The IT Project Management

Lesson 2

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Why Project Management (2)

And BECAUSE it answers the big, existential questions of a Project Manager:

- WHAT
- WHEN
- HOW
- WITH WHOM
- HOW MUCH I will pay
- HOW MUCH I will earn

Is it enough ?

Starting a project/1

Before the actual project management activities start, we should examine some preliminary topics. And answer some questions:

- The «**scenario**» in which the project will be developed
- **What** we have to do: the Statement of Work (SOW) and the Product Breakdown Structure (PBS)
- **Which** are the required **activities**: the Activity Breakdown Structure (ABS) (the *HOW*)
- The required **human resources**: the Organisation Breakdown Structure (OBS) (the *With Whom*)

Starting a project/2

When the above questions are answered, we will be able to define the detailed structure of the project:

the Work Breakdown Structure (WBS)

Then we will add some other elements:

- The budget and the cost analysis (the *How Much I will pay*)

- The risks that the project will (hopefully not) face: the Risk Analysis

- The economic result of the project: the EVA (Economic Value Added) (the *How much I will earn*)

The scenario/1

We should understand **WHERE WE ARE**, to find the best way to manage it

First:

The project NATURE, and SCOPE

- Research
- Development of a new product
- Equipments' installation
- Plant
- ……

The scenario/2

Second:

The CUSTOMER

- Internal (the worst)
- A private Company
- A public Company (often very formal: public money and bureaucracy)
- Abroad
- ……

Third

The EXPECTATION:

- Vital
- Standard
- …..

The SOW

The Statement of Work

A document (*written and signed*) in which the **REQUISITES** of the project scope are defined.

The owner of the SOW is, generally, the Sale Manager (who sold the product), the Head of R&D (in case of internal, research projects), ….

The PM is not involved, unless the Salesman asks him to participate to the definition of the product with the final Customer (not very often)

The SOW is the **contractual document** on which all the Project Management activities are based: it is the Bible of the project, to be learnt by heart by the PM.

The real PM's job starts: Planning a Project

First of all:

Define the TARGETS

AS:

The Project Planning starts with the identification of a coherent set of targets to be achieved

The Target is what REMAINS: not the *action,* but the *result* of the action

The PBS (Product Breakdown Structure)

Starting from the SOW, we can face the first step

WHAT we have to do

A *Product* is formed by some (few or many) parts, of the same nature or of very different kind.

To understand WHAT to do, it is important to identify the single part.

The PBS is basically the **hierarchical decomposition (breakdown)** of the components of the final product. In general, **a list of parts**. It can be thought of as the project *shopping list*.

