# INTRODUCTION
# WORK BREAKDOWN STRUCTURE

**Ferdinand Fassa**

fppt.com

# Outline

1. Review Lecture 5
2. What is a Work Breakdown Structure?
3. Why is a Work Breakdown Structure needed?
4. Preparing a WBS
5. Building a WBS: Structure
6. Work Breakdown Structure (WBS) Tree
7. Organization Breakdown Structure (OBS)

# Review Module 5

# Project Organization

# What is a Work Breakdown Structure?

The Work Breakdown Structure (WBS) is

- A tool that defines A project is breakdown into A group of activities.

- A representation of the detailed project scope statement that specifies the work to be accomplished by the project.

# What is a Work Breakdown Structure?

A WBS element may be:

- A product,

- Data,

- A service, or

- Any combination.

# Why is a Work Breakdown Structure needed?

Not all projects have a WBS,

So why is a WBS needed?

- Provides a framework for organizing and managing the approved project scope

- Helps ensure you have defined all the work that makes up the project

- Provides a framework for planning and controlling cost and schedule information

- It's better to be deliberate about planning than rely on luck!

# Preparing a WBS

In preparing a WBS there are a number of steps that need to be taken

including:

1.   identifying the final project product

2.   Divide the total work of the project into major groups

3.   Subdivide these groups into tasks

4.   Divide these tasks into sub-tasks

5.   Subtasks should be small enough to permit adequate control and

     visibility

# Example of WBS: "Holiday"
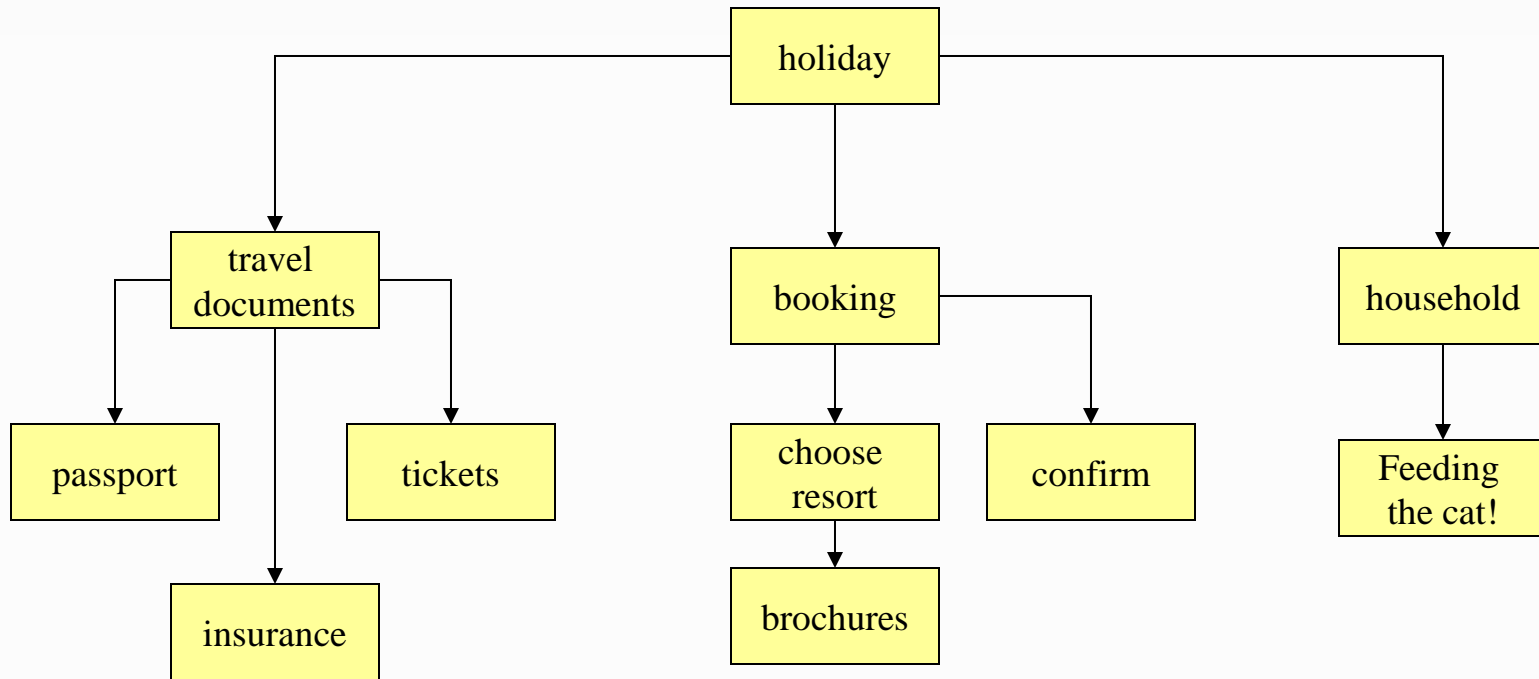
# List of activities

- Booking:
  - get brochures
  - choose resort
  - make booking
  - confirm booking
- Travel documents:
  - check passport
  - book tickets
  - get insurance
- Household:
