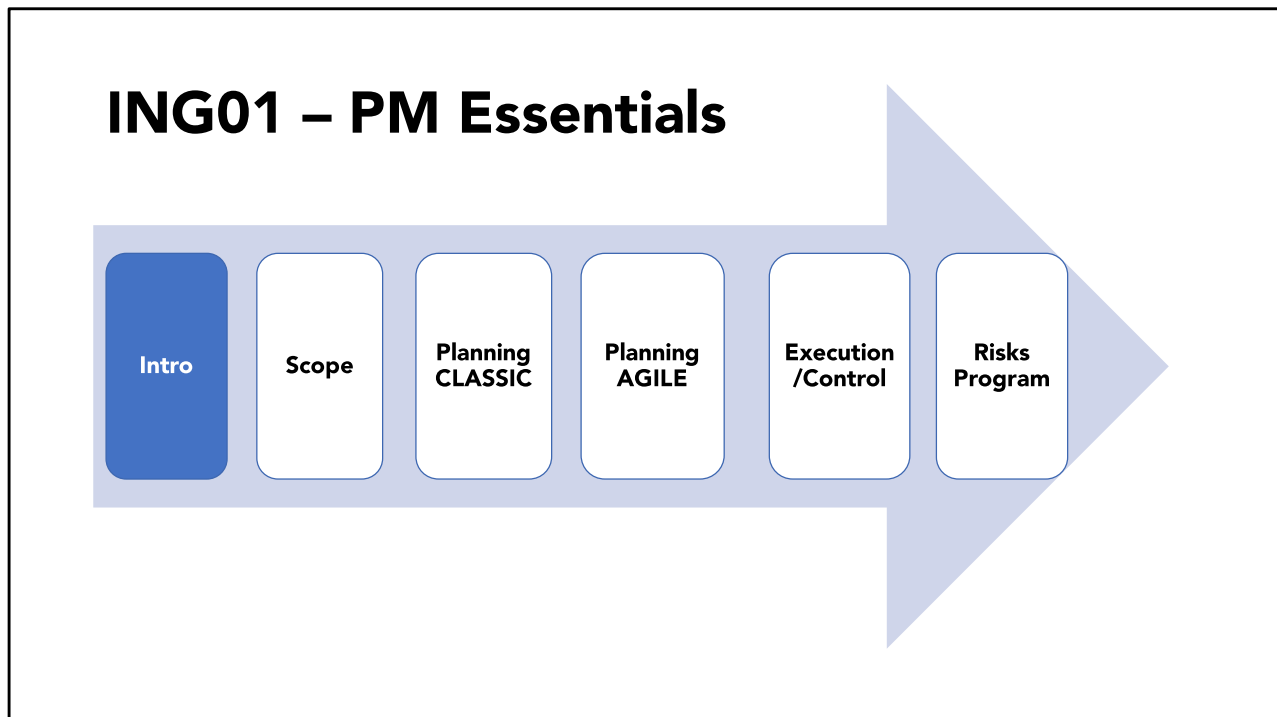




6 x Modules de 2h

English – Traduction des termes essentiels

PM Basics – Mix of Classic PM (PMI Style) with AGILE (SCRUM)

ING01 - PM Essentials

Intro: PM Fundamentals

In this module we will cover PM fundamentals:

1. Definitions
2. From Past to Present
3. Project-Life-Cycle
4. Iron Triangle
5. Classic method and...
6. AGILE Method : SCRUM

And we will try to understand the meaning of the Project where we just landed using the : Project Charter

What is a Project ?

A project is a **temporary endeavor undertaken to create a unique product, service or result.**

The temporary nature of projects indicates a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists.

Projects exist to bring about a product or service that hasn't existed before. In this sense, a project is unique. Unique means that this is new, this has never been done before. Maybe it's been done in a very similar fashion before but never exactly in this way.

A project is undertaken to fulfill **objectives** by producing **deliverables**

Projects drive change: state A → state B

Projects enable Business Value creation

**Un projet est une entreprise
temporaire initiée dans le
but de fournir un produit, un
service ou un résultat
unique.**

Example:

- **Bridge**
- **Railroad**
- **Apollo**
- **Vaccine**
- **Mobile App**
- **Web Site**

Project is not only used for software development or computer industry.