The PBS can be

• a standard list of parts (for consolidated typologies of products) , or

• Designed and tailored to a new, unknown product

PBS: a (<u>very</u> simple) example
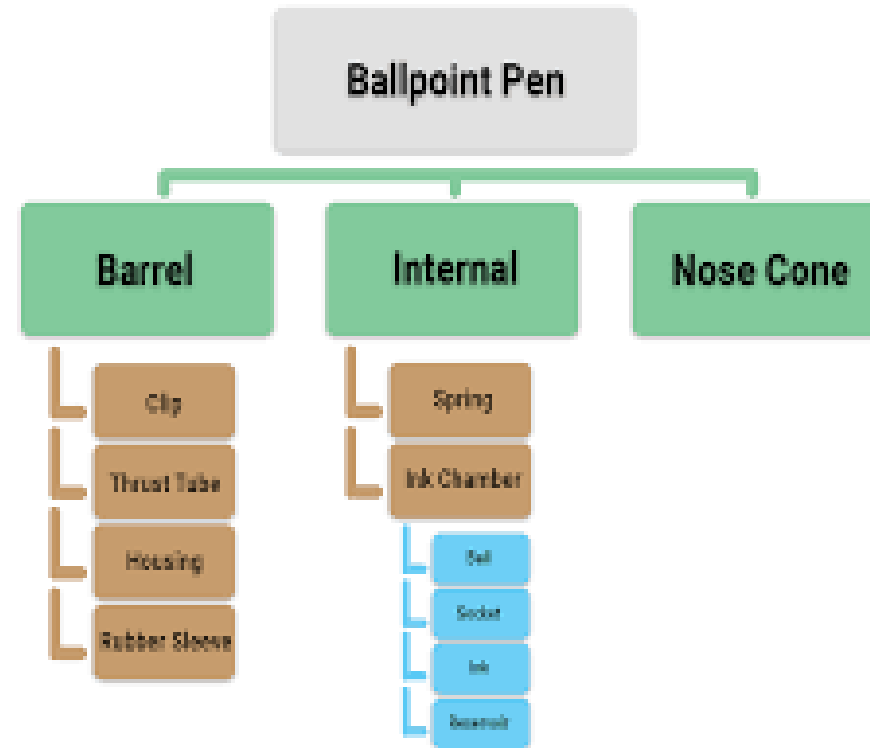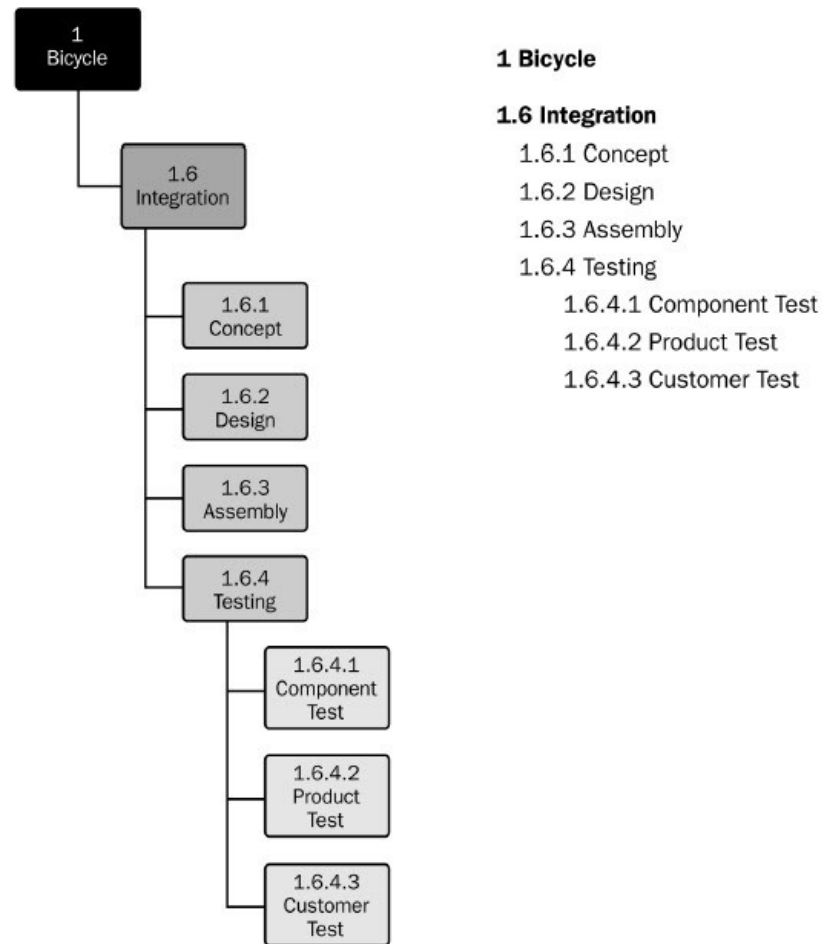
The ABS (Activity Breakdown Structure)

Which are the required activities

(How)

To achieve our target (*the product*) we have to produce the *objects* defined in the PBS: the ABS defines the activities to be accomplished to get the target. The ABS as well is a **list of activities** (in general)

As the PBS, an ABS can be:

• Standard, for consolidated products

• Designed and tailored to a new *product*

ABS: an example

1 Bicycle

1.6 Integration
    1.6.1 Concept
    1.6.2 Design
    1.6.3 Assembly
    1.6.4 Testing
        1.6.4.1 Component Test
        1.6.4.2 Product Test
        1.6.4.3 Customer Test

The OBS (Organization Breakdown Structure)

The required human resources

(With Whom)

To accomplish a Project we need an Organization: the OBS is its graphical portrayal

The OBS includes the main people involved in the project: the Team Leaders, basically.

A more detailed matrix is the RAM : *Responsibility Assignment Matrix*

The OBS/2

The OBS reflects the way a Company is organized, and the role of the Project Manager.

