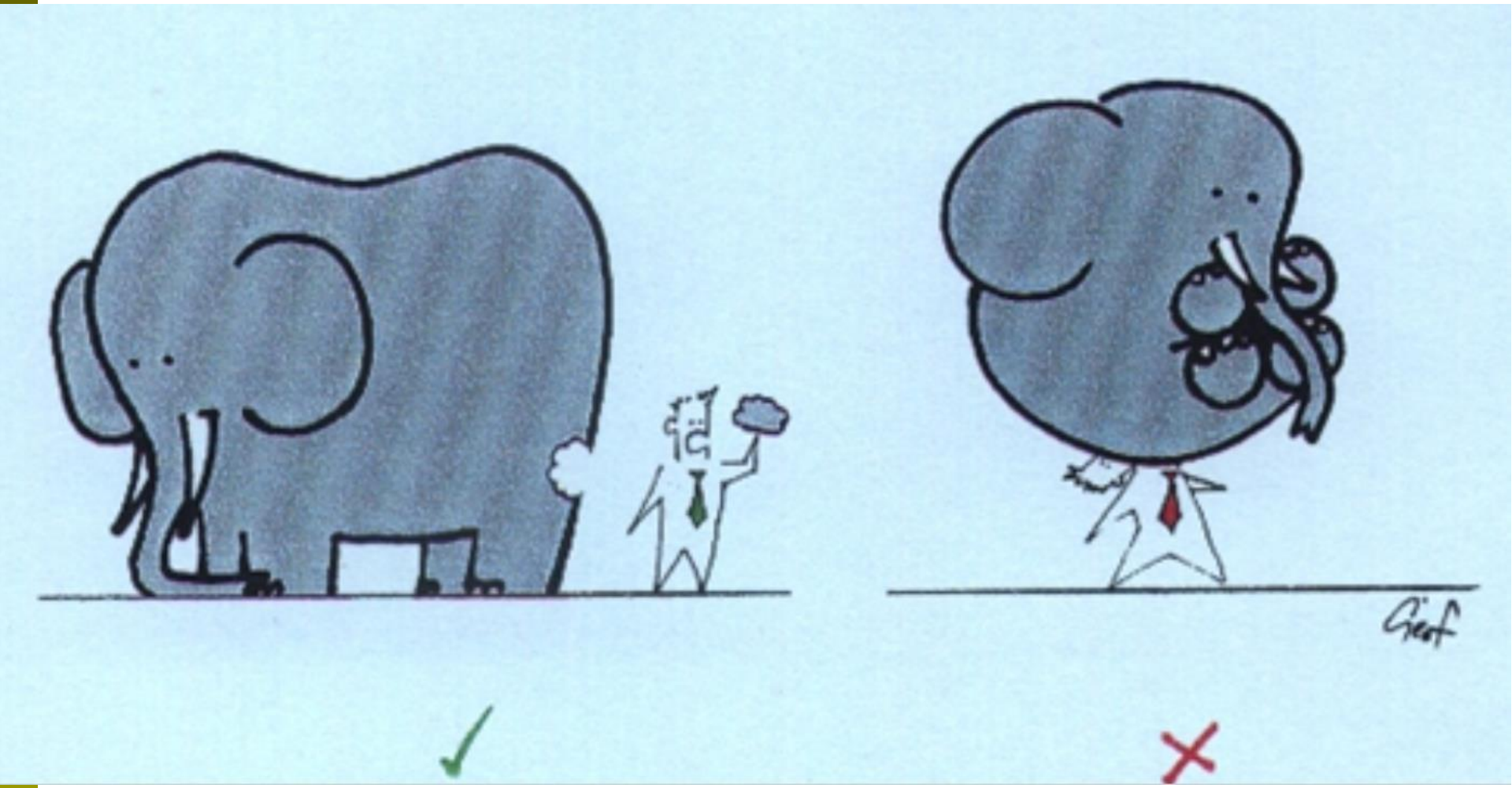
Minimal Viable Product

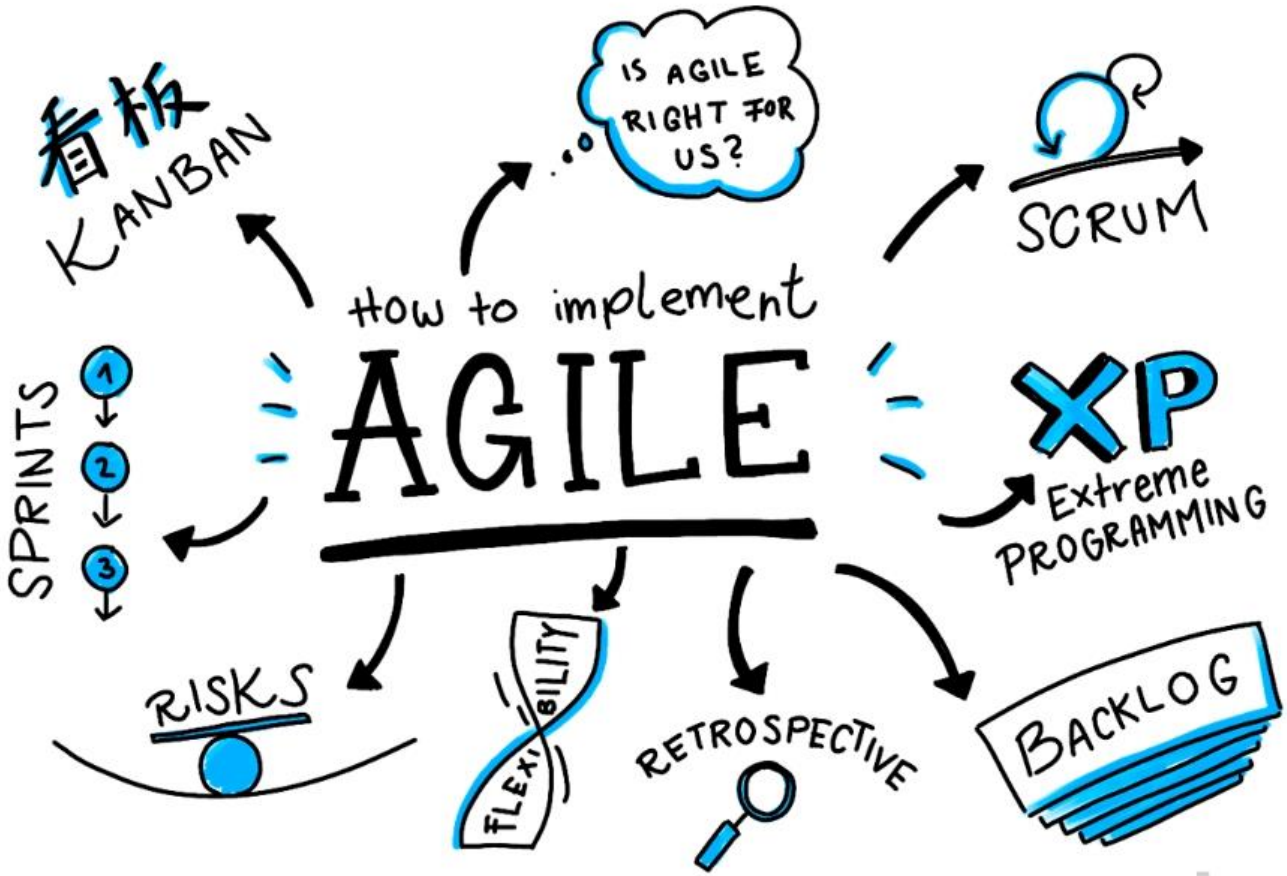
is a version of the product / service that allows the team **to get feedback** from **the user** **early** and **with the least investment** for further product/ service development

