Long Term Affordability through Knowledge Based Bid & Proposal

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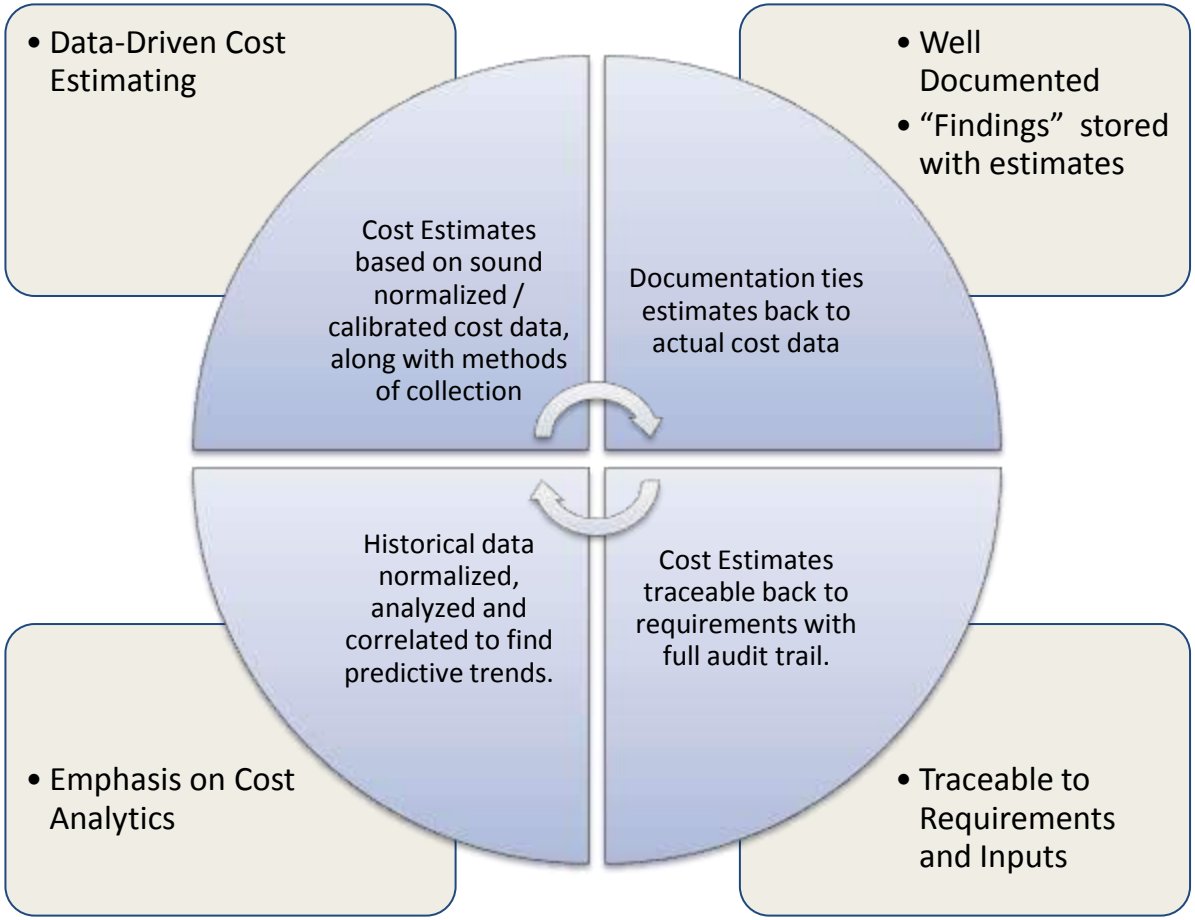
The Current Environment

- Over the last 40 years, creating realistic cost estimates based on sound data and methodologies has proved an elusive goal.
  - As far back as 1972, the US GAO stated that cost estimates for specific systems were “frequently revisions of previously developed estimates and that accurate revisions of both the original and updated cost estimates required documentation showing data sources, assumptions, methods, and decisions basic to the estimates. “
  - This has led to estimates that were too optimistic, leading to costly over runs.
  - Early initiatives such as CAIV in the mid-1990’s have failed to contain over optimistic estimates.
    - *Of the six original CAIV programs, half experienced a Nunn-McCurdy Cost Breach and none of the programs reviewed achieved a 50% savings as was originality envisioned.*
  - Recent initiatives such as the Weapons System Reform Act of 2009 has placed more emphasis earlier attention on both requirements, cost and schedule.
  - US GAO Cost Estimating and Assessment Guide provides best practices to develop sound estimates and is ongoing.