The OBS can be:

- Strong: the resources report DIRECTLY to the PM for the whole project period. A sort of small (or large) division of the Company. It is used for long lasting, large and critical projects
- Light: the resources are assigned to the project as far as their contribution to the final result is required. They continue to report to their hierarchical responsibles.

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OBS: an example
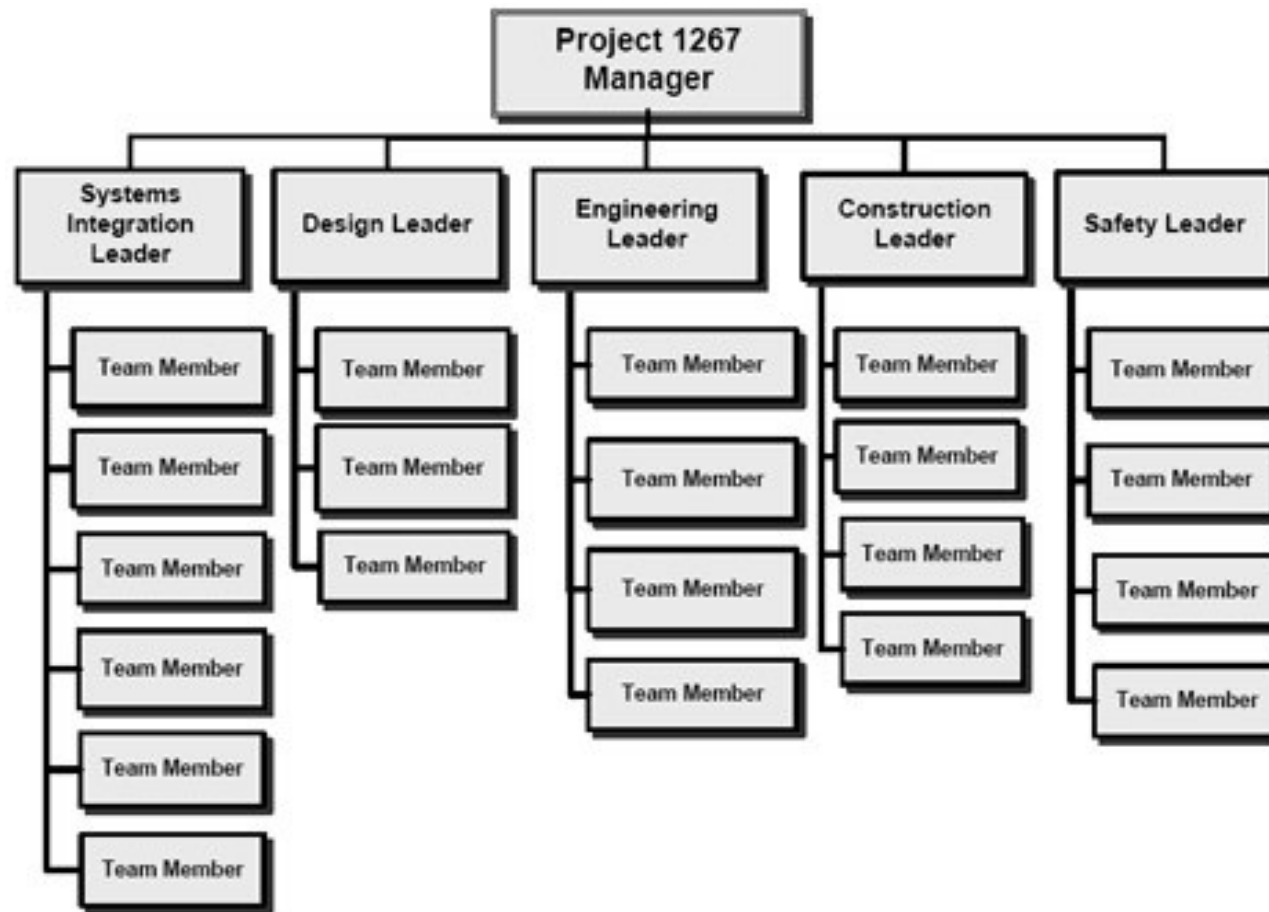
The next step: the WBS