- MVP – Minimal Viable Product
- MMP – Minimal Marketable Product



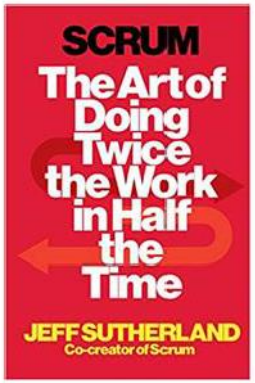
We eat the elephant in pieces





SCRUM

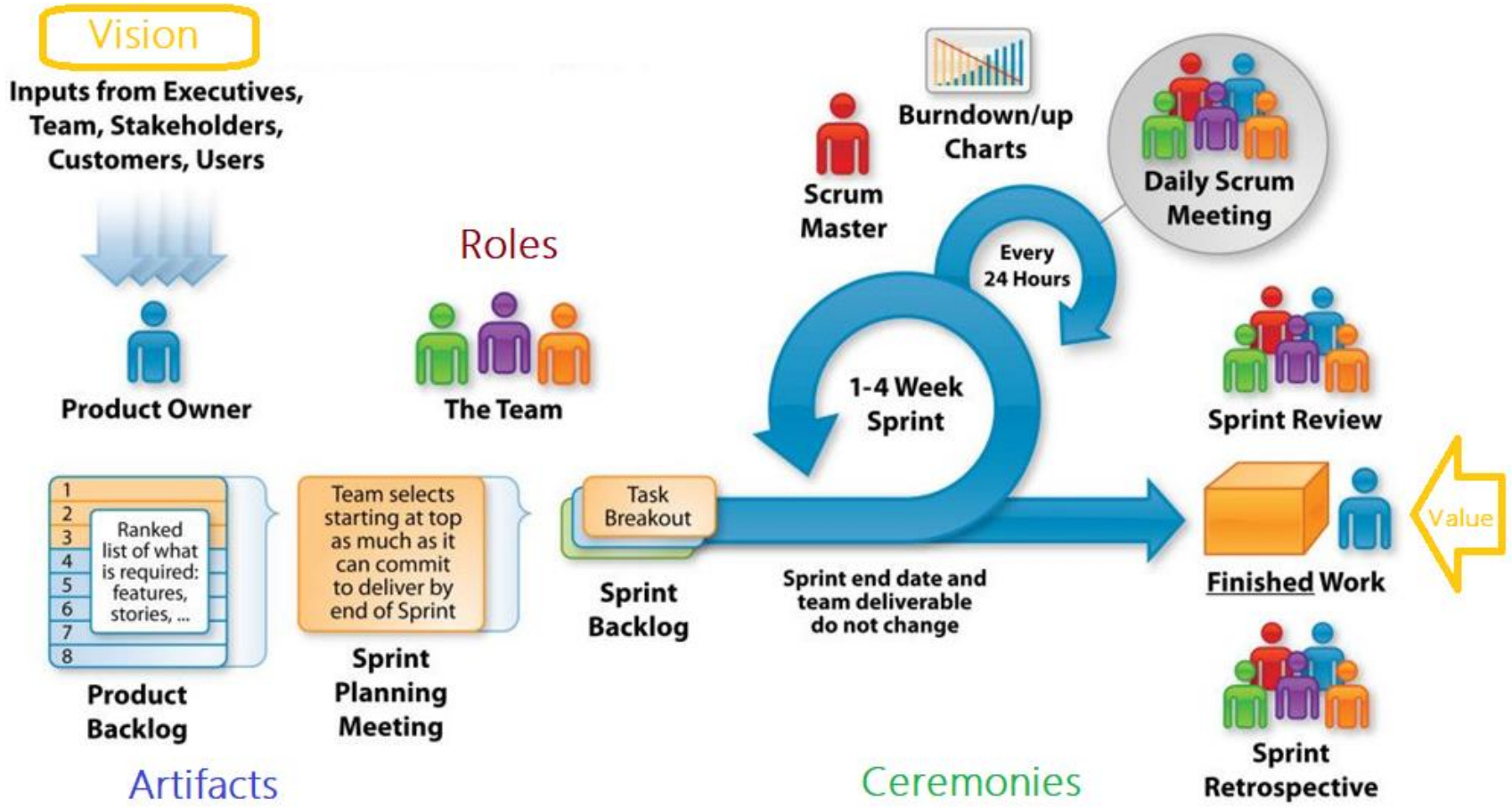
- One of the most popular derivatives of Agile is **Scrum**.
- Scrum is a process framework that has been used in the development of complex products since the 20th century. Early 90s.
- Scrum is not a process or technique for creating a product, rather it is a framework within which different processes and techniques can be used.