Main Features of Credible Cost Estimating Systems



Recent benchmark data highlights the need for greater investments in these areas

APMP Benchmark– Tools/Resources

Association of Proposal Management Professionals (APMP)

- 100% of those surveyed reported that “Historic cost databases” are important to success and that 87% reported the same for “Parametric cost estimating tools”

Candidate Investments for PTW/CA Tools and Resources	Perceived Importance to Success				
	Very Important	Important	Somewhat Important	Not Very Important	Not at All Important
Training	46%	27%	27%	0%	0%
Targeted acquisition of tools	18%	36%	36%	9%	0%
Subscriptions to information services	36%	41%	18%	5%	0%
Historical cost databases	36%	41%	23%	0%	0%
Parametric cost estimating tools	32%	32%	23%	9%	4%
Knowledge bases, CRM, etc.	18%	32%	36%	14%	0%

Source: APMP Benchmarks in Price-to-Win and Competitive Analysis Capability. Howard Nutt

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APMP Benchmark- Commonly Used Tools

Association of Proposal Management Professionals (APMP)

- 40% perceive PRICE model (TruePlanning®) as important for success while…
- *80% commonly perceive "Custom Excel spreadsheets" as important for success while another report says that 88% of spreadsheets have errors according to MarketWatch!*
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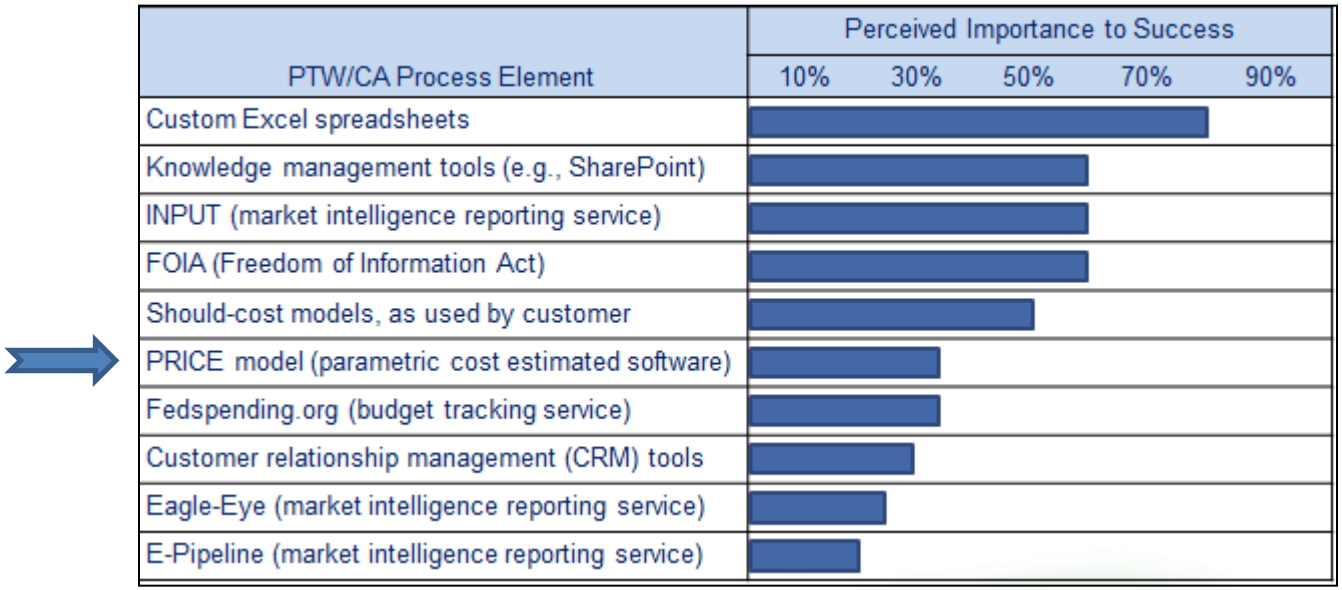

http://www.marketwatch.com/story/88-of-spreadsheets-have-errors-2013-04-17?siteid=nwtpm.

