



PROJECT MANAGEMENT

ELSA ESTEVEZ

Universidad Nacional del Sur

Universidad Nacional de La Plata

CONICET, Argentina

1	DEFINITIONS
2	PROJECT MANAGEMENT LIFECYCLE
3	PROJECT OVERVIEW STATEMENT
4	SUMMARY

[DEFINITION – R. WYSOCKI]

A project is a **sequence of unique, complex and connected activities** that have an **objective or purpose** and that must be completed in a **specific time**, within the **budget** and according to the **specifications**.

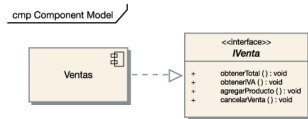
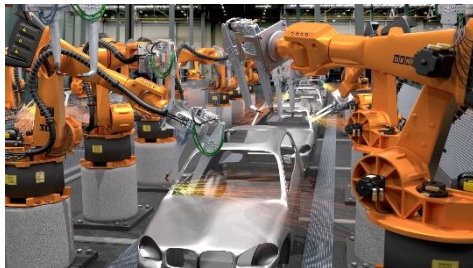
- It is any activity that as a result produces a “deliverable”
- It is an organization of work on a period of time created with the purpose of delivering one or more business products within the restrictions of **cost, quality** and **resources**.

PROJECT EXAMPLES

Lumosity - Brain Training
Lumos Labs, Inc. Educación
Todos



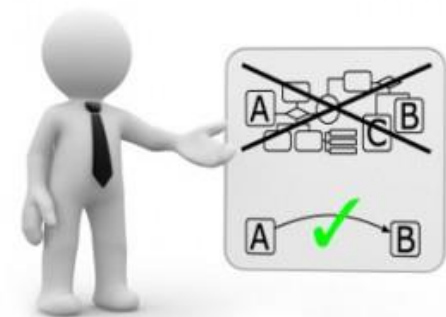
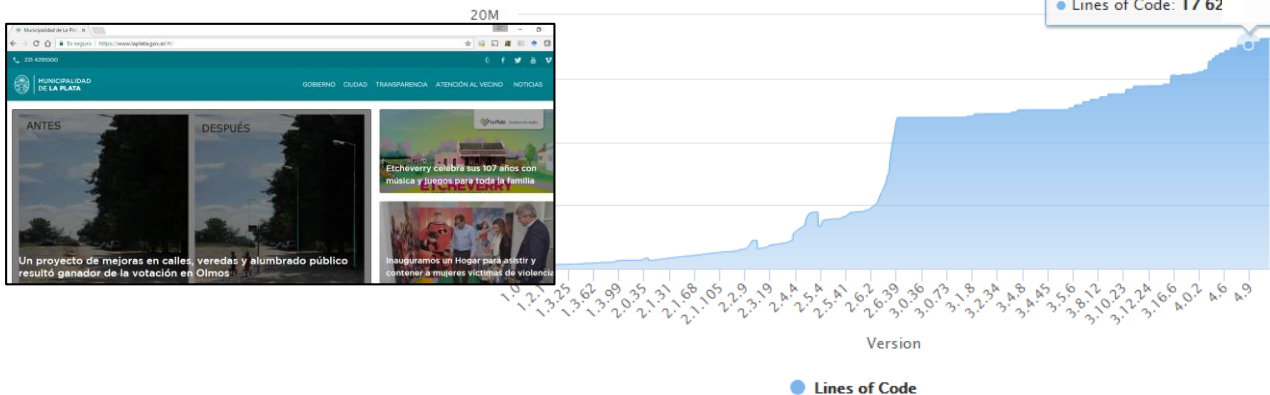
ORACLE
PEOPLESOFT ENTERPRISE



LINUX

Lines of code per Kernel version

Click and drag in the plot area to zoom in



To determine the sequence of activities it is useful to think about:

- Terms of inputs and outputs.
- What is necessary as input to start a task?
- What activities produce the outputs?

The sequence is determined taking into account:

- The output of an activity or set of activities is the input to another activity or set of activities.
- Artificial relationships between activities should be avoided. Example: Activity i will begin when Jarek returns from vacation.

