1. Introduction

There are a number of other estimation approaches that can be used, sometimes in conjunction with, but often as an alternative to the constructive cost model (COCOMO) or function point (FP). In practice, a project manager may never use COCOMO or FP analysis, for example, because the project involves the use of packaged software that requires customisation rather than the development of new software.

In this topic, we will discuss other alternative estimation approaches that can be used to plan and manage project durations.

Objectives: Alternate Estimation Approaches

Upon completion of this topic, you should be able to

- describe alternative estimation methods based on analogy, expert judgement, Delphi technique and work breakdown structure.

2. Alternative Approaches

Some of the alternative estimation approaches are:

1. Analogy
2. Expert judgement
3. Delphi technique
4. Work breakdown structure (WBS)

Click each **tab** to learn more about each alternative approach.

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**Alternate Estimation Approaches**

**Analogy**

Analogy can be used when the system being developed shares common functions or features with a system that has been developed previously. However, the approach does assume that reliable data has been collected about the previous system. The approach is very useful if an organisation develops many variations of the same type of system or specialises in the development of a particular type of software or application.

**Expert judgement**

This approach relies on the knowledge and experience of practitioners who have a track record of successful IS development and who are able to use this experience as a platform for making sensible judgments. Such an expert may be able to uncover...
issues or areas of additional work that would otherwise have remained hidden to a novice manager. The approach is essentially still a 'guestimate' but one made by someone who carries authority and expertise in the area.

**Delphi technique**

This approach is similar to the approach based on expert judgment, except that it relies on the use of multiple rather than a single expert. The aim is for a group of informed experts to reach a consensus on their estimates. In the first round, each expert makes an estimate independently. Next, the expert has a chance to revise his or her estimate based on knowledge of the estimates made by the other experts. In general, one finds that after the second round, the estimates will have converged towards some middle ground. Following this, an 'average' estimate may be taken, or the group may get involved in face-to-face discussions to further refine their estimate. The approach is helpful in minimising the affect of individual bias.

**Work breakdown structure (WBS)**

A WBS organises the activities or components of a project hierarchically so that the elements of a project can be estimated individually. In short, it is a way of breaking a project down into parts and assigning a budget or estimate to each part. There are two main types of hierarchy. A product hierarchy describes the components of the overall system. An e-Commerce application, for example, may have a product catalogue component and a shopping cart component. An activity hierarchy on the other hand describes the activities associated with the project. This includes engineering activities such as requirements, design, code and test. However, it also includes management, documentation, training and other kinds of activities related to the project. If an organisation is able to consistently use a standard WBS, valuable data can be collected for each element of a WBS that can be used for estimation purposes in future projects.

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**Reading: Alternative Estimation Approaches**

Read the article “[[Software estimation using pattern analogies]]” from Developer.* which discusses how ‘patterns’ can be used for estimation by analogy.

For more details about the worldwide community involved in the use of Function Points, go to [The International Function Point](http://www.functionpoint.org) users group.

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**3. Summary**

This topic covered the following main points:

- There are several alternative approaches to estimation, all of which rely upon human judgment and may be used in combination with other approaches.
- Analogy can be used when the system being developed shares similar features to a system developed in the past.
- Expert judgment relies on the advice and opinion of experts who have a successful track record of estimation.
- The Delphi technique seeks expert judgment from multiple experts and attempts to achieve a consensus estimate.
- The work breakdown structure decomposes a project into its various components, each of which is separately estimated.