Since the earliest days of organized humanity, people have undertaken projects:

- 1) Prehistoric: Going hunting with the objective of obtaining meat for the humanity
- 2) Large Complex project: Pyramids, Great Wall of China, Cathedrals.

A project has distinctive attributes, which distinguish it from ongoing work or business operations. Projects are temporary in nature. They are not an everyday business process and have definitive start dates and end dates. This characteristic is important because a large part of the project effort is dedicated to ensuring that the project is completed at the appointed time. To do this, schedules are created showing when tasks should begin and end. Projects can last minutes, hours, days, weeks, months or years.

NOT a Project: Operations

In contrast with projects, operations are ongoing and repetitive. They involve work that is continuous **without an ending date** and you often repeat the same processes and produce the same results. The purpose of operations is to keep the organization functioning while the purpose of a project is to meet its goals and to conclude. Therefore, **operations are ongoing** while projects are unique and temporary.

Examples:

Car industry: New SUV is a project – Assembly line is NOT a project – it is Operations

Hardware maintenance : Operations

Project management: From past to present (Timeline)

Could the Great Wall of China, or Cathedrals, have been built without project management? It is possible to say that the concept of project management has been around since the beginning of history. It has enabled leaders to plan bold and massive projects and **manage funding, materials and labor within a designated time frame.**

Late 19th century: large scale government project like transcontinental railroad. Suddenly, business leaders found themselves faced with the task of organizing the manual labor of thousands of workers and the processing and assembly of unprecedented quantities of raw material.

Turn of 20th century: **Frederick Taylor** has applied scientific reasoning to work by showing that labor can be analyzed and improved by focusing on its elementary parts that introduced the concept of working more efficiently, rather than working harder and longer. Taylor's associate, Henry Gantt, studied in great detail the order of operations in work and is most famous for developing the **Gantt Chart in the 1910s.**

1939-1945 Manhattan Project: The Manhattan project was the codename given to the Allied effort to develop the first nuclear weapons during World War II. It involved over thirty different project sites in the US and Canada, and thousands of personnel

from US, Canada and UK. 130 000 people – 2 Billion USD.

1950s : Beginning of the modern Project Management era. Two mathematical project-scheduling models were developed:

The *Program Evaluation and Review Technique* or PERT, and The *Critical Path Method* (CPM).

1969: Foundation of PMI – 1984 PMP Certification – PMBOK 1987 – 2008 = 260 000 PMP certified PM

2000s : AGILE Methodology for Software Development : A new approach based on EMPIRISM and SMALL INCREMENTS....

Project Management

A pragmatic approach vs « Just do it »

Tools & Techniques to maximize project success.

Applying good project management discipline is the way to help reduce the risks. But keep in mind, having good project management skills does not mean you have no problems, it does not mean that risks go away, or that there won't be any surprises. The value of good project management is that you have standard processes in place to deal with all contingencies.

Project Management is the application of knowledge, skills, tools, and techniques applied to project activities in order to meet the project requirements. Project management is a process that includes planning, putting the project plan into action, and measuring progress and performance.

We will expose the concepts and propose a set of practices to apply to Student projects @EPITA but not only....

Le PM va utiliser un ensemble de techniques et de Best Practices qui vont l'aider à structurer le projet et à piloter son exécution,

Le but et les bénéfices de ces méthodes seront de faire arriver le projet à temps,

d'anticiper les dérives: **de maximiser la réussite du projet.**

Suivant la taille et la nature du projet, on utilisera une partie de ces techniques,