The activities within a project are unique. A project never happened before, it will not happen in the future under the same circumstances.

There will always be something different each time the activities of a project are repeated.

Generally, variations will be random in nature - there are random events that can occur, that we can never be sure of when, how and what impact they will have on planning. Example: Internet is low and the communication cannot take place, Jarek got sick, ...

These random events are the challenge of project leaders.

The activities that make up a software project are not simple, they are not repetitive acts, like ordering a shelf, washing the car, painting a house. They are complex activities: design of the database, architecture design, interface design, ...

The activities are connected - there is a logical or technical relationship between pairs of activities.

There is an order in the sequence in which tasks must be performed to complete the project. They are considered connected because the output of one activity is the input of another.

There may be sets of activities that they are disconnected and thus, do not conform a project according to the definition.

ONE OBJECTIVE

The projects must have only one objective. Example: developing a billing system.

Very large and complex projects can be divided into **sub-projects**. Each of them, in itself, constitutes a project.

The division is made for a better management. It simplifies resource planning.

The division into sub-projects produces interdependence among them, adding one more level of complexity and communication.

Projects have a **completion date**.

This date can be self-imposed by the project leader or externally specified by a client or external agency.

The deadline is beyond the control of any member of the project.

Projects have **limited resources**, such as limited amount of staff, money, or computers dedicated to the project.

Although resources can be adjusted (increased or decreased) by senior management, they **should be considered fixed**.

The client expects a certain level of functionality and quality as a result of the project.

Such expectations can be:

- self-imposed by the development team - quality in the documentation of source code
- imposed by the client - the weekly report of list of sales

While the specifications are treated as fixed, they can be modified and surely they will.

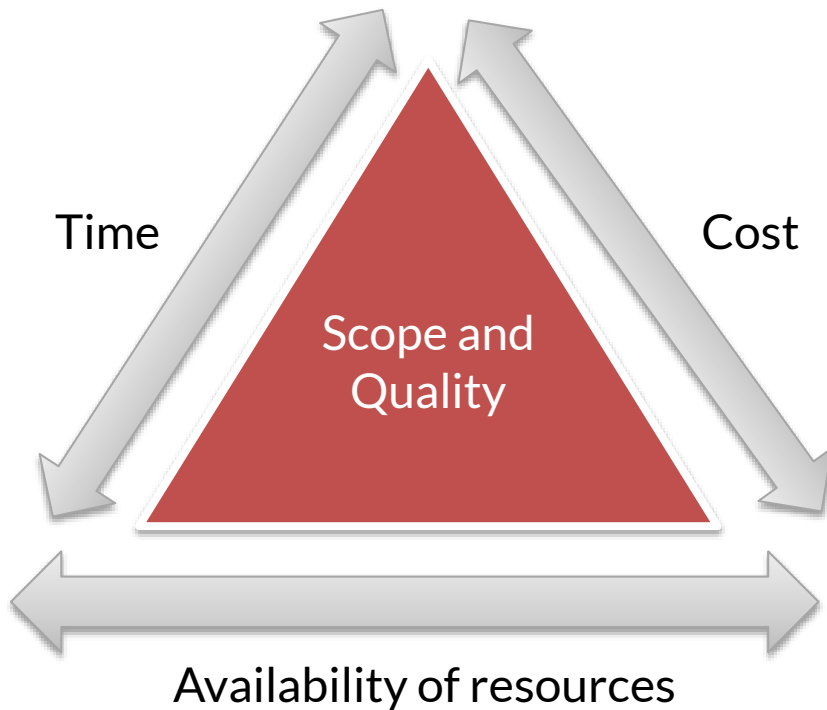
Changes in specifications are also a challenge for project leaders.

There are five restrictions that operate on a project:

- scope
- quality
- resources
- cost
- time

They are interdependent - a change in one, implies a change in the others.

PROJECT MANAGEMENT TRIANGLE



Projects are dynamic systems that must be kept in balance.

Time - is the time window in which the project must end.

Cost - is the budget available to complete the project.

Resource - is any input or consumable used in the project - people, equipment, office, paper, ...

They are controlled by the project leader and need to be identified independently.

Not too much attention to...