When the WHAT (PBS), HOW (ABS), with WHOM (OBS) are defined for the specific project, the following step is the COMBINATION of all of them in what is called
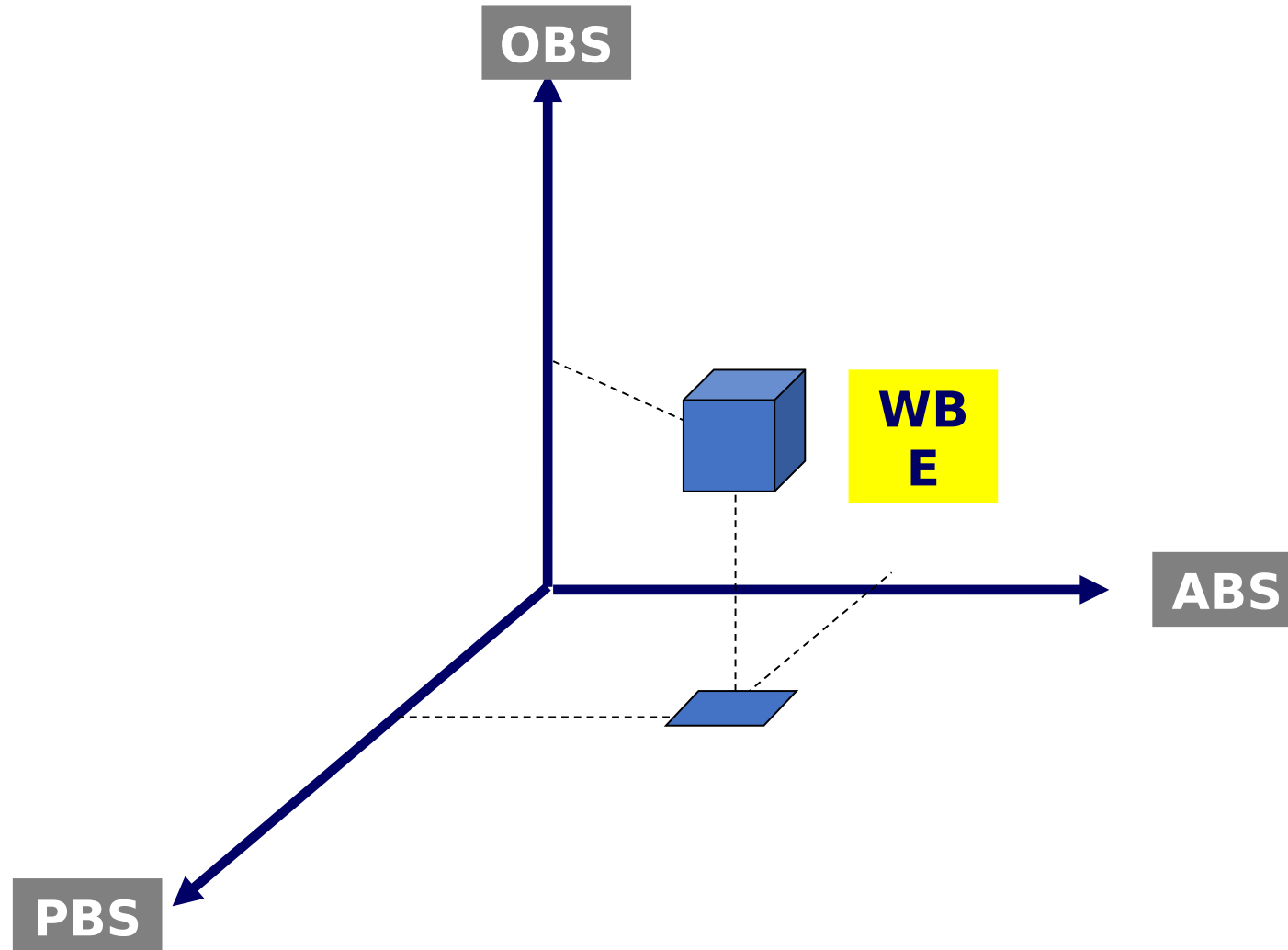
Work Breakdown Structure, WBS

