Practitioner's Guide:

Objective Analysis
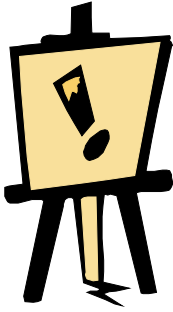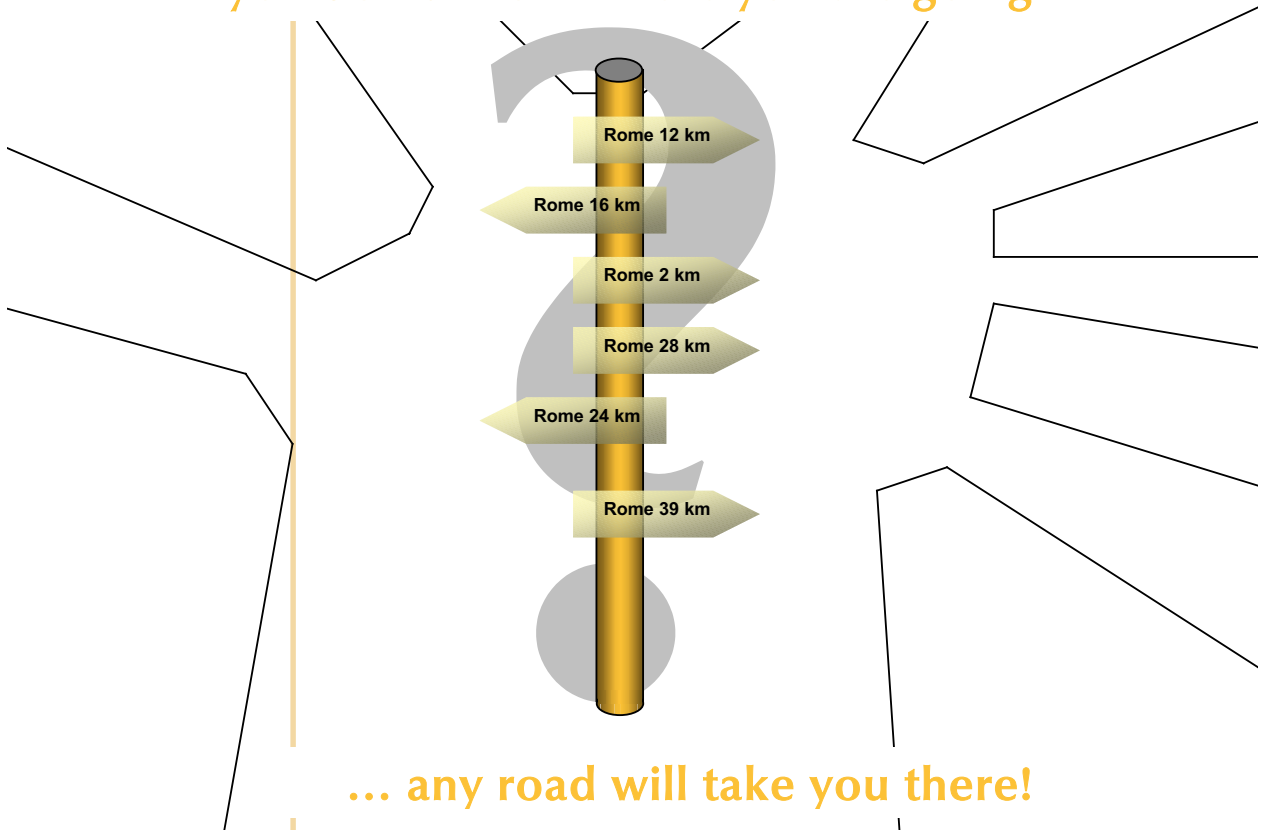
Objective Analysis

**Brief
Description**

The objective tree technique helps to define project objectives and provides a way to order them in a hierarchical structure. An objective tree is used to provide a guiding rational for systems design and evaluation. It also helps to indicate how the attainment of sub-objectives contributes to the accomplishment of higher objectives. Objective trees help to show how objectives for a project are interrelated. They also provide a useful way of identifying criteria for evaluating alternative means as well as helping to assess the level of impact or scope of the project. Objective trees provide the necessary inputs to other techniques such as the Project Planning Matrix and other planning techniques.