- ✓ business case
- ✓ quality
- ✓ deliverables definition and measurement

Inadequate...

- ✓ Definition of responsibilities
- ✓ Resource planning and coordination

Poor estimation of...

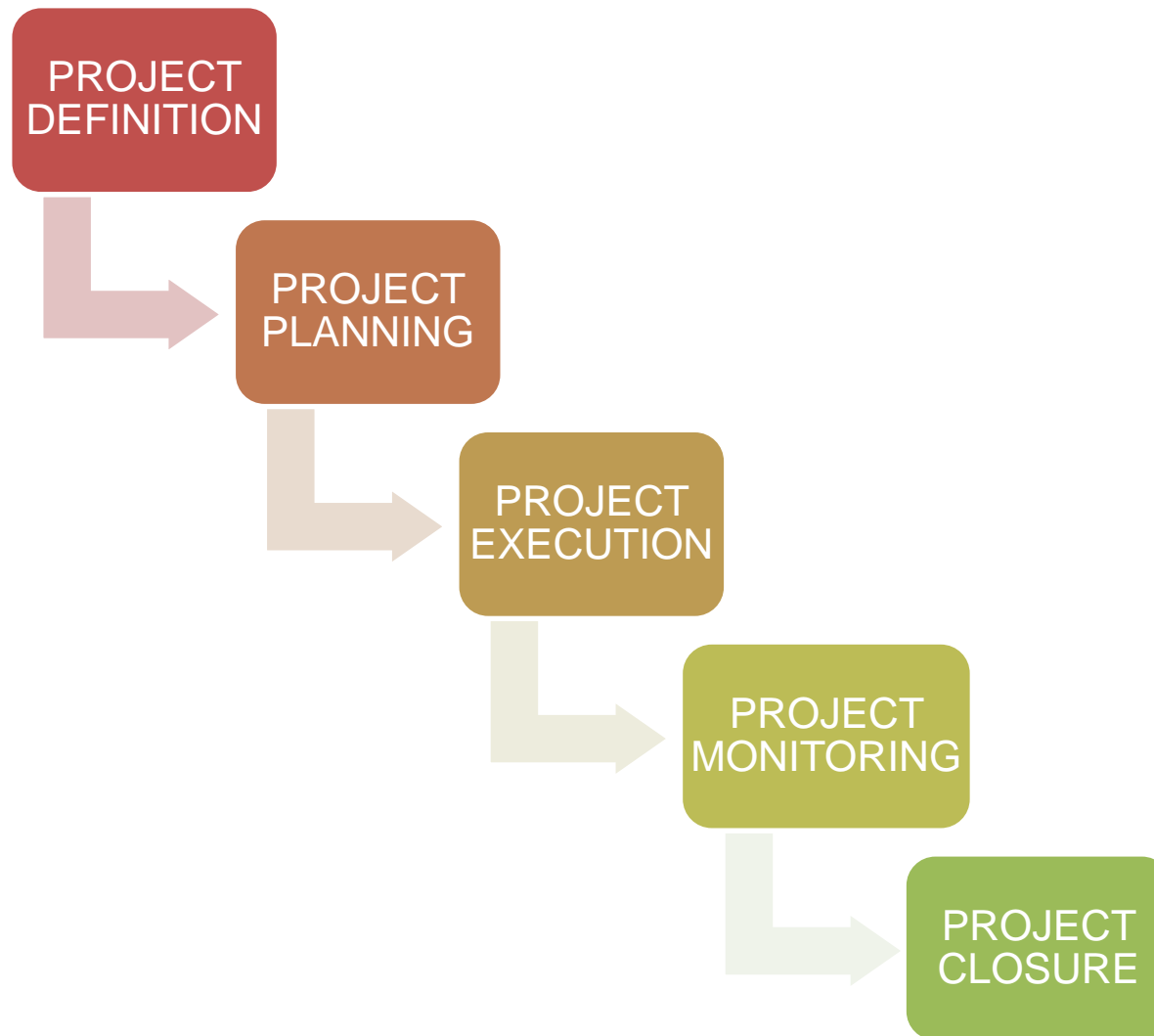
- ✓ duration
- ✓ costs

Lack of...