Jeff Sutherland

Ken Schwaber

SCRUM



Daily meetings

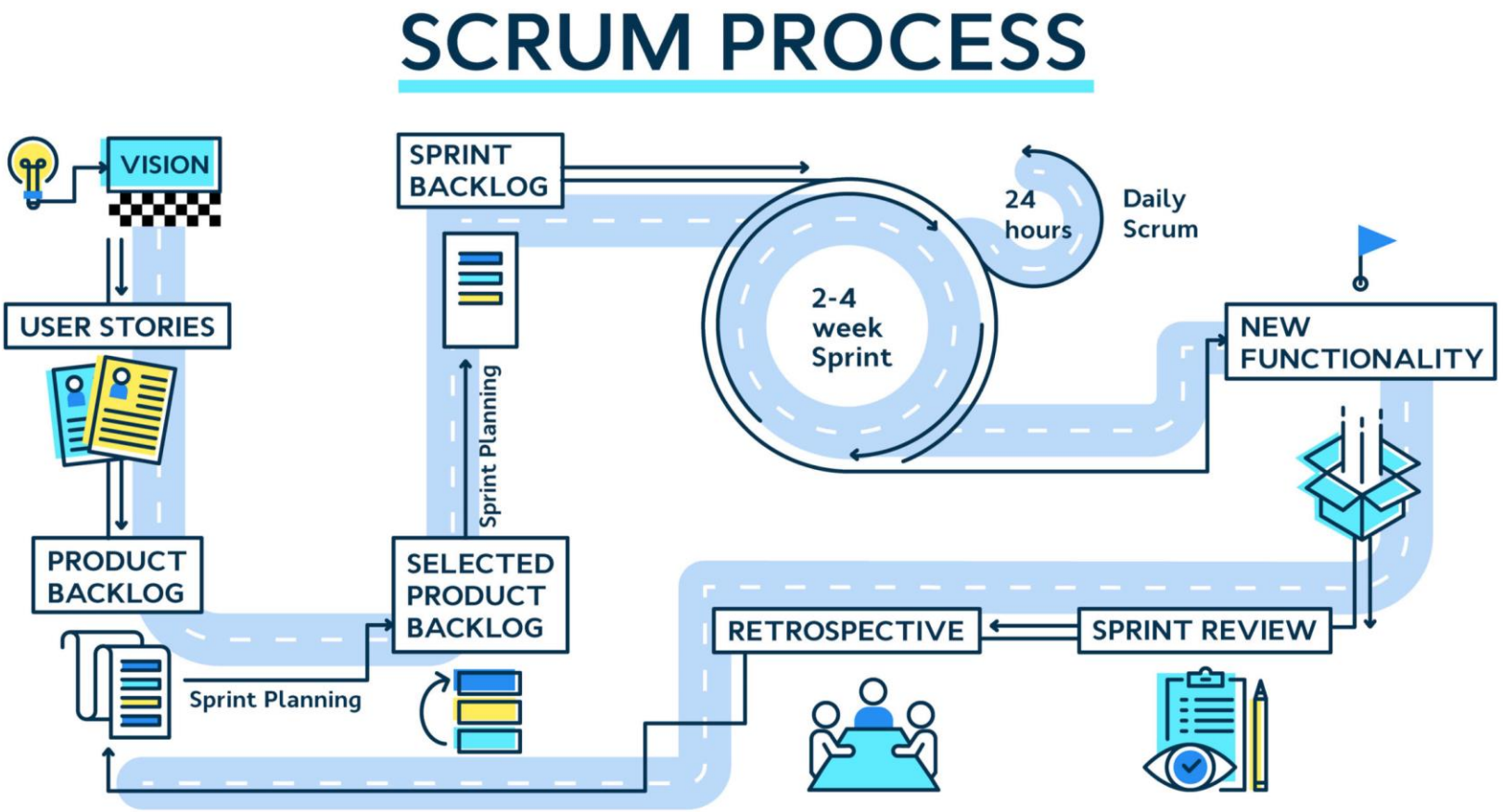
Daily meetings are a way to coordinate the efforts of the Scrum team members, quickly identify problems, and create transparency of the current situation.

The team gathers at the task board, and each member of the scrum team in turn answers 3 questions:

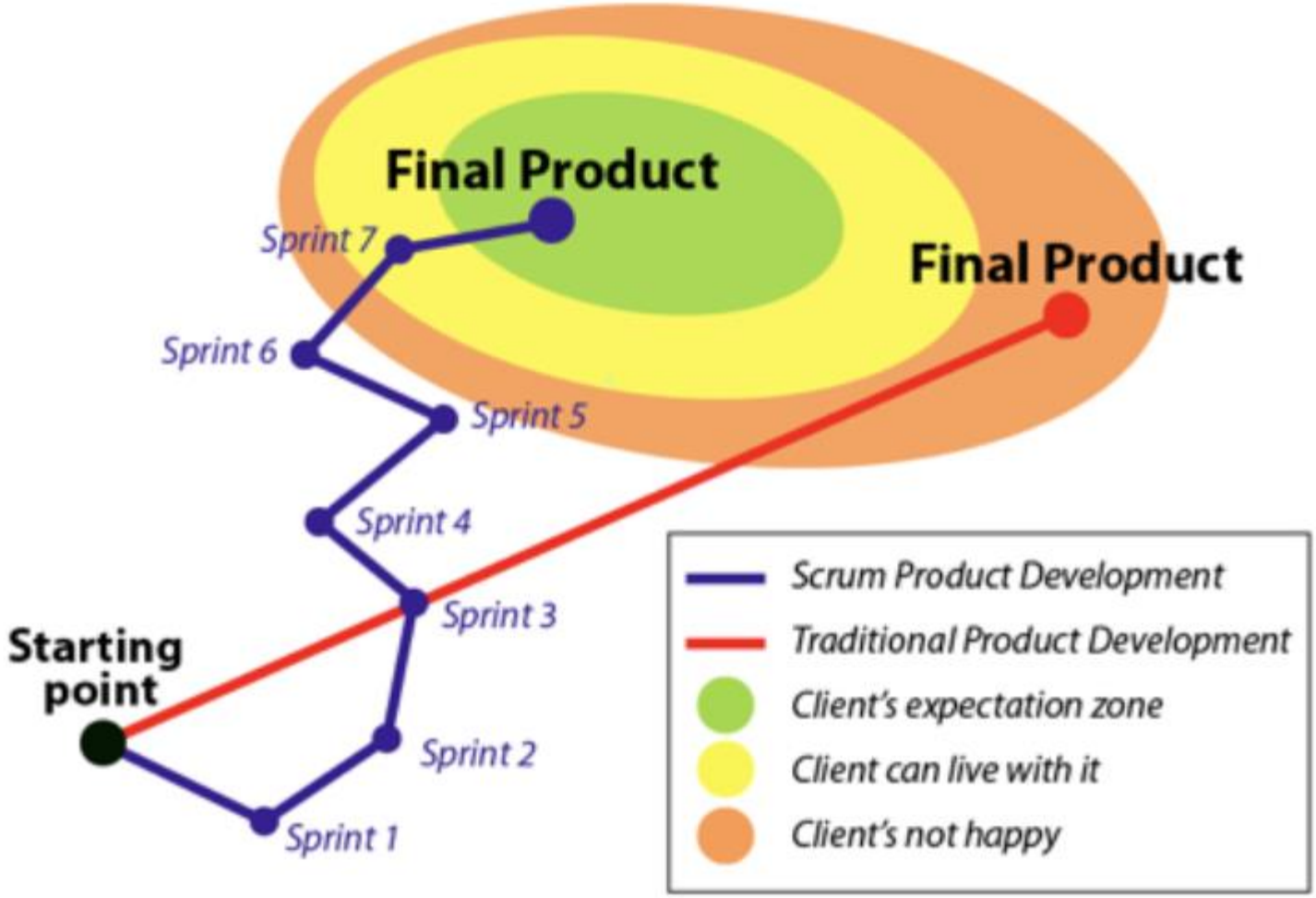
- What did I do yesterday?
- What will I do today?
- What slows me down and prevents me from moving forward?

Time is strictly limited - no more than 15 minutes, so at this meeting the team **only identifies problems**. The search for a solution is outside the scope of this meeting.

