Project Management Course
Serious Game
2020-2021

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Program

Day 1
- **Session 1**
  - 1. Introduction
  - 2. Project Management Overview
  - 3. Project Initiation 1/2
    - Theory

- **Session 2**
  - 3. Project Initiation 2/2
    - Practice: Initiation phase on the simulation

Day 2
- **Session 3**
  - 4. Project Planning 1/3
    - Theory
    - Practice: Project Management Simulation
- **Session 4**
  - 4. Project Planning 2/3
    - Practice: Following planning phase on the simulation
      - Deliverable: Gantt chart (on the game)
      - Deliverable: BAC Calculation table
    - Practice: Steering committee – presentation and debriefing
      - Deliverable: Powerpoint presentation

Program

Day 3
- **Session 5**
  - 4. Project Planning 3/3
    - Practice: Following planning phase on the simulation
      - Deliverable: Critical Chain analysis
      - Deliverable: Critical Path diagram
    - Practice: Steering committee – presentation and debriefing
      - Deliverable: Powerpoint presentation
- **Session 6**
  - 5. Project Execution 1/2
    - Theory
    - Practice: Project Management Simulation
    - Practice: Steering committee – presentation and debriefing
      - Deliverable: Powerpoint presentation
    - Exam: Closure: Preparing the lessons learned presentation

Day 4
- **Session 7**
  - 5. Project Execution 2/2
    - Practice: Following execution phase on the simulation
    - Exam: Closure: Preparing the lessons learned presentation
- **Session 8**
  - Synthesis
    - Exam: Lessons learned presentation
      - Deliverable: Powerpoint presentation
  - Course debriefing

Presentation Plan

1. What problems we've faced?

2. What was the consequences ?

3. What was the causes?

4. What was the solutions?

5. What lessons we've learned in this game / in this course?

1 Introduction

« Tell me and I forget,

Teach me and I remember,

 Involve me and I learn. »

Benjamin Franklin

(1706 – 1790, President of Pennsylvania state)

« La connaissance s'acquiert par l'expérience,
tout le reste n'est que de l'information »

Education pour une pensée libre

Albert Einstein

Cone of Learning (Edgar Dale)

After 2 weeks we tend to remember...

10% of what we READ	READING	Verbal Receiving	
20% of what we HEAR	HEARING WORDS		PASSIVE
30% of what we SEE	LOOKING AT PICTURES		
50% of what we HEAR and SEE	WATCHING A MOVIE	Visual Receiving	
	LOOKING AT AN EXHIBIT		
	WATCHING A DEMONSTRATION		
	SEEING IT DONE ON LOCATION		
70% of what we SAY	PARTICIPATING IN A DISCUSSION	Receiving / Participating	ACTIVE
	GIVING A TALK		
90% of what we both SAY and DO	DOING A DRAMATIC PRESENTATION	Doing	
	SIMULATING THE REAL EXPERIENCE		
	DOING THE REAL THING		

Edgar Dale, Audio-Visual Methods in Technology, Holt, Rinehart and Winston.

What is a Serious Game?

A **Serious Game** is a software which combines serious and enjoying objectives.

Here the educational aspect is targeted. Serious game's vocation is to transform the serious dimension throughout a form, an interaction, rules and enjoying objectives.

The idea is to learn through play and understand through experience, in order to improve significantly the participants involment rate and consequently the training success rate.

What are we going to play?

"Project Management Game"

… developped by **heig-vd**

School of Business

and Engineering Vaud (Switzerland)

Caracteristics
- Web-based
- Exhaustive
- Interactive
- Customizable

References

Academic References

Corporate References

Goals

- To learn throught the game aiming to consencuently increase students involvement rate and so the course efficiency

- To understand by experience

- To make the Project Management theoric notions to be applied

Goals are NOT

- To sign the attendance sheet

- To pass the time

- To waste time

- To look at your emails or smartphones

- To do something else

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I need your concentration…
You need your concentration!