If you don't know where you are going…

Rome 12 km

Rome 16 km

Rome 2 km

Rome 28 km

Rome 24 km

Rome 39 km

… any road will take you there!

Objective Analysis

Proposed Main Users

Private and public sector regional, urban or sectoral planners

Purpose of the Method

Objective trees may be constricted to aid project design and evaluation. An objective tree consists of project objectives linked hierarchically in a tree graph; objectives at a lower level contribute to the attainment of an objective at a higher level. The objectives that are measured to indicate the success of a project are usually found at the lowest level. Objective trees are one of many forms of tree diagramming and they are closely related to means-ends analysis

Reasons why we need objectives: for centuries peoples energies have been focused on maximizing ones own needs, wants and desires, however to achieve these needs one has to know what one wants. So much of ones energy is devoted to activity, which is not directed by clearly defined goals. It is always assumed that as long as the desk is full of papers and the person is looking busy, the person is working hard and getting tired, that he is producing results and that things are getting done and being achieved. The fact is that people are always producing results, however, it is necessary to know if these are directed towards the achievement of a specific objective or not, and whether that objective takes one in the desired direction. Activity without direction is usually non productive.

If the planner does not state in advance of the time for action, the planning objectives clearly and concisely, the planner cannot know what he/she is doing!
An objective is a description of a future, wanted (though realistic) situation. Objectives are the specific results desired. Furthermore, an objective hierarchy or tree expresses a cohesive set of intents and it serves to:

▶ Reveal possible objectives
▶ Identify MEANS - ENDS relationships, necessary to solve the identified problems
▶ Elaborate the structure of the means- ends relationships as a basis for the identification of the different programme concepts and alternatives
▶ Clarify the role of the plan with its objectives, performance and impact
▶ Elaborate the wishes of the people in the regions with respect to the national objectives
▶ Identify possible intervention areas within the region
▶ Identify possible interventions on a multi sectoral approach.

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Advantages

- ▶ The objective tree allows a rigorous development of explicit and comprehensive objectives. This helps the design or implementation of a project to achieve the desired ends
- ▶ As the objectives are made explicit, the diagram is useful to communicate the relationship between objectives to other decision makers and interested groups
- ▶ Objective trees may incorporate both quantitative and qualitative objectives. Qualitative objectives may be expressed at a lower level of the hierarchy.
- ▶ The process of developing the tree often indicates interlinking or related objectives which might not otherwise be considered.
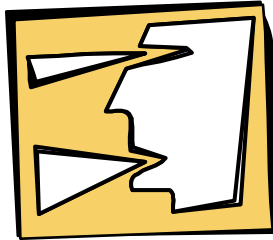
Limitations

- ▶ No single objective tree is valid for a particular project. Each person will construct an objective tree in a different manner. There is an inherent uncertainty and ambiguity in specifying objectives.
- ▶ The stated and the actual objectives of personnel in an organisation may differ significantly. Determining actual objectives is a difficult (if not impossible) task.
- ▶ There may be confusion over means versus ends. An objective tree structures the statement of goals (or ends) by identifying sub-objectives (means) to their attainment.

Objective Analysis

Principles and General Procedures

It may be worth starting the objective analysis be first classifying objectives according to their various different characteristics. Objectives may be different if they are quantitative, binary-event, or qualitative. A further classification could be to measure them according to the attainment of the objectives.

A quantitative objective may be measured either by **deterministic or probabilistic methods**. A deterministic measurement is made when a definite attainment of an objective is determined from numerical data (i.e. to build 150 low income houses, to increase the schools's teacher-student ratio to 40 per 1000).

A **probabilistic measurement** is made when collected data are insufficient to determine with certainty that an objective has been attained. This is the case when data is collected on only a sample of the target population (i.e. to produce the product with no more than 1% defects, to persuade at least 90% of drivers to wear seatbelts).