SCRUM metodology



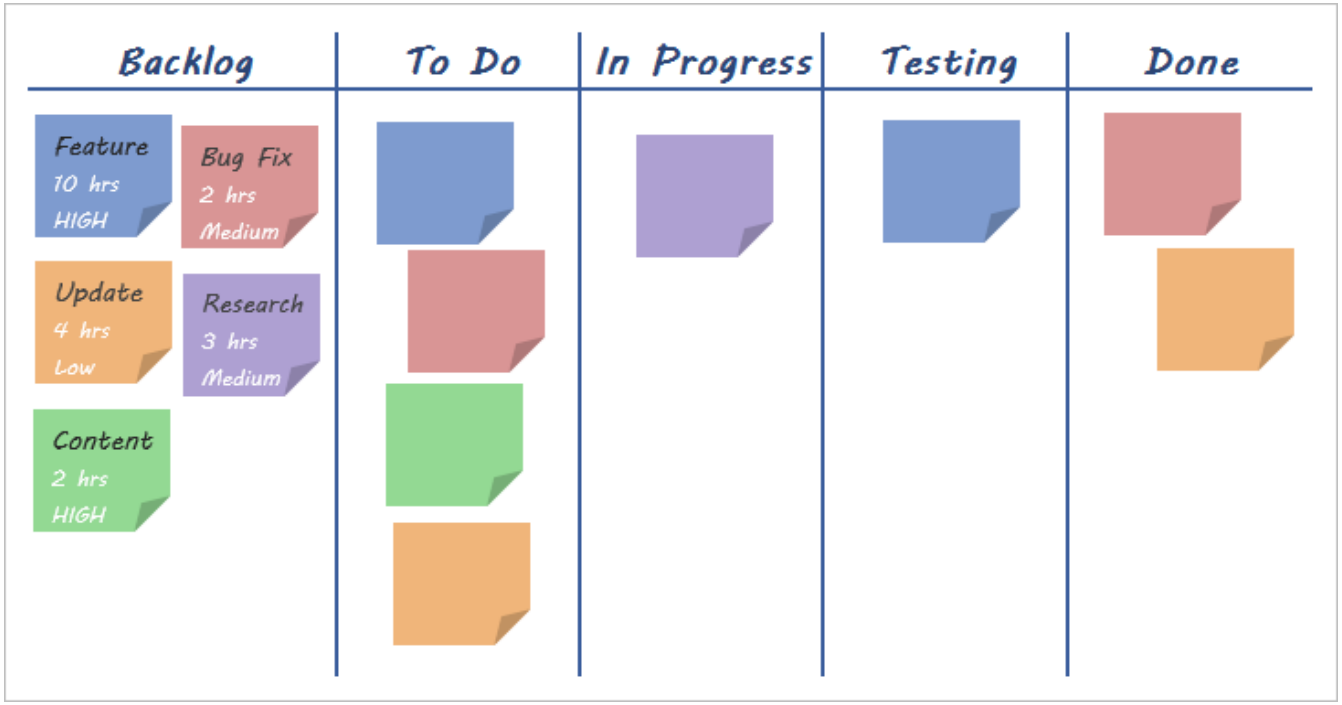
Waterfall vs SCRUM



KANBAN = VISUALIZATION

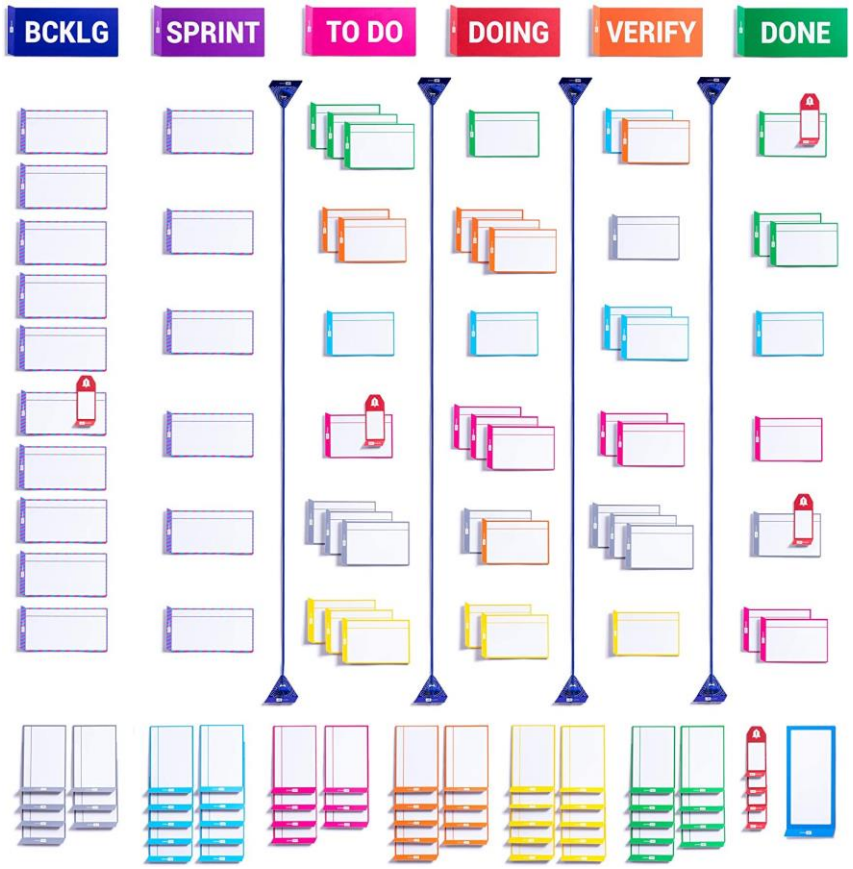
KANBAN

1. Visualize the manufacturing process
2. Limit the number of Work In Progress (WIP)
3. Optimize your process

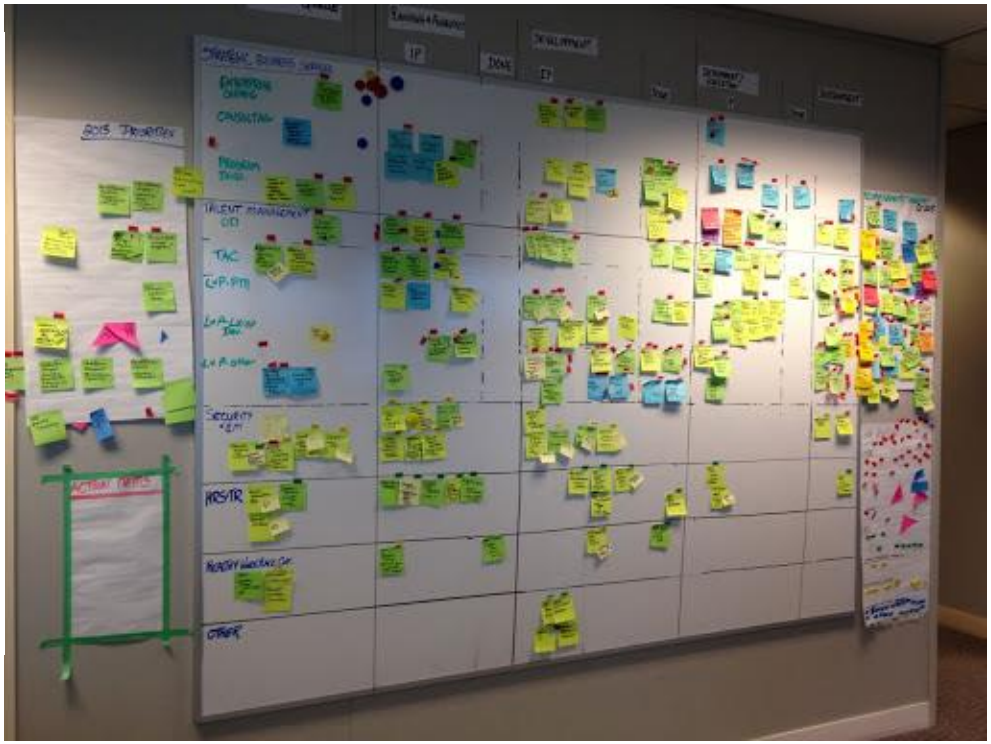


Kanban values

1. transparency,
2. balance,
3. cooperation,
4. customer focus,
5. flow,
6. leadership,
7. understanding,
8. agreement,
9. respect.



KANBAN