  - feeding the cat!

# Example WBS Redecorate Room

- Redecorate Room
  - Prepare materials
    - Buy paint
    - Buy a ladder
    - Buy brushes/rollers
    - Buy wallpaper remover
  - Prepare room
    - Remove old wallpaper
    - Remove detachable decorations
    - Cover floor with old newspapers
    - Cover electrical outlets/switches with tape
    - Cover furniture with sheets
  - Paint the room
  - Clean up the room
    - Dispose or store left over paint
    - Clean brushes/rollers
    - Dispose of old newspapers
    - Remove covers

# Building a WBS: Structure

**The ACME Housing Corporation, which you own**, has been **contracted to build its first house.**

Start the WBS with ACME in the highest position, or Level 1.  Accordingly, Level 1 is given a WBS code of 1. You assign the WBS code of 1 to the highest level because all future projects (houses) will be summarized at Level 1.

NOTE: For ease of explanation, our
 example will assume the following:

- Design is complete

- All permits issued

- All Material ordered

- Inspection happens

Level 1 →
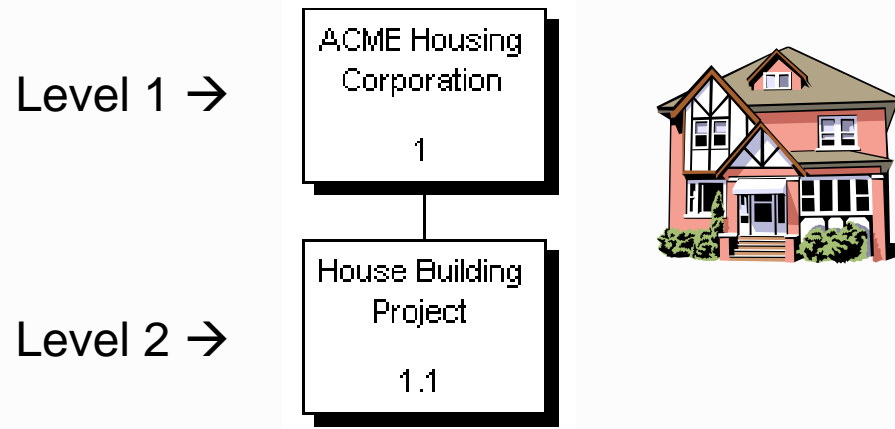
ACME Housing
Corporation

1
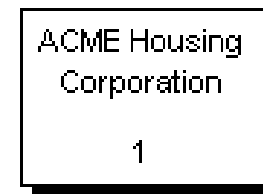
# WBS: Structure

With Level 1 established, you can begin to complete the WBS.

Level 2 is identified at the project level: House.

Appropriately, the code for Level 2 corresponds to Level 1. In this case,

the code is 1.1.

Level 1 →

ACME Housing
Corporation

1

House Building
Project

Level 2 →

1.1

# WBS: Structure

You choose to divide Level 3 into six elements: concrete, framing, plumbing, electrical, interior and roofing.

Notice the WBS codes at level 3. Each is unique to the project and starts with the WBS code from the level above (1→1.1→1.1.1).   Now lets look and see if another level is needed.

