BEST PRACTICE IN COST ESTIMATION

Presentation by :

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OBJECTIVE

- **The attendee will be able to:**
  - *Describe a unit price bid*
  - *Decide when and where the different types of estimates are used*
  - *Illustrate the different parts of the unit price estimate and describe them*
  - *Explain how the different types of cost play a role in construction estimating*

Procurement Defined

Procurement is the methodology used to buy design and construction services.

Construction Contracts

- **Method of pricing**
  - *Fixed-price*
    - Lump sum contract
    - Unit price contract
  - *Cost-plus*
    - Cost plus percentage of cost
    - Cost plus fixed fee
    - Cost plus fixed fee with a targeted maximum cost
    - Cost plus incentive fee
  - *Guaranteed Max Price*
    - GMP plus percentage of cost
    - GMP plus fixed fee
    - GMP plus a fixed fee plus share of savings - incentive

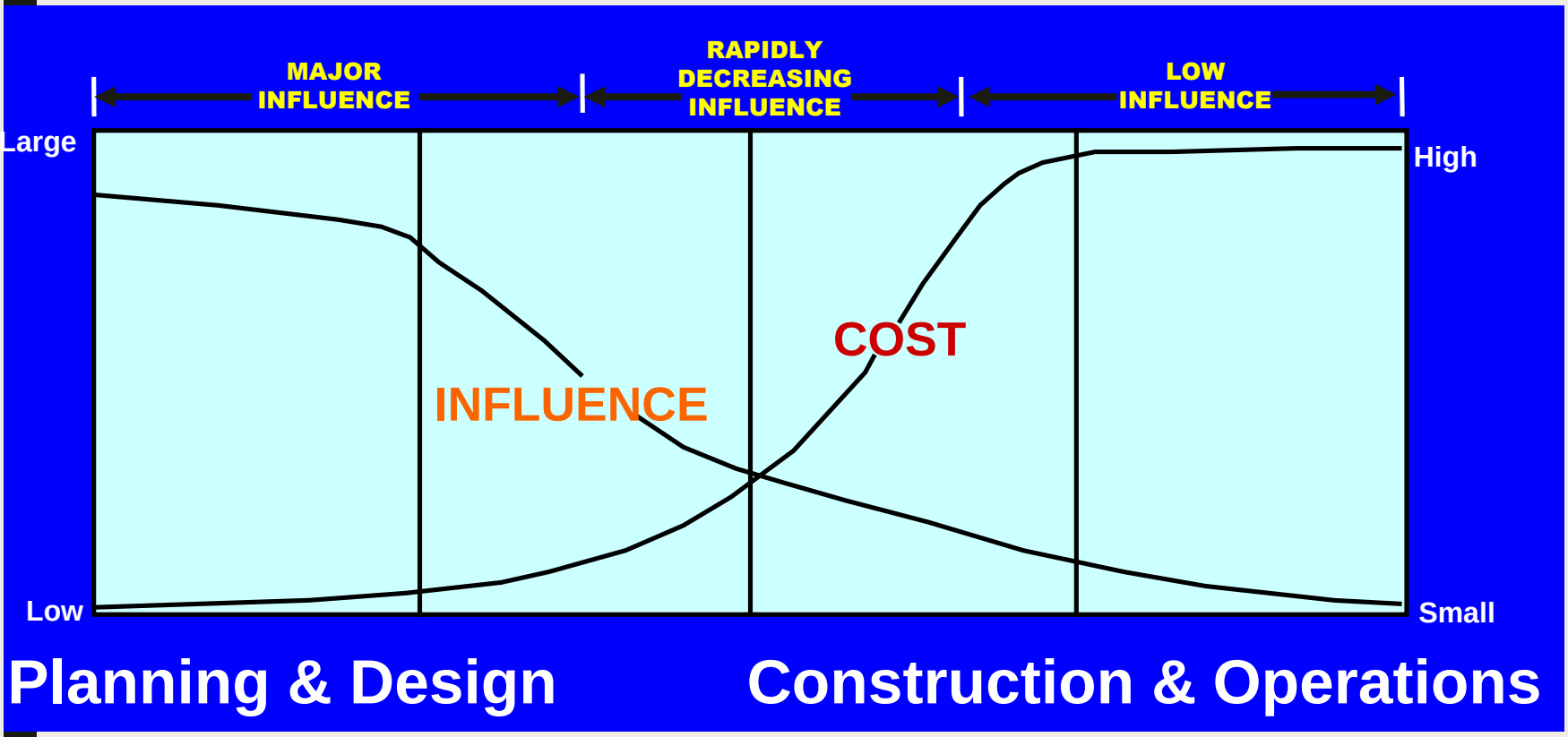
- **Method of award**
  - *Competitively Bid contracts*
    - With designer doing Project Supervision
    - With CM – agency
    - CM at Risk
    - Design Build
  - *Negotiated contracts*
    - GMP
    - Design Build
    - Negotiated Lump sum
    - CM at Risk