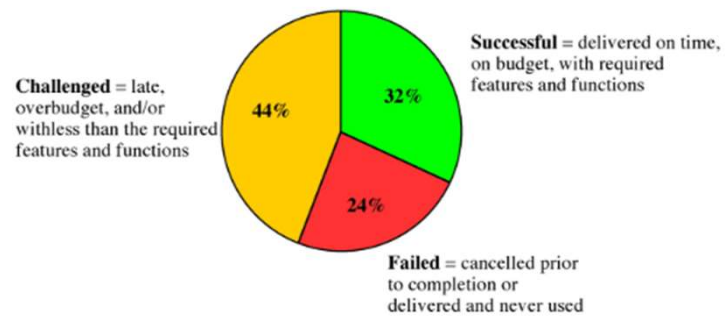
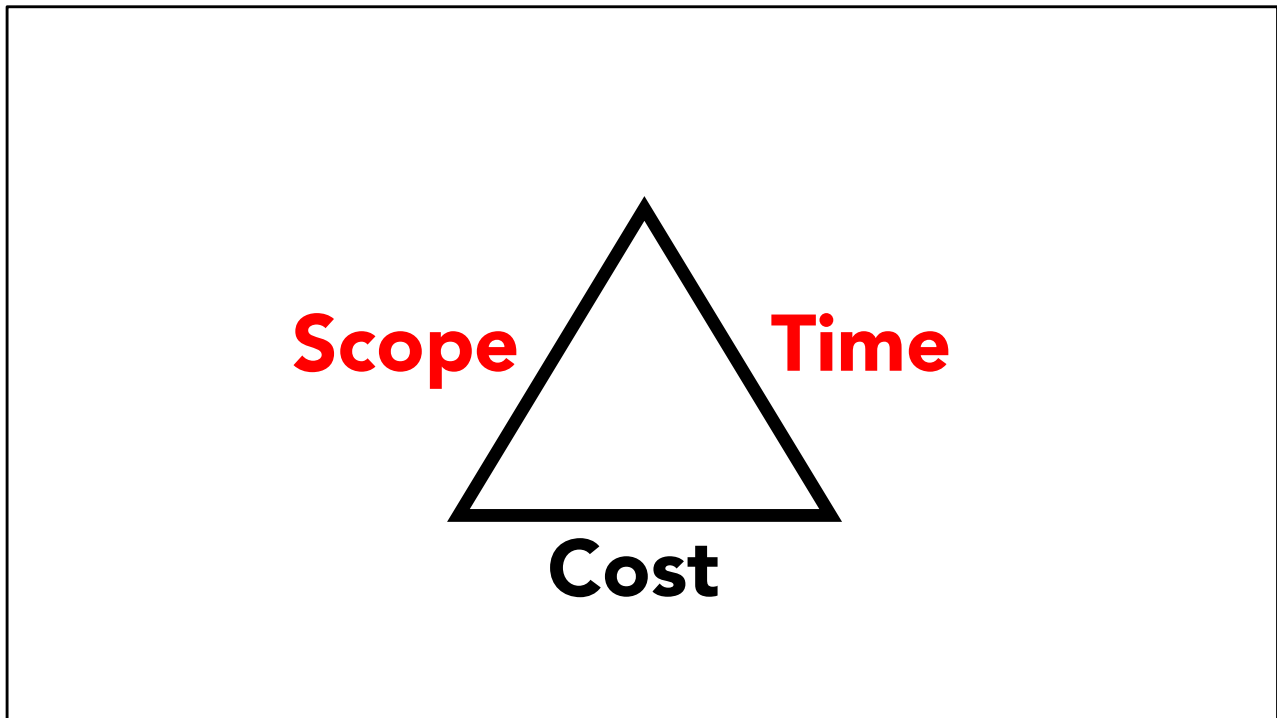


Figure 1. Summary of 2009 Standish Group CHAOS report.



3 essentials dimensions of Project management:

SCOPE: defines **WHAT?** = **the work that has to be performed**, what are the deliverables expected, **It also clarifies what is excluded** from the delivery.

TIME (Schedule): **WHEN?** = the time you have to execute your project, and when you must deliver what is expected (SCOPE)

COSTS : **HOW MUCH?** = The budget that can be spent to achieve the work defined in the SCOPE

Quality is often defined as the 4th constraint driving to an « Iron Square » model.

Project management **Processes and Tools** have all the same major goal: help the Project Manager to Balance within these 3 constraints.