Level 1 →

ACME Housing Corporation

1

Level 2 →

House Building Project

1.1

Level 3 →

| Concrete | Framing | Plumbing | Electrical | Interior | Roofing |
|---|---|---|---|---|---|
| 1.1.1 | 1.1.2 | 1.1.3 | 1.1.4 | 1.1.5 | 1.1.6 |
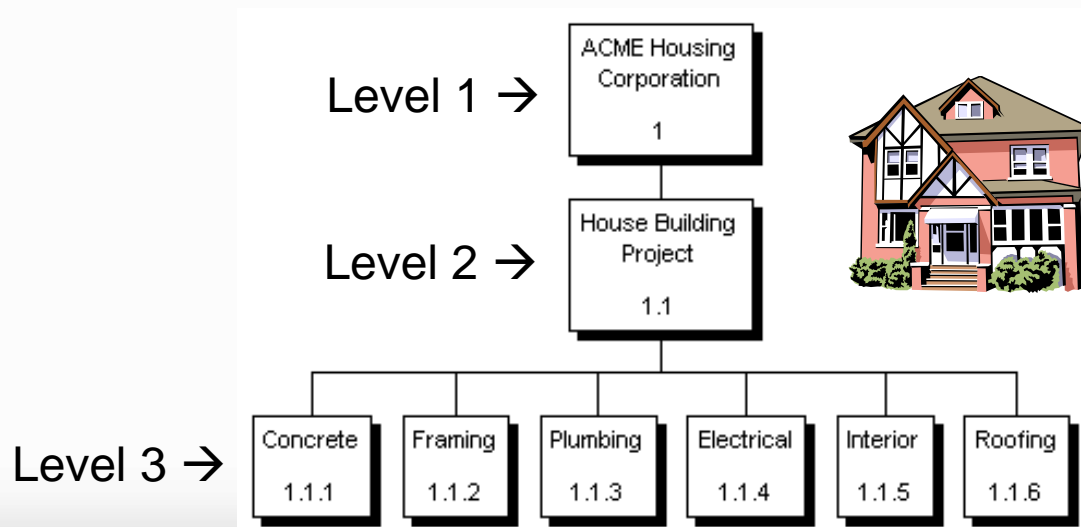
# WBS: Structure

Level 4 of the WBS will enable us to manage the project as desired

ACME Housing Corporation

1

← Level 1

House Building Project

1.1

← Level 2

Level 3 →

| Concrete | Framing | Plumbing | Electrical | Interior | Roofing |
|---|---|---|---|---|---|
| 1.1.1 | 1.1.2 | 1.1.3 | 1.1.4 | 1.1.5 | 1.1.6 |

Level 4 →

Pour Foundation

1.1.1.1

Install Patio

1.1.1.2

Stairway

1.1.1.3

Frame Exterior Walls

1.1.2.1

Frame Interior Walls

1.1.2.2

Install Roofing Trusses

1.1.2.3

Install Water Lines

1.1.3.1

Install Gas Lines

1.1.3.2

Install Bath and Kitchen Fixtures

1.1.3.3

Install Wiring

1.1.4.1

Install Outlets/Swtiches

1.1.4.2

Install Fixtures

1.1.4.3

Install Drywall

1.1.5.1

Install Carpets

1.1.5.2

Painting

1.1.5.3

Install Felt

1.1.6.1

Install Shingles

1.1.6.2

Insall Vents

1.1.6.3

# Work Breakdown Structure (WBS) Tree

- The graphical structure of the WBS is an easy way to identify the project components and relationships of those components.

- WBS can be displayed in another format as well: the Tree format. Both formats are acceptable.

- Note the WBS codes and the structure of the Levels in the Tree format mirror the graphical format. The content has not changed; only the way the content is presented has changed.