Concentration is the secret of strength.
~ Ralph Waldo Emerson

http://photoquoto.com

2 Project Management Overview

Definitions

- ## Project

A sequence of unique, complex and connected activities, having one goal and that must be completed by a specific time, within budget and according to specifications.
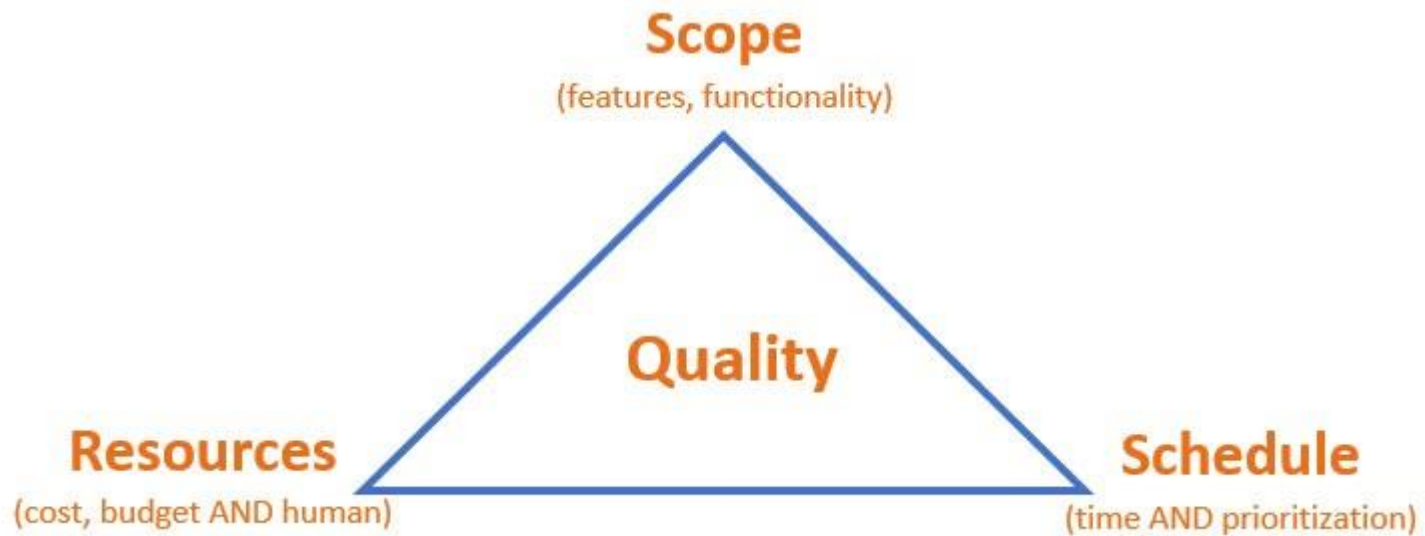[Wysocki]

- ## Project management

Application of knowledge, skills, tools and techniques to project activities to meet project requirements.
[PMBOK]

Scope
(features, functionality)

Quality

Resources
(cost, budget AND human)

Schedule
(time AND prioritization)

Definitions

- Project versus Operation

Project	Operation
Temporary	Ongoing
Unique	Repetitive
Closes after attaining the objectives	Objective is to sustain business
Prototyping the new car model	Assembly line production

Introduction

- ## Management & organization
  - Hierarchy
  - Communication
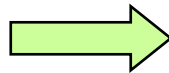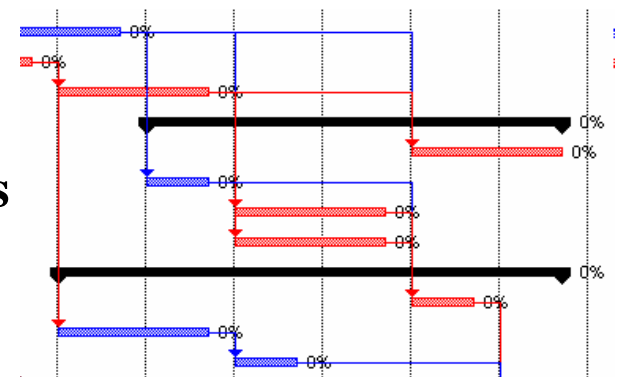 - Conflict management
  - …
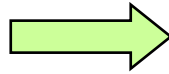
Soft skills

- ## Tools and techniques
  - Pert
  - Gantt
 - Risk management

Hard skills

- **Project manager**

Roles :