Procurement Options

- Sole Source/Direct Selection
- Negotiated procurement
- Competitive
  - *QBS – Qualification Based Selection*
  - *BVS - Best Value Selection*
  - *Low Bid*

Influence *vs.* Cost

Project delivery selection influences when contractor gets on board.
Contractor on-board early allows best opportunity to achieve objectives

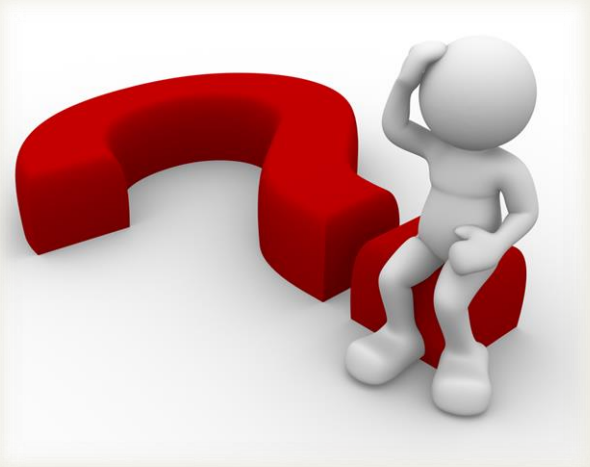


Risk in Construction

- Equipment productivity
- Labor productivity
- How material may react differently in different circumstances
- Locations
- Lower number of subcontractors on job
- Fuel costs
- Soil Conditions (acting different than expected)

How does Risk change the Estimate?

- Higher profits
  - *Commercial Profits – 1% to 5%*
  - *Heavy Profits – 8% to 15%*
- Less return on investments
  - *Large cost of equipment*
- Contingencies for potential escalation costs



Cost Estimates take on two styles:

- Detail Estimates for Lump Sum Contracts and Subcontracts
- Unit Price Estimates

The Pay Quantity vs. Bid Quantity

- **Bid quantity**

  Defined as a quantity of individual units of work that represents the owner's engineer's estimate of the number of units of that type work included in the contract.

- **Pay quantity**

  Defined as the quantity that is calculated when the work is completed and will be paid for by the owner

Indirect Cost : Lump Sum vs. Unit Price

- When bidding a lump sum, the quantities are not given and certified by the owner. The contractor is responsible for quantity determination. The owner will pay the lump sum bid amount plus any changes.

- When bidding a unit price contract, the engineer is giving the contractor the quantities and will pay the contractor the in-place quantities. Provisions are made when quantities get substantially out of balance.

What Happens if there are Inaccurate Bid Quantities?

- **First on a Balanced Bid**
  - *Most specifications allow for change if quantities are grossly inaccurate. If there is no provision, the contractor could have the wrong equipment, too much equipment etc.*

- **Next on an Unbalanced Bid**
  - *Contractor plays the risk of being determined as non responsive and bid being rejected.*
  - *Owner could be paying a premium on the work.*

Preparation for Price Estimation

Subcontractor Determinations

Estimator determines the scope of work that will be subcontracted.

Begin Takeoff for Self Work

Estimator begins takeoff of quantities of work this contractor will do with their own forces.

Request for Material Quotes

Estimator determines the scope of materials and sends out for quotes.

Site Visit

Estimator schedules a site visit (Mandatory vs. Voluntary).

Summary

- Cost Estimate is either Lump Sum or Unit Price.
- More risk is associated with Heavy Construction work vs. Commercial work.
  - *Equipment productivity*
  - *Labor productivity*

End of Session

Questions?