Some companies using Scrum and Kanban

NETFLIX

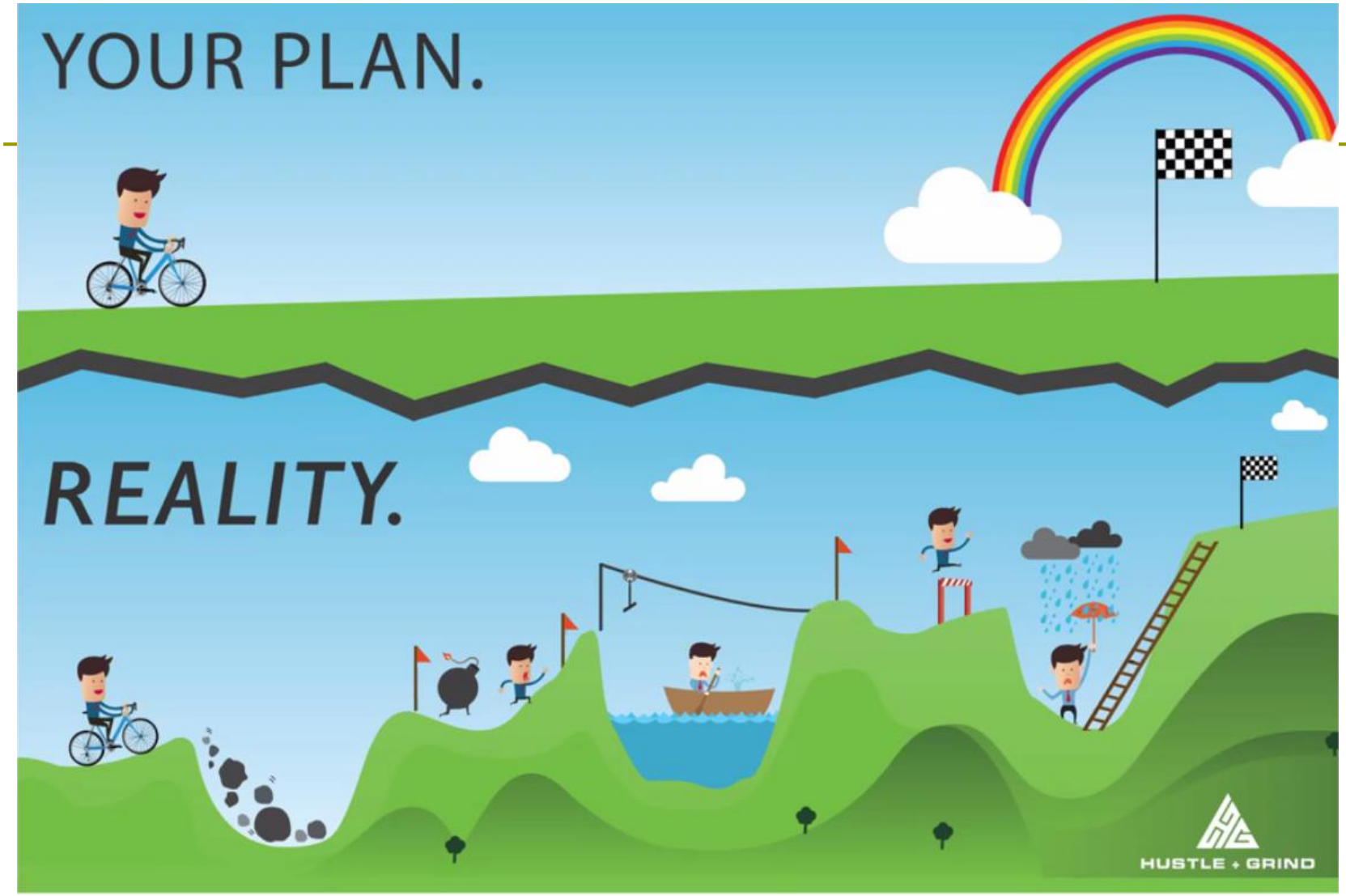
Spotify

ING

salesforce

hp

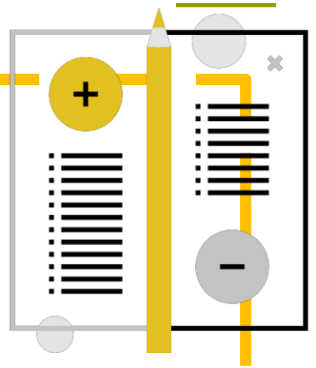
Polisen



Kanban and Scrum differences

Kanban	Scrum
No meetings	There are meetings
Need a starting point	Don't need a starting point
Narrow-profile teams can work	Cross-functional team only
Sequential and smooth changes	Dramatic changes
There is no division into roles in the team	The team is divided into roles