Project Manager

PM is a central role, but very often « Accidental ». PM is responsible for meeting the project objectives

Some specialists are now learning PM @School and will undertake PM as a Career.

A lot of professionals will have to play this role at some stage of their professional path, and it is often unexpected, and untrained : Engineers, Managers, Salesforce, Medical Practitioners...

For small projects like students @EPITA, it can be a part-time role/job

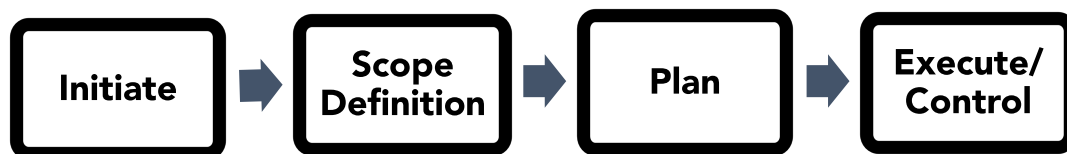
Parties prenantes Stakeholders

A project is successful when it achieves its objectives and meets or exceeds the expectations of the stakeholders. But who are the stakeholders? **Stakeholders are individuals who either care about or have a vested interest in your project.**

The project sponsor, generally an executive in the organization with the authority to assign resources and enforce decisions regarding the project, is a stakeholder. The customer, subcontractors, suppliers and sometimes even the Government are stakeholders. The project manager, project team members and the managers from other departments in the organization are stakeholders as well. It's important to identify all the stakeholders in your project upfront. If you leave out an important stakeholder or their department's function and don't discover the error until well into the project, it could be a project killer.

PM must clearly identify the Stakeholders and communicate to all of them in an appropriate manner.

Project life cycle:



We choose to present 4 MAJOR Phases:

Initiate : Define project objectives and main characteristics

Scope definition : Describe in details what is expected at the end of the project.

Planning : Plan project execution – Initially (Baseline) – With all dimensions : Time (When) Scope (How) Costs, Resources, Risks, Communication

Execution : Control execution, and when needed Re-scope, Re-plan... Verify good matching with objectives

Un projet se déroule en plusieurs phases:

Planifier est le plus gros du travail du PM, mais il faut aussi suivre l'exécution, contrôler l'avancement pour souvent revoir cette planification initiale.

Il faut aussi savoir clôturer : Faire accepter son projet par le client , en tirer des leçons

pour la suite ou pour un autre projet.

CLASSIC PREDICTIVE or AGILE ? **BOTH !**



Classic predictive or Agile planning process?

It has long been considered as a common practise in software development to use iterative methods in order to converge in successive cycles towards the customer's need by building the software in stages.

All current development tools take this "state of the art" into account and incorporate Sprint's concepts.

We will discuss then the SCRUM Method, the concept of Product backlog, and Sprint planning. However, it is necessary to elaborate an overview of the schedule to be able to deliver the expected product on time.

Tools and techniques picked up from each "world" will be used.

*Un processus de planification classique **prédictif ou itératif** ?*

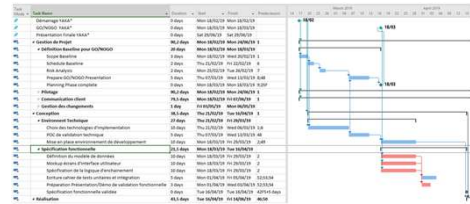
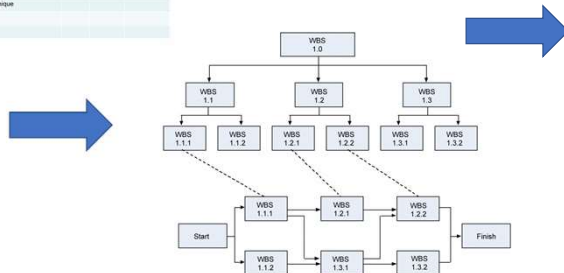
*Il est depuis longtemps considéré comme normal, dans le développement logiciel, d'utiliser des méthodes **itératives** afin de converger par cycles successifs vers le besoin du client en construisant le logiciel par étapes. Tous les outils de développement actuels prennent en compte cet « état de l'art » et intègrent les notions de Sprint. Nous aborderons la Méthode SCRUM, notion de Product backlog, et de Sprint planning.*

Pour autant, il faudra réfléchir à une vue d'ensemble du planning pour être capable de livrer le produit attendu dans les temps. On utilisera donc des outils et des techniques empruntées à chaque « monde ».

