Contents

Definition

> A tentative evaluation or rough calculation
>
> A preliminary calculation of the cost of a project
>
> A judgement bases on one's impresions; opinions

Difference from Targets and Commitments

- Target: Description of a desirable business objective
- Commitment: A promise to deliver defined functionality at a specific level of quality, by a certain date
- Which is more amibitious?
  - Commitment

How is it Different from a Plan?

- A plan is biased
  - Goal seeking process
- A plan usually has a target
- An estimate should be *un-biased*

Typical Estimate

- Simplistic single-point estimates assume that nothing will go wrong
  - Unrealistic
- Better to show a range of duration

Probability of Success	Estimated Completion Time
90%	24 Weeks
75%	22 Weeks
50%	20 Weeks
25%	18 Weeks
0%	16 Weeks

> A good estimation approach should provide estimaes that are within 25% of actual results, 75% of the time

Why does this not Happen?

- Staff not ready when planned
- Requirements moved
- Staff diverting to support trade show
- Unstable functionality removed
- Requirements added
- Less experienced staff than expected
- Staff diverted to support old project
- More requirements added

A Good Estimate

> A good estimate is an estimate that provides a clear enough view of the project reality to allow the project leadership to make good decisions about how to control the project and hit its targets

How do you Produce a Good Estimate?

- Count

    - Things that are highly correlated with size of softtware being estimated
        - Use Cases
        - Number of UIs, Data Tables, Web Pages, …
    - Things are available as early as possible
        - High level use cases
            - Refine as soon as you get low level use cases
    - Things you have counted before
        - So you have meaningful statistics
- Compute
    - Use historical data to convert count into estimate
- Judge
    - Only as a last result
    - Last accurate mechanism
    - Most subjectivity and bias

Judgement Techniques

- Decomposition and Recomposition
    - Divide project into smaller parts
        - Choose form of decomposition
    - Estimate each small part
        - Use multiple techniques to arrive at estimates
    - Recompose
        - Sum up/Multiply

Techniques

- Select similar projects
- Combine with decomposition and recomposition

Recommended Estimation Process

- Use multiple types of estimation approaches
- Use experts to converge on a range with probability distribution
- Revise at least twice, as more detail is available

Other Estimation Procedures

- COCOMO
  - Based on lots of historical data
  - Based on lots of experts
  - Well-known
- Function Points
  - Counting ‘functions’ in a software
  - Different types of ‘functions’
    - UI
    - Computation
    - Transaction
    - ...
  - Not well known
- Wideband Delphi