- ✓ stakeholder communication
- ✓ stakeholder commitment
- ✓ quality control
- ✓ progress control

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PROJECT LIFECYCLE



1 – PROJECT DEFINITION

- Formulate the problem / opportunity
- Establish the goal of the project
- Define the objectives of the project
- Identify the critical success factors
- List assumptions, risks, barriers

Each project has an aim - agreement between the client and the project leader about what is to be delivered.

The aim is limited by a number of goal statements.

The goals clarify the imprecision of the aim statement.

(Aim, goals) = define the scope of the project.

The main deliverable of the project definition stage is the Project Overview Statement (POS). It includes:

- Statement of the problem
- Aim and goals
- Critical Factors of Success (CSF)
- Assumptions-Risks-Barriers.

It must be 1 page and may have attachments. It clearly specifies what is going to be done.

POS – TEMPLATE EXAMPLE

Project Overview Statement

PROJECT OVERVIEW STATEMENT	Project Name:	Project Sponsor:	Project Manager:
Problem/Opportunity:			
Goal:			
Objectives:			
Success Criteria:			
Assumptions, Risks, Obstacles:			
Prepared by:	Date:	Approved by:	Date:

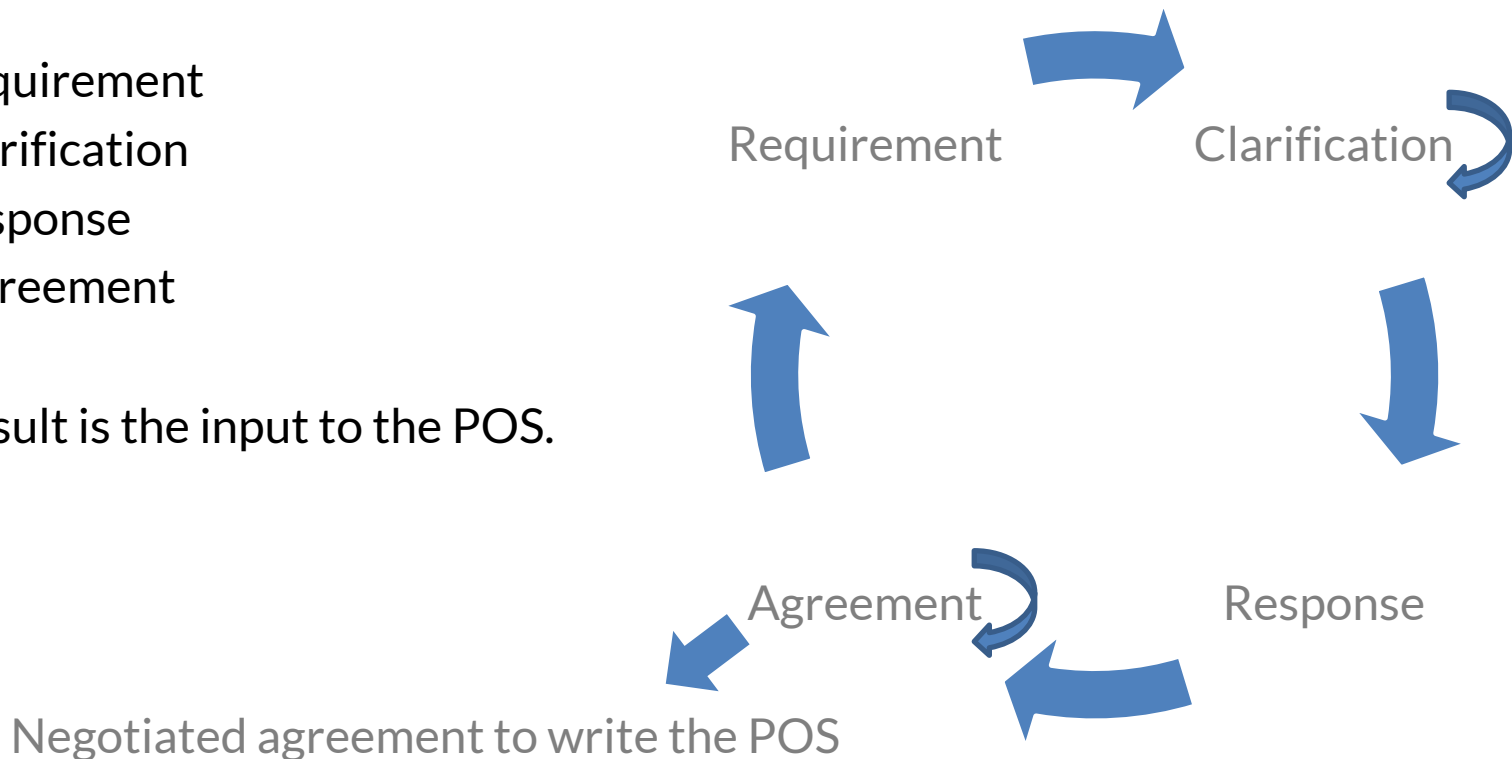
PROJECT DEFINITION – INITIAL STEPS

Based on a client's request or the assignment of the specific task, the project leader develops an initial project proposal known as Satisfaction Conditions

The process for developing the initial proposal comprises four stages:

- 1) Requirement
- 2) Clarification
- 3) Response
- 4) Agreement

The result is the input to the POS.



The POS is a short document that specifies concisely:

- what is going to be done in the project,
- why is it going to be done,
- what commercial value will have for the company

It serves for the management to approve the project and authorize the needed resources.

It is studied by a committee or by the person responsible for assigning priorities and decide what projects will be carried out.

It is used for defining the base and references for planning.

A goal statement should include:

- an **output** - a statement of what is going to be done.