CLASSIC PREDICTIVE



#	Type	Description	Risk	Impact	Commentaire
F001	Fonctionnel	Un utilisateur peut demander la création d'une association	A	SC00X	
F002	Fonctionnel	L'interface doit proposer un accès au planning de réservation des salles	C	SC00Y	
F003	Fonctionnel	Une fonction de création automatique d'une association est proposée	R		
T001	Technique	La connexion au site de tous les utilisateurs doit se faire au travers du protocole HTTPS	A		
C001	Contrainte	Respect de la charte graphique			



With CLASSIC PREDICTIVE APPROACH:

- 1) We are confident that we know what should be the results of the project
- 2) That Requirements will vary only marginally
- 3) Every single task from beginning to end of the project is scheduled
- 4) There is a high level of understanding on how work will be performed

CLASSIC PREDICTIVE approach comes from BUILDING and MANUFACTURING

It shows a working product at 2/3 of the way

CLASSIC PREDICTIVE may include a Prototype or Pilot phase to secure requirement

Avec l'approche CLASSIQUE ou PREDICTIVE :

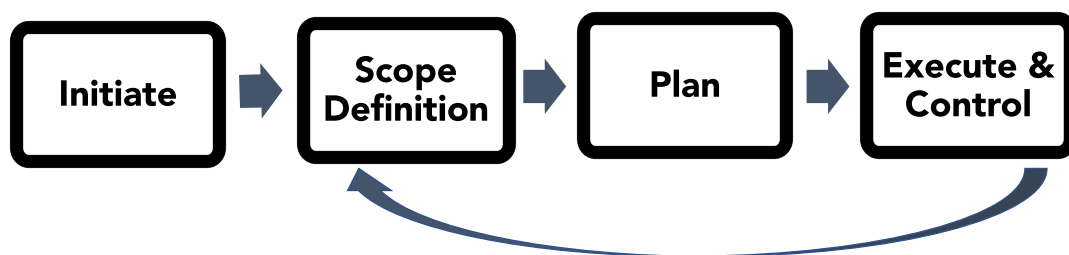
- 1) *Nous sommes persuadés que nous savons quels devraient être les résultats du projet*
- 2) *Que les exigences ne varieront que marginalement*
- 3) *Chaque tâche du début à la fin du projet est prévue*
- 4) *Nous avons un haut niveau de compréhension de la façon dont le travail sera effectué*

L'approche PREDICTIVE ou CLASSIQUE vient des métiers de la Construction et du Manufacturing

On est capable de présenter un produit au 2/3 du temps complet du projet

Cette Methode n'interdit pas d'inclure une phase prototype ou pilote pour confirmer les exigences.

Why AGILE ?



For SOFTWARE Development CHANGES ARE UNAVOIDABLE

- Technology, product, User interfaces are moving very fast. Risk to deliver an obsolete product
- Scope is difficult to define and requirements changes fast
- Drive by competitive landscape, business needs are evolving very

AGILE To the Rescue:
a new approach based on EMPIRISM and
SMALL INCREMENTS

AGILE Principles:

1. Satisfy the customer through early and continuous delivery of valuable Software
2. Welcome changing requirements, even late in development
3. Deliver Working Software Frequently (Weekly or Monthly) With Focus on Shorter Timescale
4. Business people and developers work together daily throughout the project
5. Build projects around motivated individuals
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of Success
8. AGILE process promotes sustainable Development
9. Continuous attention to technical excellence and good design enhances agility
10. Simplicity the art of maximizing the amount of work not done, is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams
12. At regular intervals, the team reflects on how to become more effective, and then tunes and adjusts its behavior accordingly.