- Global responsibility of the project
- Achievement of the objectives of the project while mastering the deadlines and the costs
- Coordination of the actions of the members of the project team
- Animation of the project team
- Internal and external communication
- Reporting to the steering committee and to the inhouse hierarchy
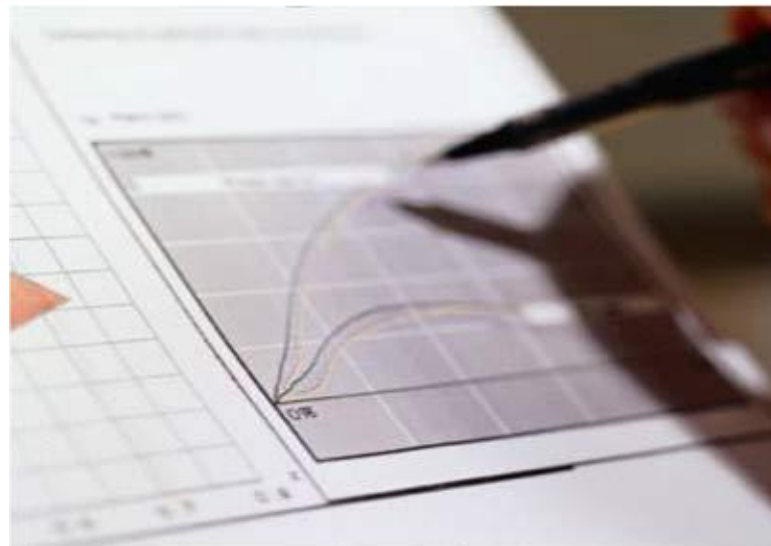- Respect for rules defined by the company regarding project management

Project life cycle - 5 process group (from PMP®)

- *Initiating*
- *Planning*
- *Executing*
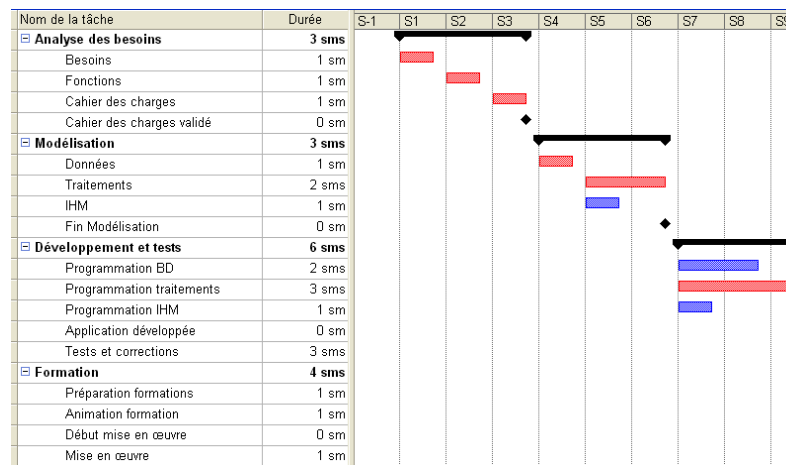- *Monitoring and Controlling*
- *Closing*
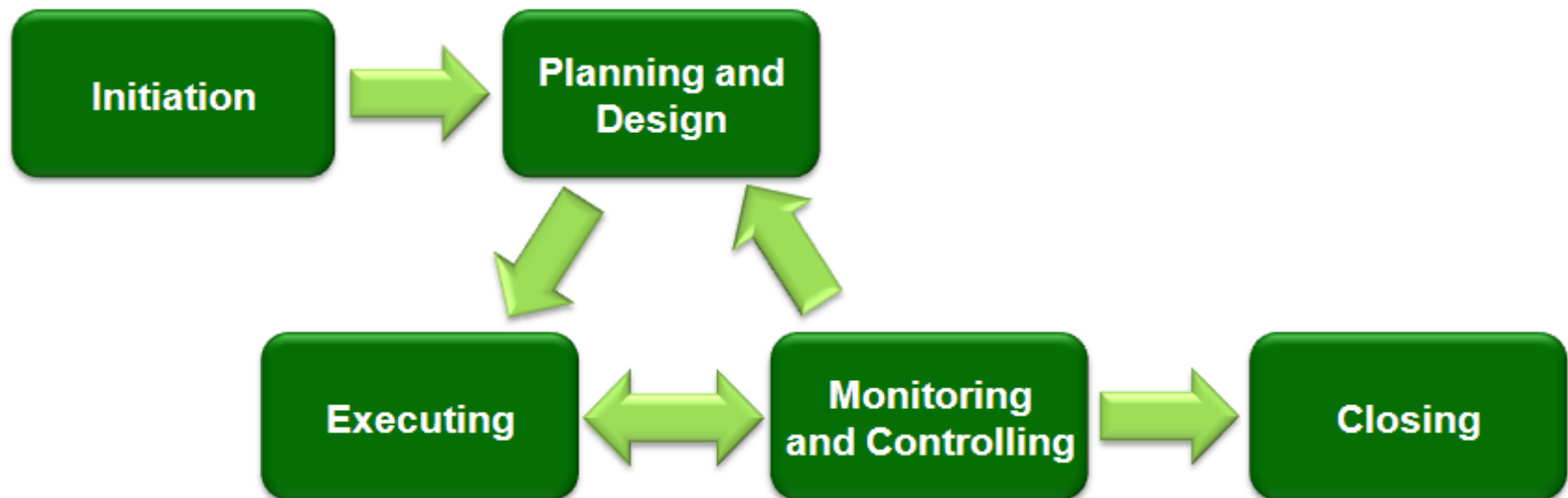
Initiating Objectives