- a **time frame** - the expected date of completion.
- a **measure** - metrics that will measure success.
- an **action** - how the goal will be achieved.

SMART GOALS

Goals should be **SMART**:

Specific - be specific in aiming the goal

Measurable - establish a measurable indicator of progress

Achievable - assign the goal to a person to complete it

Realistic - specify what can really be done with the available resources

Time-bounded - specify the time needed to achieve the goal

Once the POS is complete, it is sent to the management for approval.

The POS should be self-explanatory. Despite this, the management could consult with the project leader .

The approval of the POS serves for three audiences:

- senior management – to assign resources
- client – to ensure that the project is clearly defined
- the team – to ensure that the project is clear to senior management and the client

It is an approval to make the detailed plan.

The final approval of the project is made after analysing the detailed plan.

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2 – DETAILED PROJECT PLANNING

- Identify project activities
- Estimate the duration of the activities
- Determine resource requirements
- Build and analyse the project plan
- Prepare the project proposal

The deliverable of the detailed project planning stage is the project proposal that includes:

- a detailed description of each activity
- the resources required to complete each activity
- the estimated start and completion dates of each activity
- the estimated cost and the date of completion of the project.

In some organizations, the detailed project planning also includes:

- feasibility study
- statements of impacts on the environment
- cost-benefit analysis
- analysis of alternatives, ...

3 – PROJECT EXECUTION

- Recruit and organize the project team
- Establish the operating rules for the team
- Ensure similar level of project resources
- Plan work packages
- Document work packages

4 – PROJECT MONITORING

- Establish progress reporting system
- Install change control tools / processes
- Define the process to escalate problems
- Monitor the progress of the project versus the plan
- Review project plans