SCRUM: <https://www.scrumguides.org/index.html>

Pour le SOFTWARE Development les changements sont inévitables

- *Technologie, produit, interfaces utilisateur bougent très vite. Risque important de livrer un produit obsolète*
- *La Périmètre du produit est difficile à définir et les exigences changent rapidement*
- *Dans un paysage concurrentiel fort, les besoins des entreprises évoluent vite.*

AGILE à la rescousse:

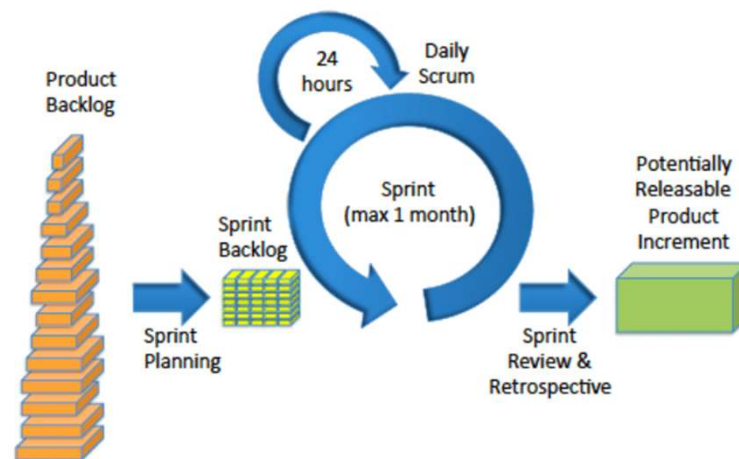
une nouvelle approche basée sur l' EMPIRISME et de PETITS INCREMENTS

Principes AGILE:

1. *Notre plus haute priorité est de satisfaire le client en livrant rapidement et régulièrement des fonctionnalités à grande valeur ajoutée.*
2. *Accueillez positivement les changements de besoins, même tard dans le projet.*
3. *Livrez fréquemment un logiciel fonctionnel, dans des cycles de quelques semaines à quelques mois, avec une préférence pour les plus courts.*
4. *Les utilisateurs ou leurs représentants et les développeurs doivent travailler ensemble quotidiennement tout au long du projet.*
5. *Réalisez les projets avec des personnes motivées. Fournissez-leur l'environnement et le soutien dont elles ont besoin et faites-leur confiance pour atteindre les objectifs fixés.*
6. *Privilégiez la co-location de toutes les personnes travaillant ensemble et le dialogue en face à face comme méthode de communication.*
7. *Un logiciel fonctionnel est la principale mesure de progression d'un projet.*

8. *Les processus agiles encouragent un rythme de développement soutenable. Ensemble, les commanditaires, les développeurs et les utilisateurs devraient être capables de maintenir indéfiniment un rythme constant.*
9. *Une attention continue à l'excellence technique et à un bon design.*
10. *La simplicité – c'est-à-dire l'art de minimiser la quantité de travail inutile – est essentielle.*
11. *Les meilleures architectures, spécifications et conceptions émergent d'équipes auto-organisées.*
12. *À intervalles réguliers, l'équipe réfléchit aux moyens possibles de devenir plus efficace. Puis elle s'adapte et modifie son fonctionnement en conséquence.*

AGILE: SCRUM



AGILE : Approach based on SCRUM: <https://www.scrumguides.org/index.html>

Risk Management

Identifying Risks and Prepare a strategy to apply IF they occur is also one important way of maximizing project success.

Communication

Communication with team, with customer, and basically with all stakeholders is where the Project manager spends most of his time.

It must be planned carefully in advance and organized to be efficient and adapted to every type of Stakeholder.

Communications management is about keeping everybody in the loop. The communications planning process concerns defining the types of information you will deliver, who will receive it, the format for communicating it, and the timing of its release and distribution.

Phase 1: Initiate

Understand the meaning of the project

The rationale of a project is with the Customer sponsors: Client , Head of Project Management, Product Owner

It is essential as a director you have knowledge of the ins and outs of the Project to which you contribute. It is up to you to look for this information which is the basis of your involvement.