- To define goals and scope
- To estimate resources, costs and schedule
- To estimate risks
- To identify benefits
- To define project organization

Planning Objectives

- Tasks identification
- Global planning
- Detailed costs and schedule
- To hire (key) resources
- To define organization

Nom de la tâche	Durée
⊟ **Analyse des besoins**	**3 sms**
Besoins	1 sm
Fonctions	1 sm
Cahier des charges	1 sm
Cahier des charges validé	0 sm
⊟ **Modélisation**	**3 sms**
Données	1 sm
Traitements	2 sms
IHM	1 sm
Fin Modélisation	0 sm
⊟ **Développement et tests**	**6 sms**
Programmation BD	2 sms
Programmation traitements	3 sms
Programmation IHM	1 sm
Application développée	0 sm
Tests et corrections	3 sms
⊟ **Formation**	**4 sms**
Préparation formations	1 sm
Animation formation	1 sm
Début mise en œuvre	0 sm
Mise en œuvre	1 sm

« Winners spend more than twice as many ressources on pre-development activities as did loosers »
Bonak 1994

Executing Objectives

Execute the Planning …

- Executing the work
- Monitoring cost, schedule, quality
- Controling when needed
- Managing changes
- Solving problems
- PDCA

Closing Objectives

Improve future projects ...

- To analyze results, compare with planning
- To evaluate project execution (KPI, EVM)
- To identify lessons learned
- To share lessons learned
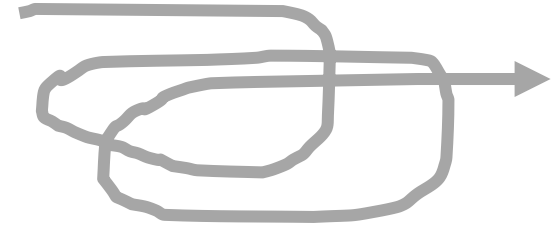
Waterfall model

- Principles
  - sequencial design
  - progress flow steadily through Initiation, Planning, Execution :
    - Requirement, analysis, design, coding/implementation, testing, production, maintenance
  - precise deliverable for each phase
  - gated-step approach

- Advantages, disadvantages?