1 ACME Housing Corporation
  1.1 New Home Construction
    1.1.1 Concrete
        1.1.1.1 Pour Foundation
        1.1.1.2 Install Patio
        1.1.1.3 Pour Stairway
    1.1.2 Framing
        1.1.2.1 Frame Exterior Walls
        1.1.2.2 Frame Interior Walls
        1.1.2.3 Install Roofing Trusses
    1.1.3 Plumbing
        1.1.3.1 Install Water Lines
        1.1.3.2 Install Gas Lines
        1.1.3.3 Install B/K Fixtures
    1.1.4 Electrical
        1.1.4.1 Install Wiring
        1.1.4.2 Install Outlets/Switches
        1.1.4.3 Install Fixtures
    1.1.5 Interior
        1.1.5.1 Install Drywall
        1.1.5.2 Install Carpets
        1.1.5.3 Install Painting
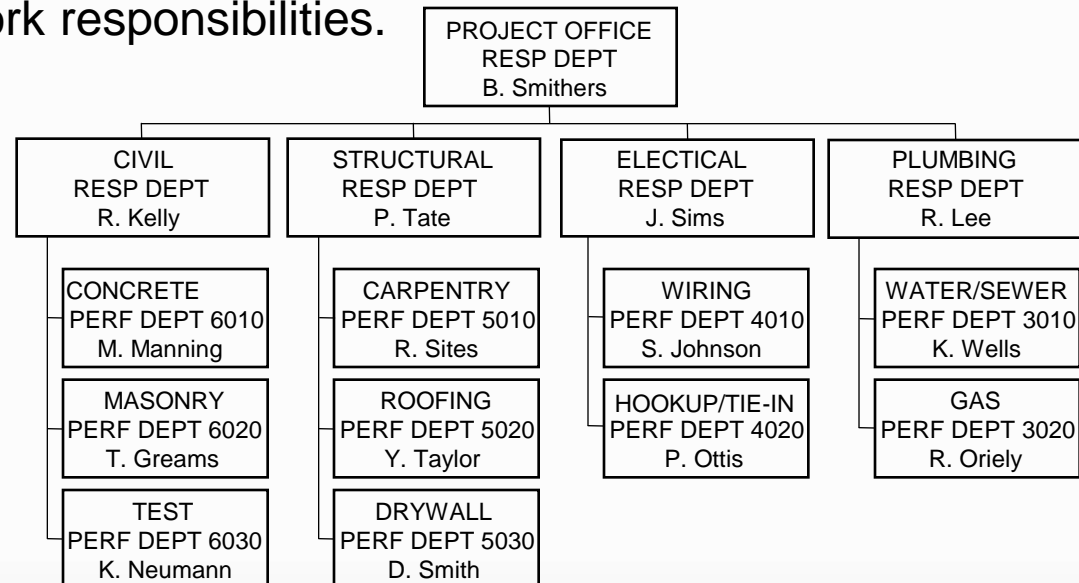    1.1.6 Roofing
        1.1.6.1 Install Felt
        1.1.6.2 Install Shingles
        1.1.6.3 Install Vents

# Organization Breakdown Structure (OBS)

After WBS is developed:

- Resources and responsibilities need to assigned.

- The first step in doing this is developing the Organizational Breakdown Structure (OBS) for the project.

- The OBS indicates the organizational relationships and is used as the framework for assigning work responsibilities.

```
                        PROJECT OFFICE
                        RESP DEPT
                        B. Smithers

   CIVIL            STRUCTURAL        ELECTICAL         PLUMBING
   RESP DEPT        RESP DEPT         RESP DEPT         RESP DEPT
   R. Kelly         P. Tate           J. Sims           R. Lee

   CONCRETE         CARPENTRY         WIRING            WATER/SEWER
   PERF DEPT 6010   PERF DEPT 5010    PERF DEPT 4010    PERF DEPT 3010
   M. Manning       R. Sites          S. Johnson        K. Wells

   MASONRY          ROOFING           HOOKUP/TIE-IN     GAS
   PERF DEPT 6020   PERF DEPT 5020    PERF DEPT 4020    PERF DEPT 3020
   T. Greams        Y. Taylor         P. Ottis          R. Oriely

   TEST             DRYWALL
   PERF DEPT 6030   PERF DEPT 5030
   K. Neumann       D. Smith
```

# Conclusion

➢ WBS is a tool that defines a project and groups the projects elements in a way that helps organize and define the total work scope of the project

➢ In preparing a WBS there are a number of steps that need to be taken including:

1. identifying the final project product

2. Divide the total work of the project into major groups

3. Subdivide these groups into tasks

4. Divide these tasks into sub-tasks

5. Subtasks should be small enough to permit adequate control and visibility

# Terima Kasih