Some Disadvantages of Scrum/ Agile

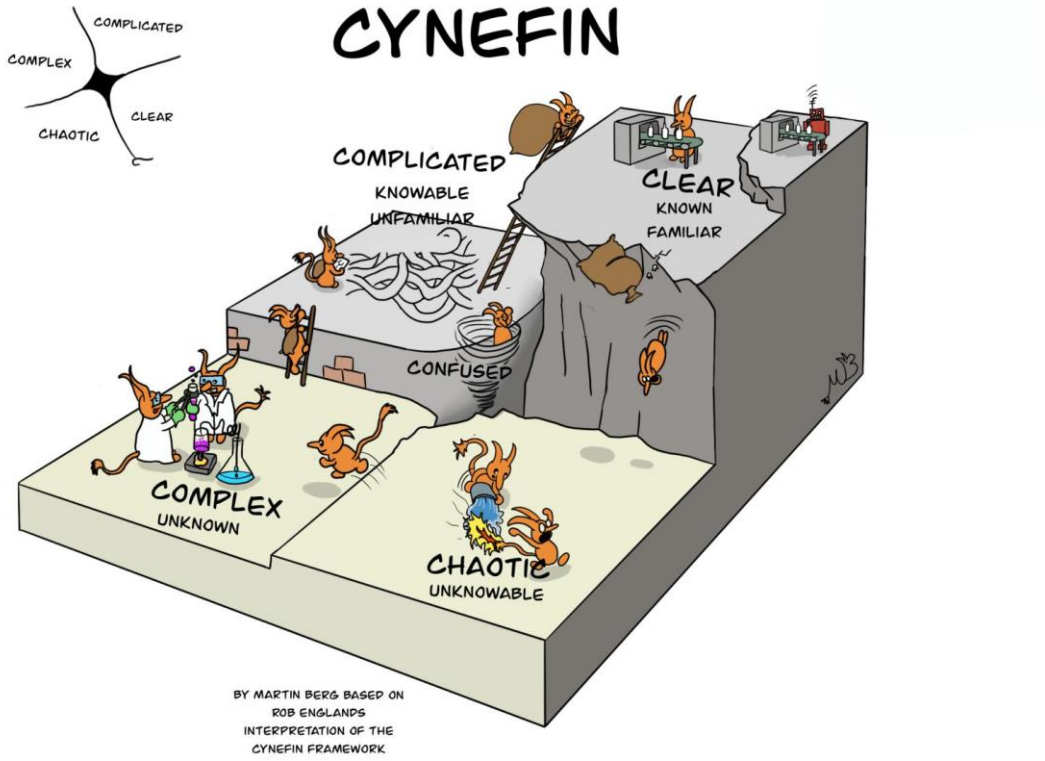


- Customer Involvement
- Requirements are formed with a sufficient minimum
- Higher costs
- Unable to set clear project end dates
- Team self-organization skills are required
- Difficulty working with split teams
- High costs for discussions and meetings and great loss of time at the sprint junction

So what is the best to use in project management?

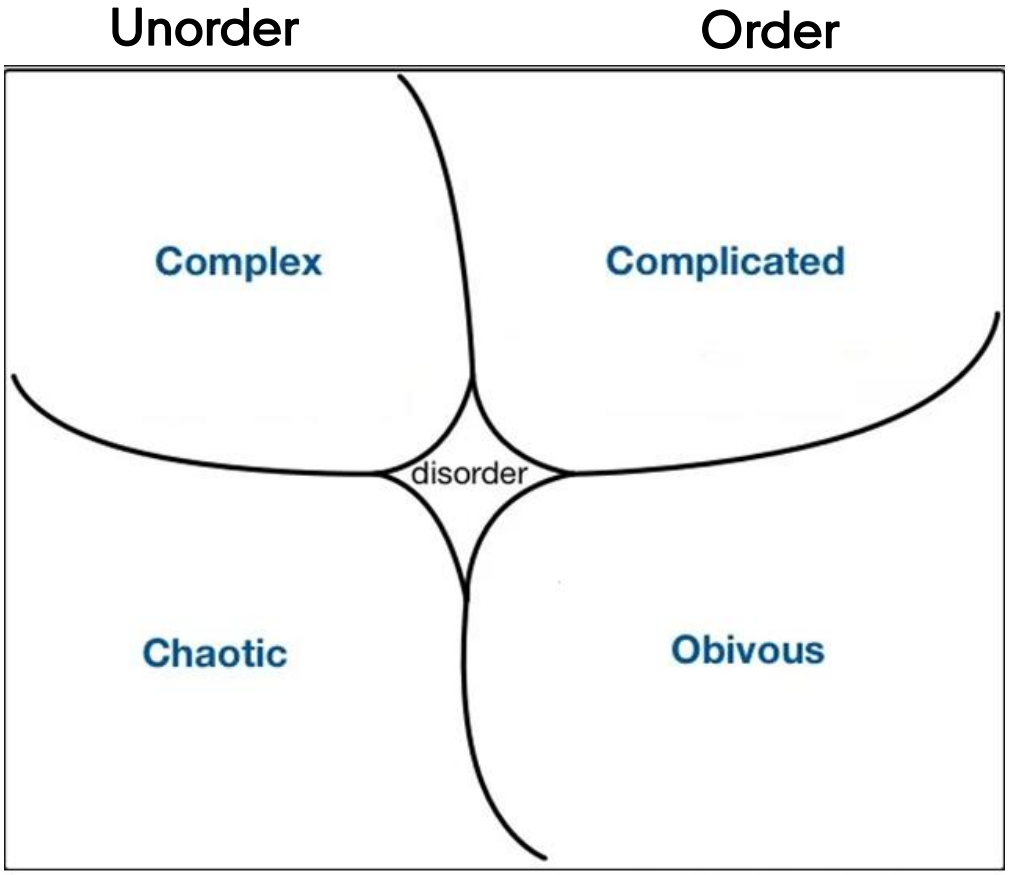
CYNEFIN framework

- Cynefin framework is a tool for understanding the type of environment in which a product or project exists in order to determine the most efficient development processes.