- Example: V-MODEL

Waterfall model
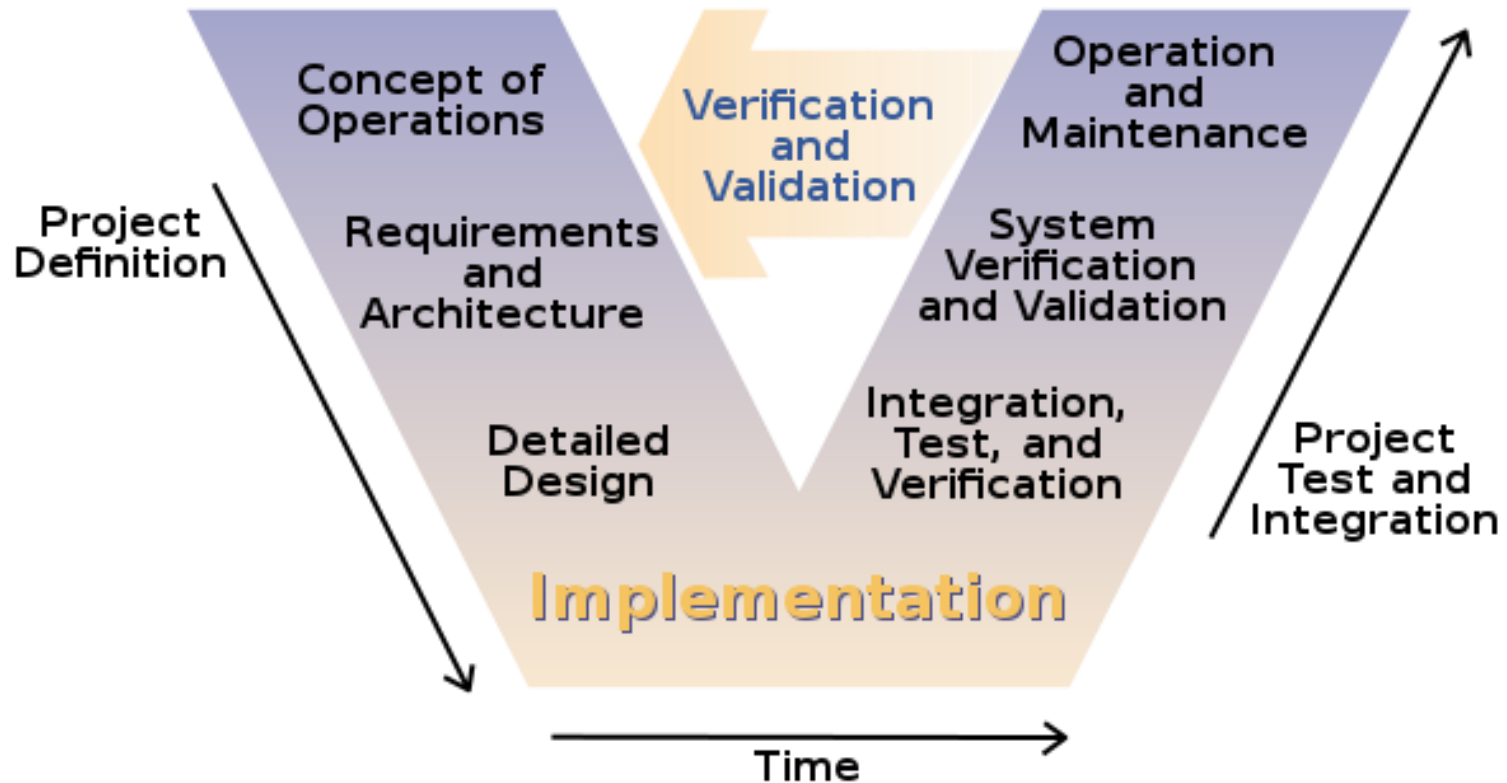
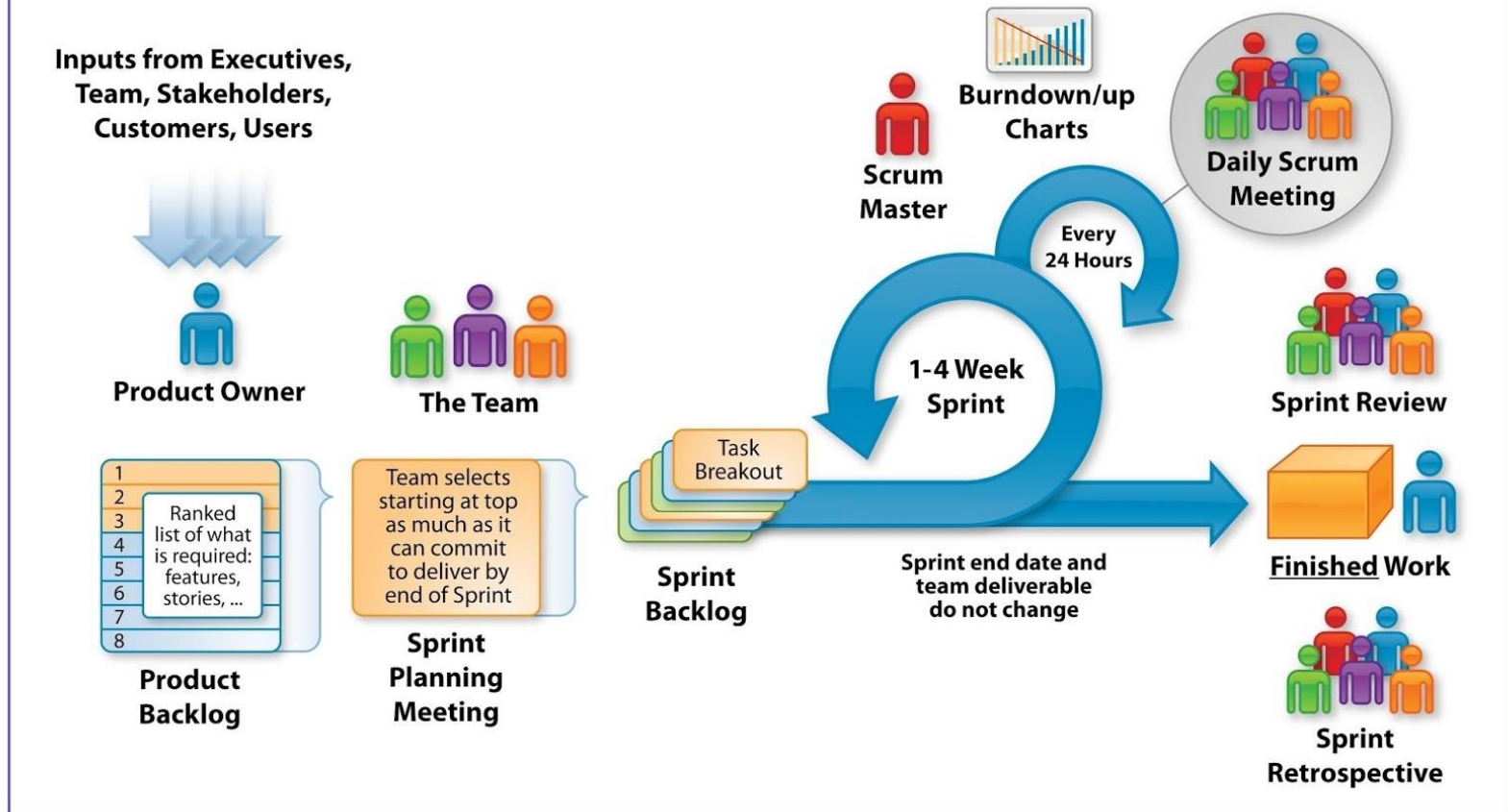- Example: V-MODEL