For instance , we observe a lot of PFEs (Projet de fin d'étude) in difficulty, for lack of a well-identified meaning for their project. Or if the customer is not Clear enough, Project team shall have detected this situation from the beginning, and put in place, as far as possible, actions to remedy it.

Le rationnel d'un Projet est chez le commanditaire: Client , Responsable Maitrise d'ouvrage, Product Owner

Il est indispensable en tant que réalisateur vous ayez une connaissance des tenants et des aboutissants du Projet auquel vous contribuez . Il vous appartient de chercher cette information qui est la base de votre implication.

Par exemple , on observe pas mal de PFE en difficulté, faute d'avoir un sens bien identifié pour leur projet, ou si ce n'est pas le cas, d'avoir détecté dès le début cette

situation, et mettre en place dans la mesure du possible des actions pour y remédier.

Project Charter



Purpose of the Project Charter

This *Project Charter* outlines the purpose, objectives, and scope of the project.

The purpose of a Project Charter is:

- to provide an understanding of the project, the reason it is being conducted and its justification
- to establish early on in the project the general scope
- to establish the project manager and his or her authority level

Objective is unclear. You don't now what is expected from your work ?

Un objectif flou, et vous ne savez pas ce que l'on attend de vous ?

**Customer is driving, but
does not provide a clear
vision of the project.**

**Le client vous pilote sans
donner une vision claire du
projet.**

You can, and you **MUST
collect informations to build
the **PROJECT CHARTER****

**Vous avez le Droit et le Devoir
de collecter les informations
de compréhension du
PROJECT CHARTER**

Project Charter contents

- ✓ **Project Purpose**
- ✓ **Measurable project objectives and related success criteria**
- ✓ **High-level requirements**
- ✓ **High-level project description, boundaries, and key deliverables**
- ✓ **Summary milestone schedule**
- ✓ **Key stakeholder list**
- ✓ **Overall project risk**
- ✓ **Project approval requirements**

Instead of a vague description of project objectives, the project charter is a concise description document that contains all the characteristics of the project. Hereafter the table of contents of the project charter:

- Project purpose; *Objet du projet*
- Measurable project objectives and related success criteria; *objectifs mesurables du projet et les critères de succès*
- High-level requirements; *Grandes lignes des exigences*
- High-level project description, boundaries, and key deliverables; *Grandes lignes du projet , de ses limites et des livrables principaux*
- Overall project risk; *Risques Globaux*
- Summary milestone schedule; *Résumé du planning*

des Jalons principaux

- Preapproved financial resources; *Ressources financières Pré approuvés disponibles pour le projet*
- Key stakeholder list; *listes des parties prenantes principales*
- Project approval requirements (i.e., What constitutes project success, Who decides the project is successful, and Who signs off on the project); *Circuits d'approbation des décisions*
- Project exit criteria (i.e., what are the conditions to be met in order to close or to cancel the project or phase); *Critère de sortie du projet de ses phases principales*
- Assigned project manager, responsibility, and authority level : *Nom du Chef de projet assigné , ses responsabilités et son niveau d'autorité*

TD#1

Project Charter for Presences



Objet du projet : Création d'une application sur Mobile permettant de scanner les cartes RFC des étudiants pour Etablir la présences à des évènements EPITA et valider la présence aux cours des apprentis.

Objectifs mesurables du projet et les critères de succès : Gérer la présence aux évènements organisés dans le second semestre, et procéder aux pointage des cours apprentis en mars 2020.

Grandes lignes des exigences : a détailler à l'oral

Grandes lignes du projet , de ses limites et des livrables principaux: A détailler à l'oral

Risques Globaux: Risque de fraude, risque techno trop lente peu praticable

Résumé du planning des Jalons principaux : A détailler à l'oral

Liste des parties prenantes principales : A détailler à l'oral

Circuits d'approbation des decisions : A détailler à l'oral

Critère de sortie du projet de ses phases principaux : A détailler à l'oral

Example on A4 sheet