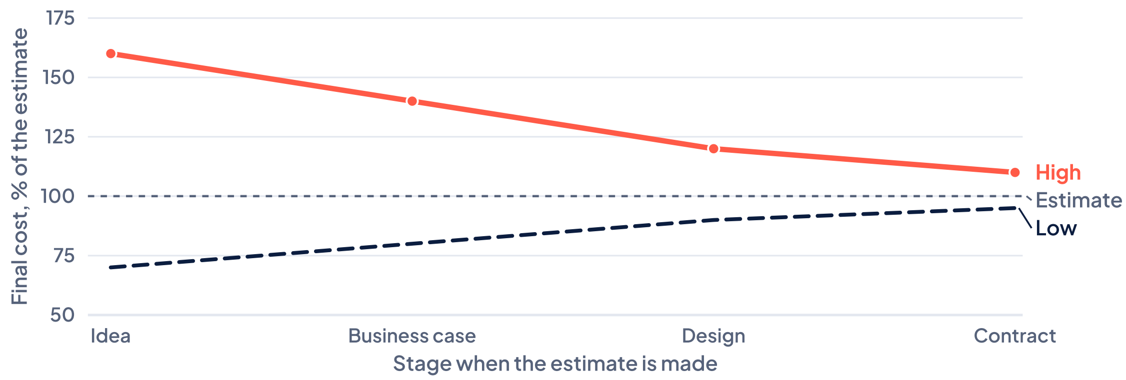
Estimating techniques by stage

Fit the technique to the stage and the data, and show how wide the estimate still is.



Our own illustrative cone: where the final cost may land, by the stage of the estimate. The high side is wider.

WHAT IT IS

Early, estimate **top-down**: by analogy with a similar past job, or with a parametric rate. Later, estimate **bottom-up** from the work packages, with the people who will do them. Iterative teams size items against each other in story points; in planning poker (Grenning, 2002), all cards show at once. Ranges narrow as facts arrive (Boehm, 1981): the **cone of uncertainty**.

HOW IT WORKS

01 **Analogous**: a similar past job, adjusted; quick but rough.

02 **Parametric**: a quantity × a rate from past data.

03 **Bottom-up**: each work package with its doers, added up.

04 **Delphi** (Dalkey and Helmer, 1963): experts estimate alone, see the spread, repeat.

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team has eight months to move resident parking permits online; 58 users (18 at the service desk, 40 parking wardens) need training.

A parametric rule: 58 users in groups of about 10 make 6 sessions (5.8, rounded up); at half a day each, 3 trainer-days. The project manager checks it against the trainers' bottom-up estimate.

In the exam: Name the technique and why it fits, show the arithmetic, give a range, and check it with a second.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months, in three groups, with a steering board.

The project manager writes one estimating guide for all teams: the technique at each gate, estimates collected before any target is shared, a review of the largest work packages; later groups reuse earlier results.

In the exam: Describe the **estimating system** you set: techniques by stage, who estimates, how bias is checked, how results feed back.

WHERE IT SITS

IPMA · ICB4	PMI · *PMBOK® GUIDE* 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.5.7 knowledge: cost estimating methods (p. 123); 4.5.7.1: top-down or bottom-up	Guide p. 52: techniques, incl. Delphi, story points; p. 119: accuracy rises. Outline: tasks 1, 8	BoK (APM's Body of Knowledge) §5.4.1: comparative (analogous), analytical (bottom-up, incl. Delphi); the estimating funnel. PMQ (APM's Project Management Qualification) 20c

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026); Dalkey & Helmer (1963), the Delphi method; Grenning (2002), planning poker; Boehm, Software Engineering Economics (1981)