Iterative model

- Principles
  - repeated cycle (iteration)
  - learned from precedent iterations
  - adapt design, functionnalities

- Advantages, disadvantages?

- Example: AGILE

The Agile - Scrum Framework

- Example: AGILE

Waterfall vs Iterative model

Waterfall

Requirements → Design → Development → Testing → Deployment

Big outcome at end

Agile

Req's → Design → Test → Develop → Deploy
Req's → Design → Test → Develop → Deploy
Req's → Design → Test → Develop → Deploy

Cumulative outcomes
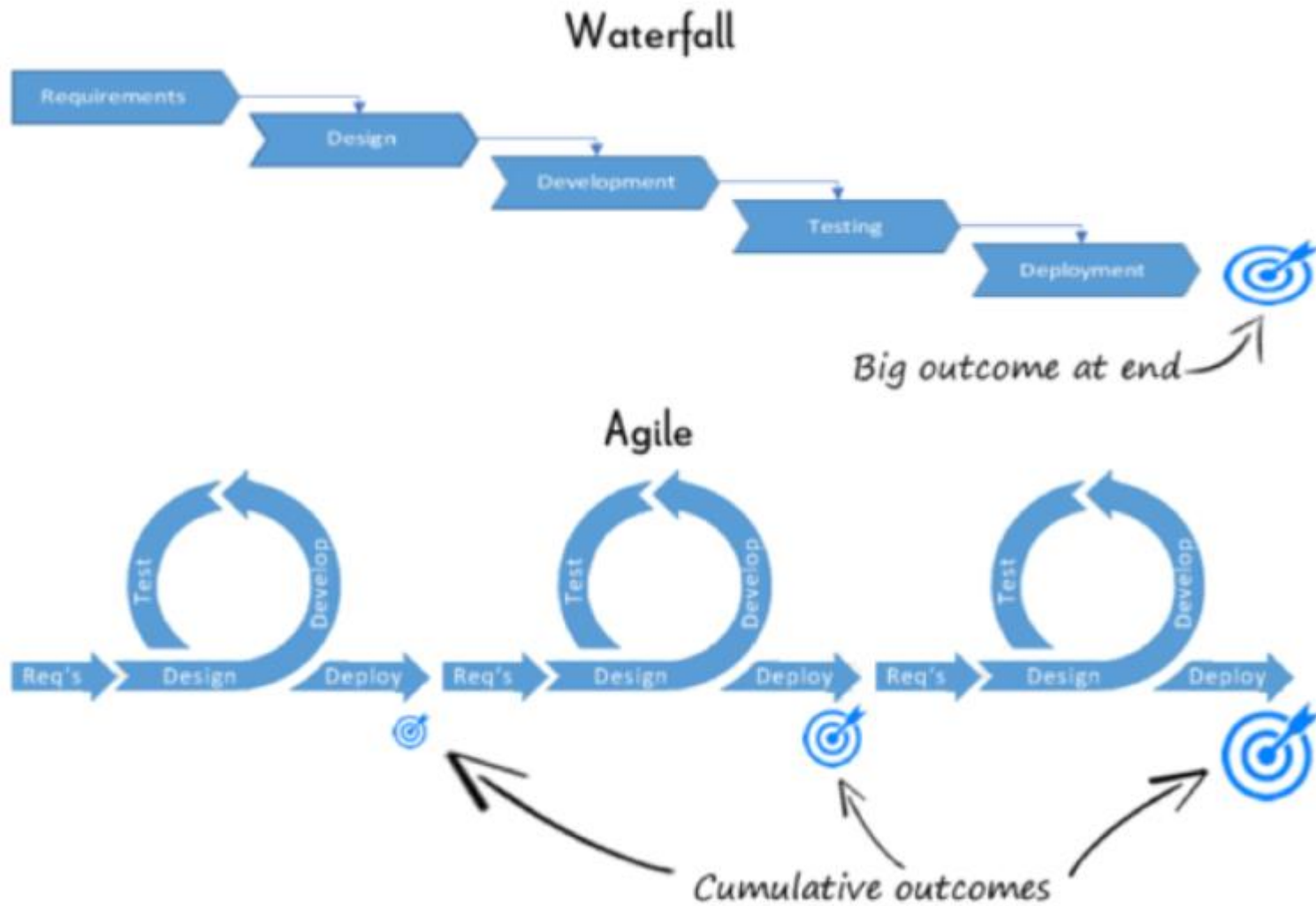
Waterfall vs Agile model