A **binary-event objective** clearly occurs or does not occur. Logical measurement is used as a basis for determining whether a binary-event objective has occurred (i.e. to acquire a new subsidiary, to complete the construction of the hospital).
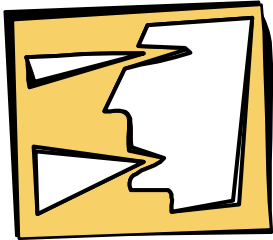
Qualitative objectives are those judged subjectively to decide if they have been attained. Axiological measurement or measurement that is judgemental yet more of less evident maybe accomplished through interviews (i.e. to improve the appearance of a product, to improve the health of the target groups).

The major **assumption** underlying the objective tree is the hierarchical relation between objectives. The objectives for a project may be uncertain or ambiguous because they have not been articulated by the interested parties and because goals are not constant over time. The objective tree technique assumes that the objectives higher in the tree are less variable over time and that they are shared by a larger number of interest groups. The assumption that qualitative objectives can be sub-divided into quantifiable sub-objectives is implicit in the technique. Its validity does not affect the use of the objective tree to explicitly reveal goals and ends, whether they are reasonable or not.

During the formulation stage of an objective tree it is important that the participants do not strive for perfection. Since the work is usually undertaken as a group exercise initially a lot of effort is needed merely to get the process started. The interaction between the objectives often only becomes apparent after the initial framework of the tree has been developed. As the tree begins to evolve during the planning process, the participants begin to consider more carefully and they also refine the tree step-by-step. The following step provide a very generalised approach for developing an objective tree:

Principles and General Procedures

Step 1: Generate an initial list of objectives:

▶ Define the problem area (use of brainstorming technique).
▶ Identify the people who will be involved in designing or directing the project.
▶ Elicit their project related objectives.
▶ Identify as many project objectives as possible, without attempting to structure the objectives.

Step 2: Identify an overall objective

▶ Identify an overall objective for the project, to which all other objectives will relate. This objective will reflect a value judgement and it will need some form of measurement (e.g. axiological). Examples of such objectives include: "to meet the needs of the community" or "to achieve equality in housing benefits".
▶ This objective is positioned are the first level of the tree or even in the centre of the tree. All other objectives will be positioned below this one (means for achieving the objective) or above it (ends result of the objective).
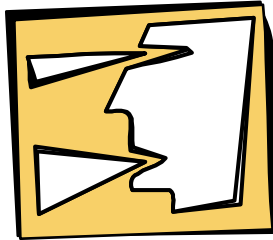
Step 3: Extend the tree one level down

▶ Select objectives for the next level down fro the list generated in step 1 or generate additional objectives by asking "what are the sub-objectives necessary to accomplish these objectives". This is the branching rule for this type of tree diagram.
▶ Draw lines on the tree to connect these lower level objectives to the objective they help to achieve.

Step 4: Extend the tree to the next lowest level

▶ Choose one of the objectives listed at the current lowest level of the tree. Identify sub-objectives that help to achieve it.
▶ Repeat steps 3 for all other objectives at the lower level most recently constructed. Another level of objective results when all the objectives in this level are dealt with.

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Principles and General Procedures

Step 5:   Review the tree or hierarchy:

▶ Review the tree constructed in order to determine whether objectives are missing; an intermediate objective level may need to be added; whether the tree needs to be further extended upwards (additional ends relationships); an objective at a lower level is seen to achieve more than one objective at some higher level. In this case, redefinition of the objective is necessary.

▶ If the tree appears to be complete it is possible to move to step 6, otherwise it is necessary to return to step 4.

Step 6:   Check the measurability of the lowest level objectives

▶ Take an objective at the lowest level objective tree. Ask the question: Is this objective measurable? This is the stopping rule for the tree diagram. The measurability of an objective depends on two processes:

1. The selection of a measure or units by which the attainment of objectives will be assessed (this should be objectively verifiable).
2. The design of a measurement scale and data collection process, to aid in determining the degree to which an objective may be reached.

▶ Generally the objective at the lowest level will be quantitative or binary-event. Quantitative objectives generally have a numerical threshold to indicate what performance is acceptable.

▶ If the lowest level objective is not measurable, then extend the objective down one more level, i.e. return to step 4.

▶ Repeat step 5 for each of the lowest level objectives.

Objective Analysis

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