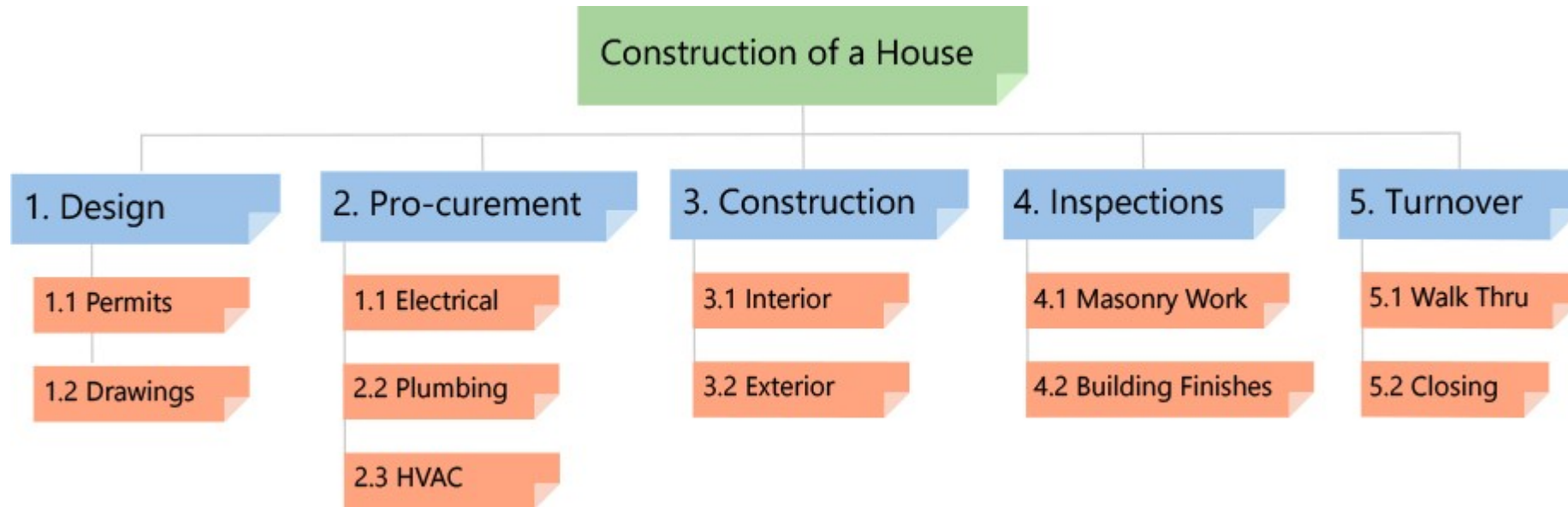The basis for programming a Project.