Agile Model	Waterfall Model
1. Agile method proposes incremental and iterative approach to software design	Development of the software flows sequentially from start point to end point.
2. The agile process is broken into individual models that designers work on	The design process is not broken into an individual models
3. It is unstructured model compared to the waterfall model	Waterfall model are more secure because they are so plan oriented
4. The customer has early and frequent opportunities to look at the product and make decision and changes to the project	The customer can only see the product at the end of the project
5. Error can be fixed in the middle of the project.	Only at the end, the whole product is tested. If the requirement error is found or any changes have to be made, the project has to start from the beginning
6. Small projects can be implemented very quickly. For large projects, it is difficult to estimate the development time	All sorts of project can be estimated and completed.
7. Documentation attends less priority than software development	Documentation is a top priority and can even use for training staff and upgrade the software with another team
8. Development process is iterative, and the project is executed in short (2-4) weeks iterations. Planning is very less.	The development process is phased, and the phase is much bigger than iteration. Every phase ends with the detailed description of the next phase
9. Testers and developers work together	Testers work separately from developers
10. At the end of every sprint, user acceptance is performed	User acceptance is performed at the end of the project.
11. It requires close communication with developers and together analyse requirements and planning	Developer does not involve in requirement and planning process. Usually, time delays between tests and coding

3 Project Initiation

Objectives

- To define goals and scope
- To estimate resources, costs and schedule
- To estimate risks
- To identify benefits
- To define project organization
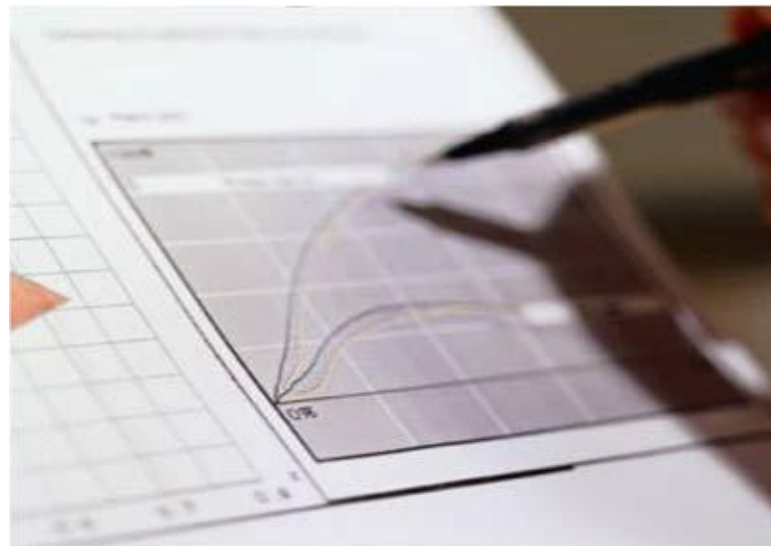
Cost – Time – Quality

Security Margins

- We must take SECURITY MARGINS

To know HOW to MANAGE TIME

→ *The 6 laws to know*

MURPHY Law: Every task takes more time that we've predicted.

PARETO Law: 80% of the results are produced by 20% of work done.

