

Estimating using Wideband Delphi Method

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Topics

- Estimating using Wideband Delphi
- Exercise



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Estimating Problems

- Little training in good estimating techniques
- When Management asks for estimates, often they are interested in something else...
- Characteristics of many estimates:
 - Derived using “gut feel”, “finger in the wind” methods
 - Not supported by data or factual information
 - The answer the boss wants to hear
- “It is difficult to make a vigorous, plausible, and job-risking defense of an estimate that is derived by no quantitative method, supported by little data, and certified chiefly by the hunches of managers”.

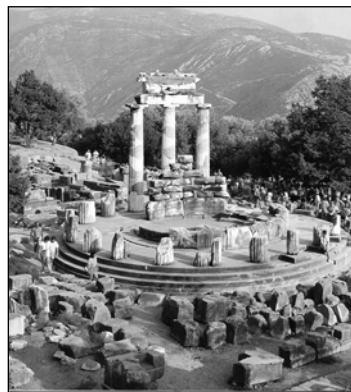
Brooks, F., The Mythical Man-Month, 25th Anniversary Edition, Addison-Wesley, 1995

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Wideband Delphi

- Delphi is best-known for an oracle at a sanctuary dedicated to Apollo
- An oracle is a person considered to be a source of wise counsel or prophetic opinion; an infallible authority
- In ancient world many sites gained reputation for dispensing oracular wisdom...



Remains of temple at Delphi, Greece

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Wideband Delphi

- **Barry Boehm and John Farquhar originated Wideband variant of Delphi method – developed by Rand Corp. in 1940's**
- **Called "wideband" because compared to existing Delphi method, this method involved greater interaction and more communication between participants**



Boehm, B., Software Engineering Economics, Prentice-Hall, 1981

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Wideband Delphi Method

- **Consensus-based estimation technique for estimating effort**
- **Useful when estimating time to do a task that's unlike anything you've done before**
- **Several experienced staff members given problem statement and separately estimate how long it would take them to complete task – assuming they could work uninterrupted**
- **When done, estimates are collected and analyzed**
- **Differences in assumptions are discussed...**

Boehm, B., Software Engineering Economics, Prentice-Hall, 1981

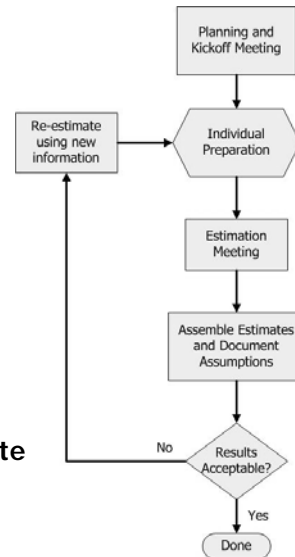
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Wideband Delphi Method

• Process Flow

- Team consists of 3 or more experienced staff members
- At kickoff meeting, task to be estimated is presented
- Each person estimates how long it would take them to do the work assuming they could work uninterrupted
- At Estimation Meeting, all estimates are plotted and underlying assumptions discussed
- Agree on assumptions and re-estimate
- Continue till results converge...

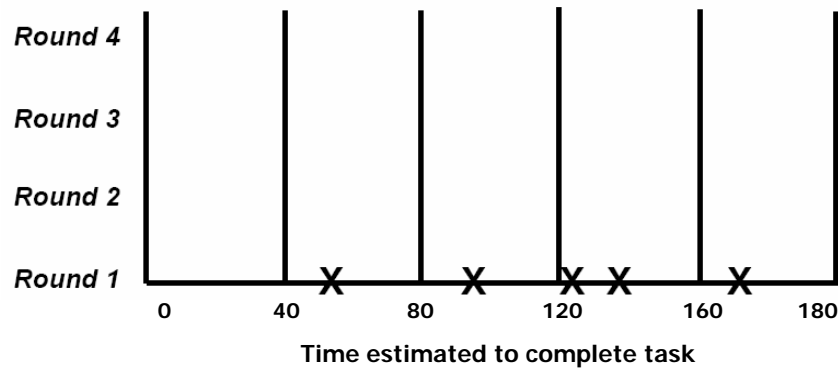


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Wideband Delphi Method

Results after first round:



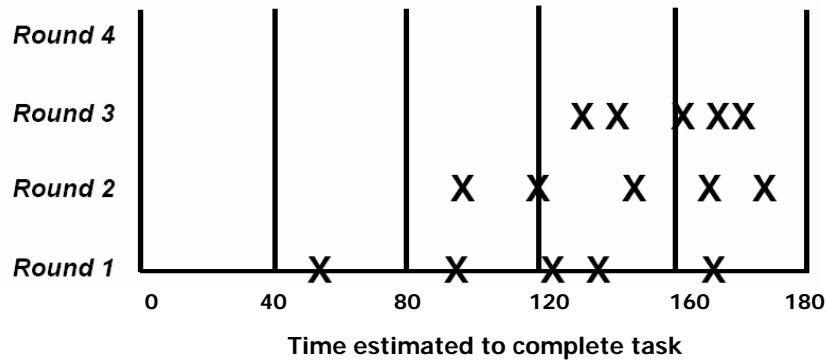
Wiegars, K., "Stop Promising Miracles", *Software Development*, 2000.

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Wideband Delphi Method

Results after three rounds:



Wiegars, K., "Stop Promising Miracles", *Software Development*, 2000.

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Wideband Delphi Exercise

- **Task: Build a shed**
- **Estimate: time in hours**
- **Assumptions:**
 - Do all work yourself
 - Work uninterrupted
- **Shed Requirements**
 - Pressure-treated wood
 - 8 feet square and 8 feet high at the center
 - One door and one window centered on opposite walls
 - Asphalt shingled roof
 - Cement block floor



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Summary

- **Pros**

- Very simple process
- Consensus-based estimates are often more accurate than individual estimates
- People who would do the work are making estimates
- Assumptions are documented, discussed and agreed

- **Cons**

- Requires management cooperation
- May not result in the answer the boss wants to hear

Wideband Delphi Estimation Exercise

Task	Assumptions	First Estimate	Second Estimate	Third Estimate

Wideband Delphi Estimation Exercise

Task	Assumptions	First Estimate	Second Estimate	Third Estimate