The WBS

The **WORK BREAKDOWN STRUCTURE** can be defined as

the **top down** decomposition of the project in more and more detailed elements (WBElements) inserted in their hierachical position, using a «tree» logic where the WBE are the «leaves».
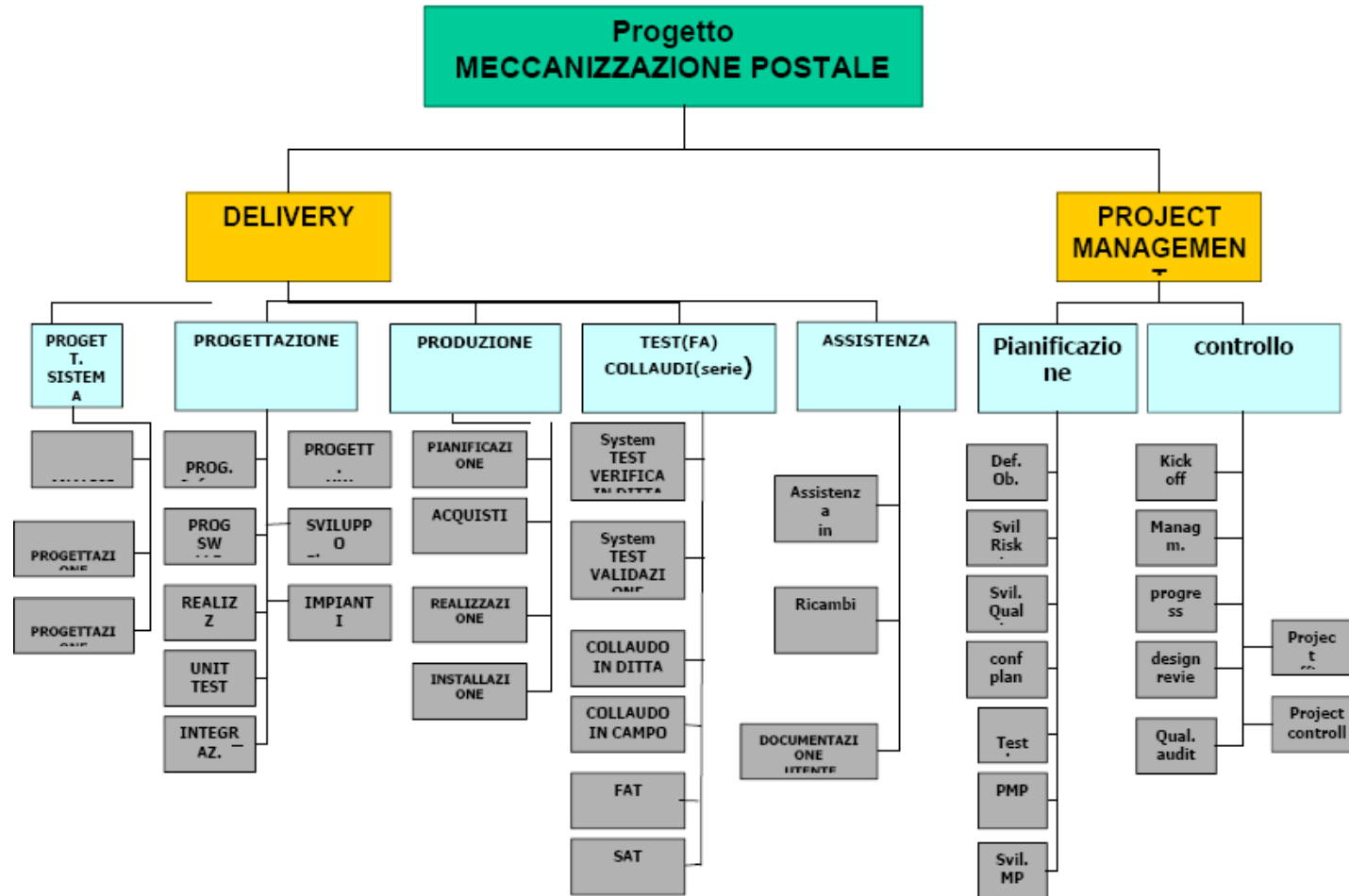
The WBS/2

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WBS example : Costruction of a House

A real life WBS Example: Postal Mechanization

WBS/4

Some important points:

The WBS is a MANAGEMENT tool: it supports the planning and the control of the fullfillement process, does NOT describe the product realization.

The «depth» of the WBS (how many WBE ?) should consider two criteria:

- Relevance: each element must be *significant* in the context ot the whole project
- Criticality: each element that has an impact on the whole result of the project should be highlighted

NOT TOO LARGE, NOT TOO SMALL

The Work Package

We have defined the WBE: the «leaves» of the Project «tree». We know what to do, which activities, who will do them.

We have to add two VERY important elements:

• How long does it take to fullfill the task included in the WBE

• How much does it cost

And, in more details, who will work: the RAM

We will obtain the **Work Package:** our main tool .

The Work Package/2

The **WP** is the **Control Unit,** the deepest detail in which the project should be broken down in order to plan, manage and control it in its aspects:

• Technical and quantitative (PBS, ABS)

• Timing

• Resources (RAM)

• Economical and financial (Costs and revenues)

Generally, a Customer requires a detailed document for each WP.

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The WP/3

The WP **main requisites**:

- UNIQUENESS
- Clear identification of the TARGETS
- INPUTS required to start
- OUTPUT of the activities covered by the WP: the DELIVERABLE of the WP
- COSTS (materials, man power, supplies, …)
- RESPONSIBLE: clearly identified and unique (a part of the RAM)
- Start- finish date: DURATION of the activity
- The PROGRESS of the activity must be MEASURABLE

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The WP/4

Each WP can be further broken down in several, linked activities (the sub-WP), in order to increase the management of the main WP.

For istance:

WP1 Project Planning

     WP1.1 Definition of the SOW

     WP1.2 Definition of detailed requisites

     WP1.3 Scheduling

WP2 Product Design

     ....