



# Work Breakdown Structure

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Andrea Martone



## WBS - Work Breakdown Structure: what is it?

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- A problem is made of many smaller problems.
- Using the Work Breakdown Structure every macro-activity is decomposed in micro-activity or work packages.
- To each activity it is assigned:
  - a date and a time of beginning and end,
  - the person who must carry it out,
  - the relative costs.
- If an activity can be carried out only after another one has been made, the two activities must be connected.
- The activities must be the operations that are used to solve the problem (to try, to make, to mount, to take apart, to communicate, to calculate, to deduce, to analyze, to synthesize, to introduce).

## WBS

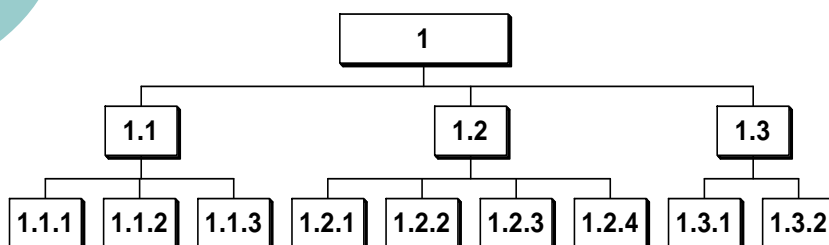
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- WBS is a typical "tree structure";
- The elementary units of this structure are the work packages or tasks,
- WP can be measured objectively and with well defined responsibility;
- Once structured the WBS, any changes are to be avoided.

## WBS – Graphic representation

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The WBS is an hierarchical decomposition of a project into its elements. The WBS' aim is to improve the managerial control.



It is common for WBS elements to be numbered sequentially to reveal the hierarchical structure.



## WBS – The Works Packages

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They are the elements that compose the WBS (plans, make and activity).

The aspects that characterize the WP are:

- Contents and objects;
- Costs and revenues (budget);
- The responsible;
- The length of the work;
- The documents of plan.



## WORKS PACKAGES

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- Longer the work packages are, more difficult the appraisal of the WiP is (Work in Progress).
  - The WP of the WBS must be:
    - clearly defined (beginning & end)
    - phases must be clearly separated by a deliverable also used in defining Entry and Exit Criteria
    - structured in order to reduce controls and documents
    - normally contain a definition of the costs

## W.B.S. - structure

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The Hierarchical tree structure of a project is articulated in:

- Plan;
- Phases;
- I Level Activities;
- II Level Activities.



## Projects, Phases & Activities

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- Plans: a group of phases with a specific objective
- Phase: a group of similar activities
- Activity: a group of operations, behaviors and decisions which represent an intermediate outcome

## Description

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- Usually the phases and the activities are verbally described



## Milestone

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- It is a specific result during the project
- A milestones can be seen like an intermediate scope.



## Milestones

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- They must represent important moments of the projects.
- Examples of milestones can be:
  - Products;
  - Manuals;
  - Documents;
  - Declaration etc.
- They must be limited

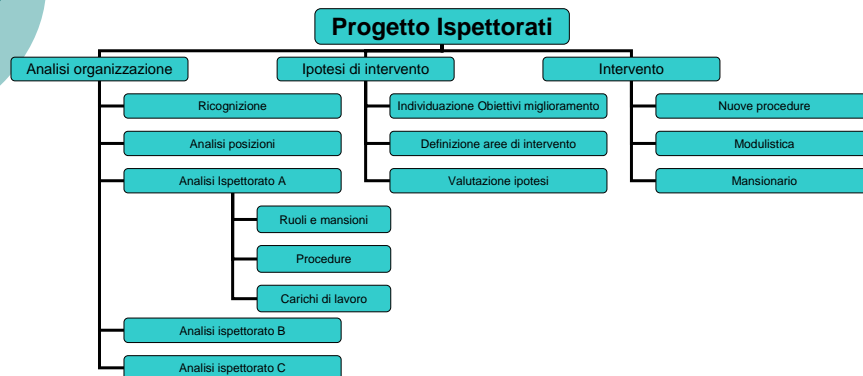


## Identification Chart

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ACTIVITIES	MILESTONES
A	1
B	
C	2
D	
E	3

## Example of WBS – The structure



## Rules for the WBS correct writing out

- There aren't intersections between various the activities contained in different "boughs" of the WBS
- Every level passage must be based on the same logic of decomposition
- Smaller the dimension of the WP is, easier the management by the direct responsible is, more difficult the project control is with many WP
- Each part has to be filled in by the



## From PjM to WBS

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- The decomposition of a plan in several elements, that characterize it, is realized by Work Breakdown Structure (WBS). The WBS is integrated by other complementary structures:
  1. **PBS** (product breakdown structure)
  2. **ABS** (activity breakdown structure)
  3. **CBS** (cost breakdown structure)
  4. **OBS** (organization breakdown structure)
  5. **RBS** (resource breakdown structure)
  6. **LBS** (lay-out breakdown structure)
  7. **BOM** (bill of materials)



## WBS - conclusions

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The corrected definition of the WBS ensures:

- that each part of the project has been previewed and linked to any other part
- that general goals of the project are achieved by reaching secondary goals simpler to control
- the correct and complete subdivision of the budget
- the complete attribution of the responsibilities
- the sure location of every goals.