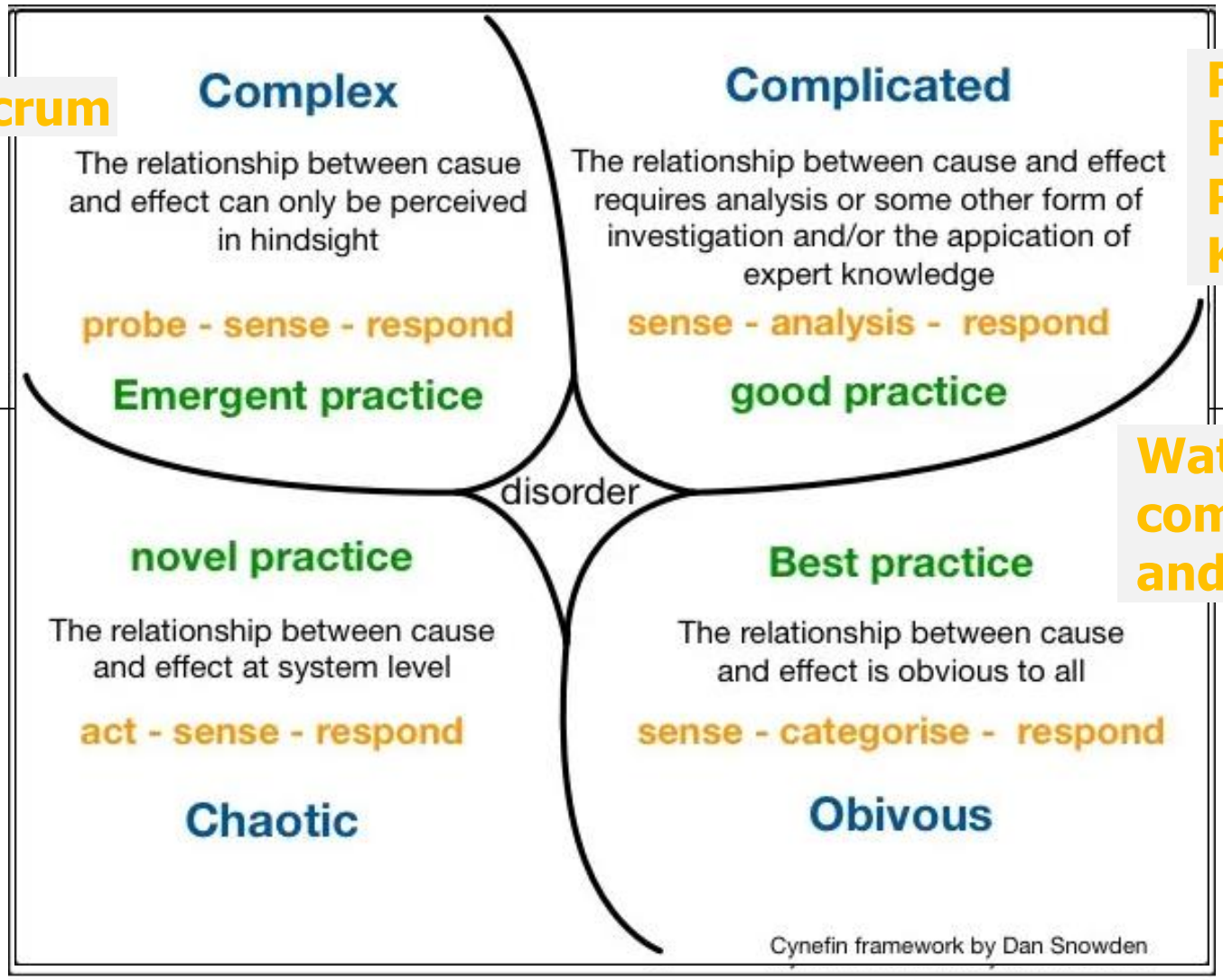
CYNEFIN framework

https://www.youtube.com/watch?v=N7oz366X0-8 ENG
https://youtu.be/rCLth07UAsA RU



The "CYNEFIN" model allows a company to determine in which system it exists, and therefore - to choose the correct management model that correlates with the **competence of the team**