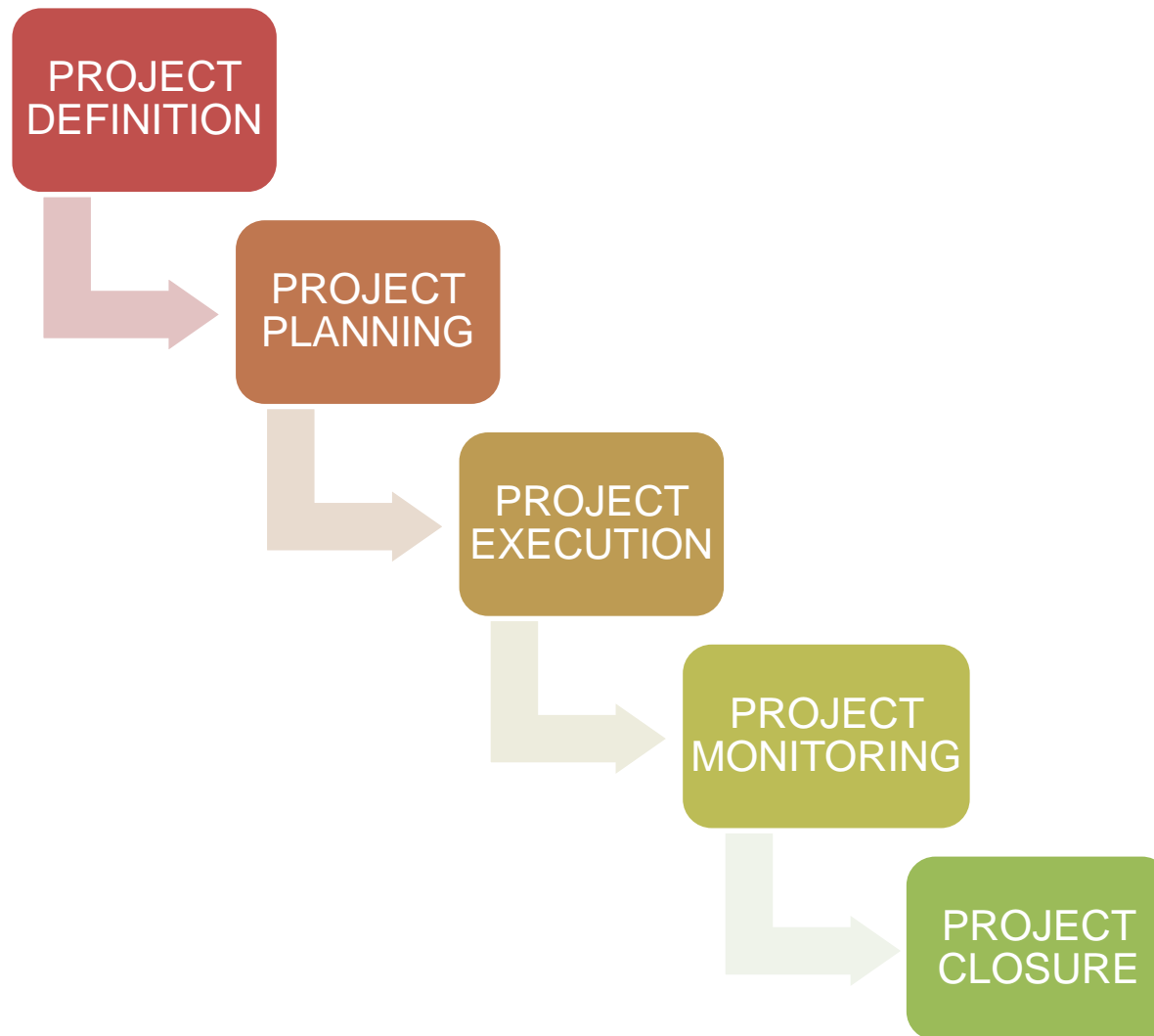
5 – PROJECT CLOSURE

- Install the deliverables
- Archive final reports and documentation
- Run a post-installation audit
- Celebrate!!! (Take a vacation)

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- PROJECT- is a sequence of unique, complex and connected activities that have an objective or purpose and that must be completed in a specific time, within the budget and according to the specifications
- PARAMETERS - scope, quality, cost, time and resources

PROJECT LIFECYCLE



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A Guide to the Project Management Body of Knowledge, PMI, 5th Edition,
http://dinus.ac.id/repository/docs/ajar/PMBOKGuide_5th_Ed.pdf

Project Stakeholder Management,
http://www.utu.fi/fi/yksikot/med/opiskelu/Jatkotutkinto/PGE/Documents/2016/kurssimateriaali/PML16_2016_L13ProjectStakeholderManagement20160418.pdf

ONLINE VIDEOS

- https://www.youtube.com/watch?v=-tNHplQ_-hw&t=13s
- <https://www.youtube.com/watch?v=0EkufUCo5qI>

¿Questions?

Elsa Estevez
ecestevez@gmail.com