PARKINSON Law: The more we have time to execute a task, the more this task takes time.

LABORIT Law: To priorise the most difficult tasks at the beginning of the day, to optimise our energy.

ILLICH Law: Past a certain time on a task, our efficiency decrease and become negative.

CARLSON Law: A task realised continuously takes less time that a task realised in many times.

Security Margins

Risk Analysis →

Mitigation Plan:
- Argument 1
- Argument 2
- Argument 3
- Argument …
- Argument n

Best case - Optimistic

Worst case - Pesimistic

Deliverables Deadline

Description du projet

Nom du projet	

Type de projet	☐ interne ☐ externe *pour activer la case, double cliquer sur la case puis choisir «valeur par défaut / case activée ».*
Client(s)	*énoncé complet des clients (et des exploitants si nécessaire) du projet*

Contexte
Enoncé clair et succint de la situation actuelle, avec mise en évidence du problème à résoudre

Idée
Enoncé clair et succint de l'idée à réaliser

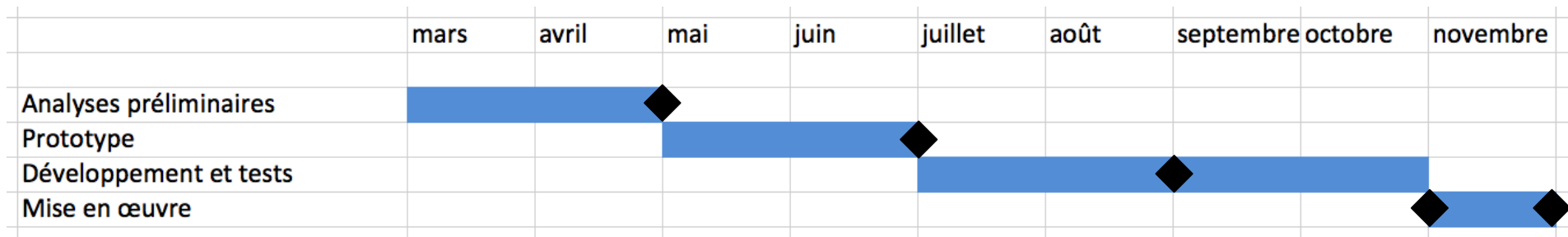# Objective: To get your project accepted and funded

Project proposal

Proposition and acceptance:

- Context

- Objectives

- Macro-planning

- Costs and benefits (ROI)

- Risks

- Success criteria

Project proposal

- Context
  - Objective description
    - Facts that lead to the project (status report)
    - No subjective aspects

- Objectives

- Macro-planning

	mars	avril	mai	juin	juillet	août	septembre	octobre	novembre
Analyses préliminaires									
Prototype									
Développement et tests									
Mise en œuvre									

- Costs and benefits (ROI)
  - Costs
    - direct costs and overhead
    - human resources
    - material
  - Benefits
    - financial
    - non financial

Project proposal

- Risks → Risk management
  - Identify risks
  - Evaluate
    - probability and impacts
  - Prioritize
    - low – high
  - Contingency planning (Plan risks responses)
    - avoid – minimize – accept

Project proposal

- Success criteria

What should be achieved in order to consider the project successful?

  - Should helps stakeholders to construct a shared view

  - Measurable
    - Not subjectives → KPI

  - Questions that may help
    - What does success looks like?
    - How do we know that the project is completed?
    - How will the project manager know if he/she has done a good job?

DANS CHAQUE ÉQUIPE DE PROJET
(ON A TOUS CONNU UN JOUR)

FAIT 99% DU BOULOT

N'A AUCUNE IDÉE DE CE QUI SE PASSE LA PLUPART DU TEMPS

DIT QU'IL VA AIDER MAIS NE FAIT RIEN

DISPARAIT AU TOUT DÉBUT ET NE RÉAPPARAIT QU'À LA FIN (LA VRAIE FIN)

@DAMIENGREUSARD

YOU are who you want to BE.

Program

Day 1
- **Session 1**
  - 1. Introduction
  - 2. Project Management Overview
  - 3. Project Initiation 1/2
    - Theory
    - Practice: Project proposition and acceptance
      - Deliverable: Project proposal report
- **Session 2**
  - 3. Project Initiation 2/2
    - Practice: Initiation phase on the simulation

Day 2
- **Session 3**
  - 4. Project Planning 1/3
    - Theory
    - Practice: Project Management Simulation
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      - Deliverable: Powerpoint presentation

Let's PLAY!

http://wegas.albasim.ch/#/public