CYNEFIN framework

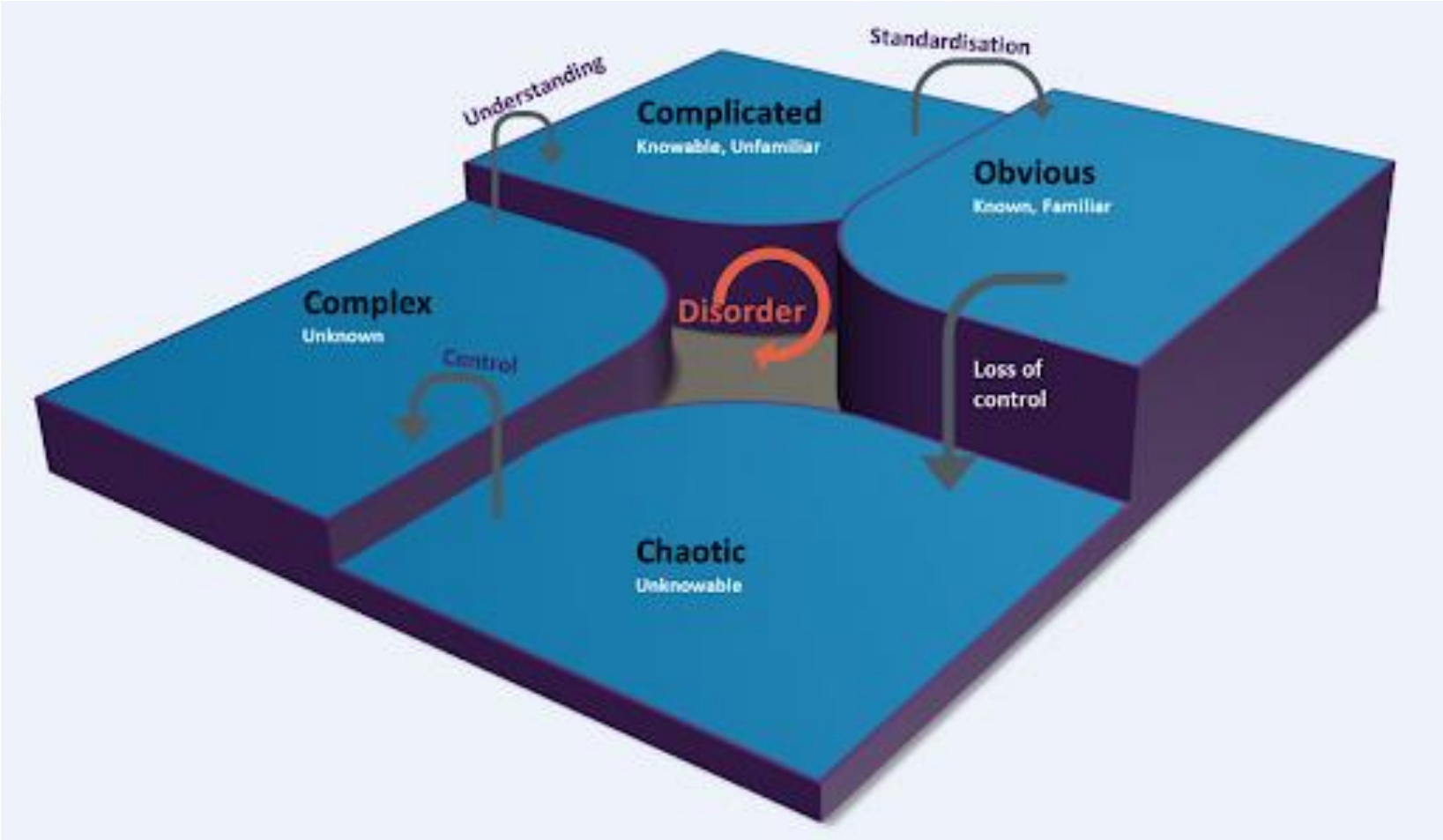


Scrum

PMI/ Prince/ PMBoK/ Kanban

Waterfall/ command and control

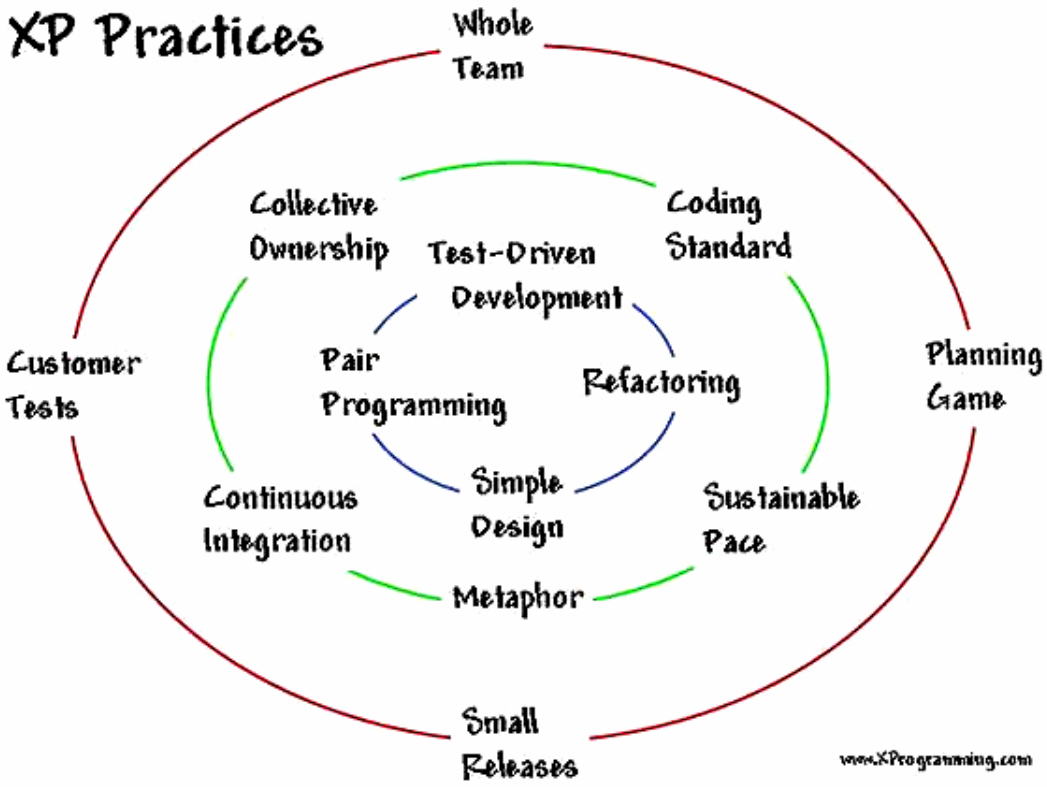
CYNEFIN framework



eXtreme Programming (XP)

- XP differs from other agile methodologies in that it is **only applicable to software development**.
- It cannot be used in other business or everyday life like scrum, kanban or lean.
- The **goal** of the XP methodology is to cope with the *ever-changing requirements* for a software product and *improve the quality of development*. Therefore XP is well suited for complex and uncertain projects.

eXtreme Programming (XP)



XP advantages and disadvantages

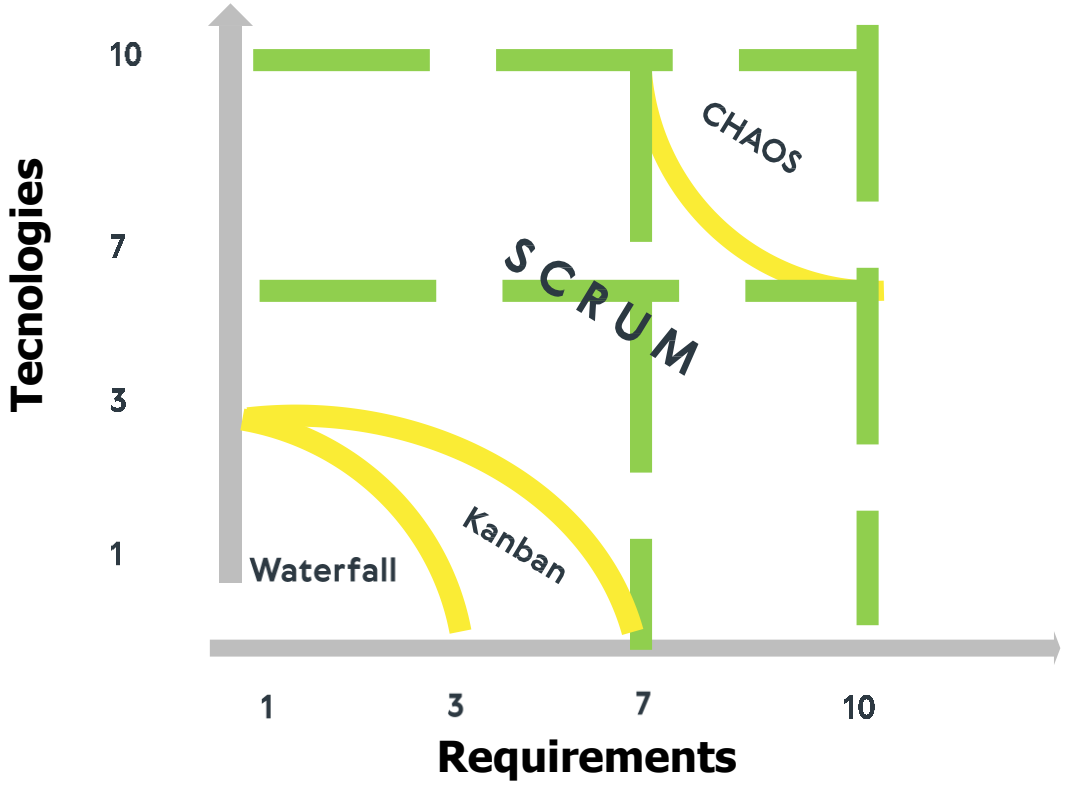
Advantages

- the customer receives exactly the product that he needs, even if at the beginning of development he himself does not accurately represent its final appearance
- the team quickly makes changes to the code and adds new functionality through simple code design, frequent scheduling and releases
- code always works through continuous testing and continuous integration
- the team easily maintains the code, because it is written according to a single standard and is constantly refactored
- fast pace of development due to pair programming, no rework, customer presence in the team
- high quality code
- the risks associated with the development are reduced, since responsibility for the project is distributed evenly and the departure / arrival of a team member will not disrupt the process
- development costs are lower because the team is focused on code, not documentation and assemblies

Disadvantages

- project success depends on customer involvement, which is not easy to achieve
- it is difficult to predict the time spent on the project, because at the beginning no one knows the complete list of requirements
- XP success is highly dependent on the level of programmers, the methodology works only with senior specialists
- management has a negative attitude towards pair programming, not understanding why it should pay two programmers instead of one
- regular meetings with programmers are expensive for customers
- requires too much cultural change not to control every task due to lack of structure and documentation is not suitable for large projects
- since Agile methodologies functionally oriented, non-functional requirements for product quality are difficult to describe in the form of user stories.

Which methodology to choose?



Summary

- **WATERFALL** is a classic waterfall approach to project management. The project implementation process looks like a flow that successively goes through 4 phases - initiating, planning, implementation and closure.
- **AGILE** is a nimble project management methodology that allows a huge project to be "split" into several small tasks to set the highest priorities.
- **KANBAN** is a development management method that implements the principle of "just in time" and promotes an even distribution of workload among employees. You cannot take on the next task until you have finished working on the previous one.

Summary

- **SCRUM** is a project management method in which the product is not fully developed at once, but in small parts that are ready for release.
- **FRAMEWORK** is a set of ready-made solutions and components aimed at facilitating the development of products / services.
- **SPRINT** is an iteration (time interval) in Scrum, during which one of the stages of the project develops. Fixed time. The duration of one sprint is from 2 to 4 weeks.

Thank you for attention!