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Sustaining Long Term Affordability

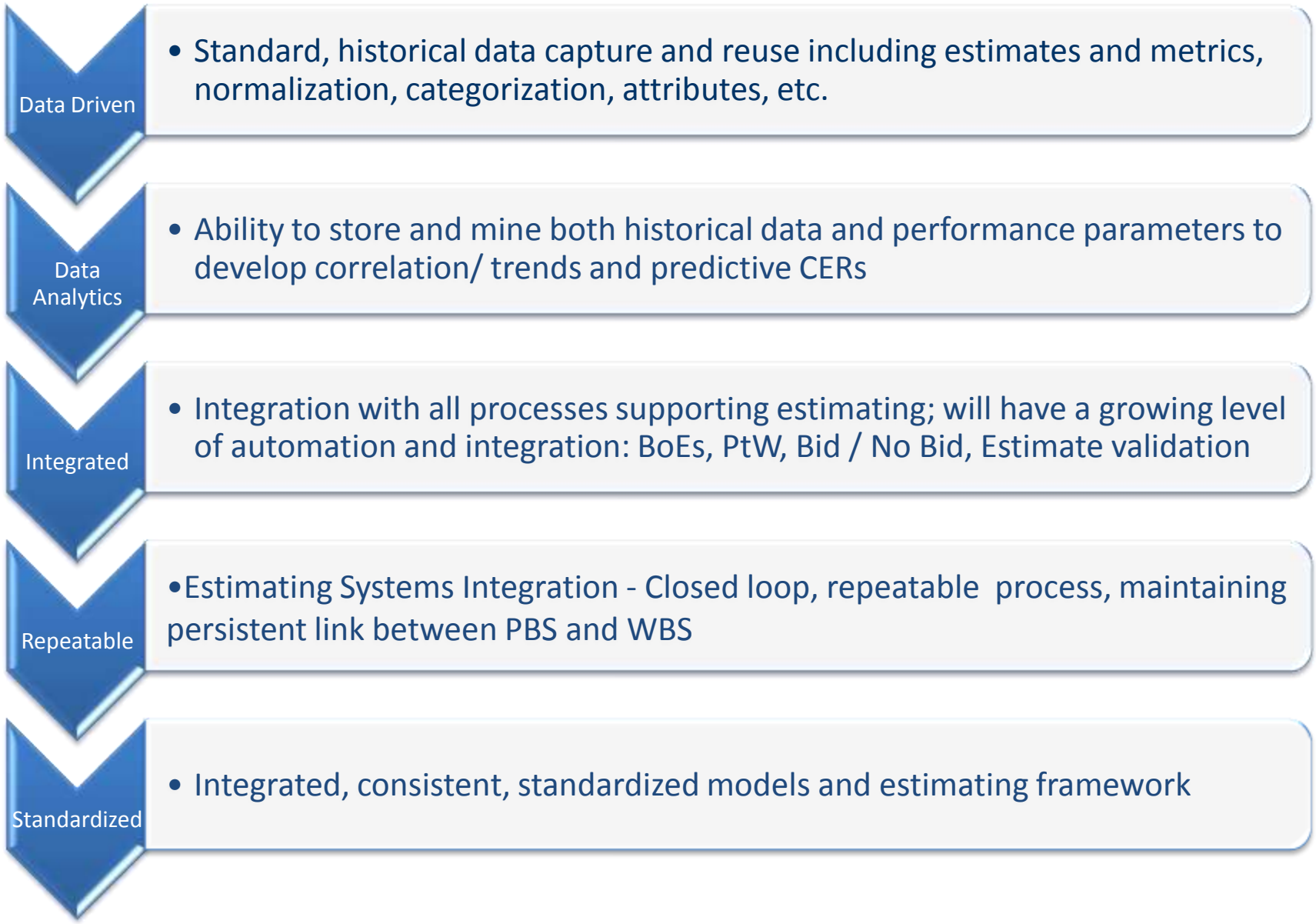
- Cost Estimating practitioners must have robust tools to:
  - Perform data analytics, create usable findings to drive parametric models.
  - Store results in easily searchable databases to use as estimate building blocks.
  - Fully store documentation along with estimates, key inputs fully traceable to data analyzed.
  - Closed loop, integrated with other tools across the life cycle from requirements to EVM.

Organizations that implement estimating systems with *data-driven characteristics* using *integrated, repeatable* and *standardized systems* produce credible estimate that win!

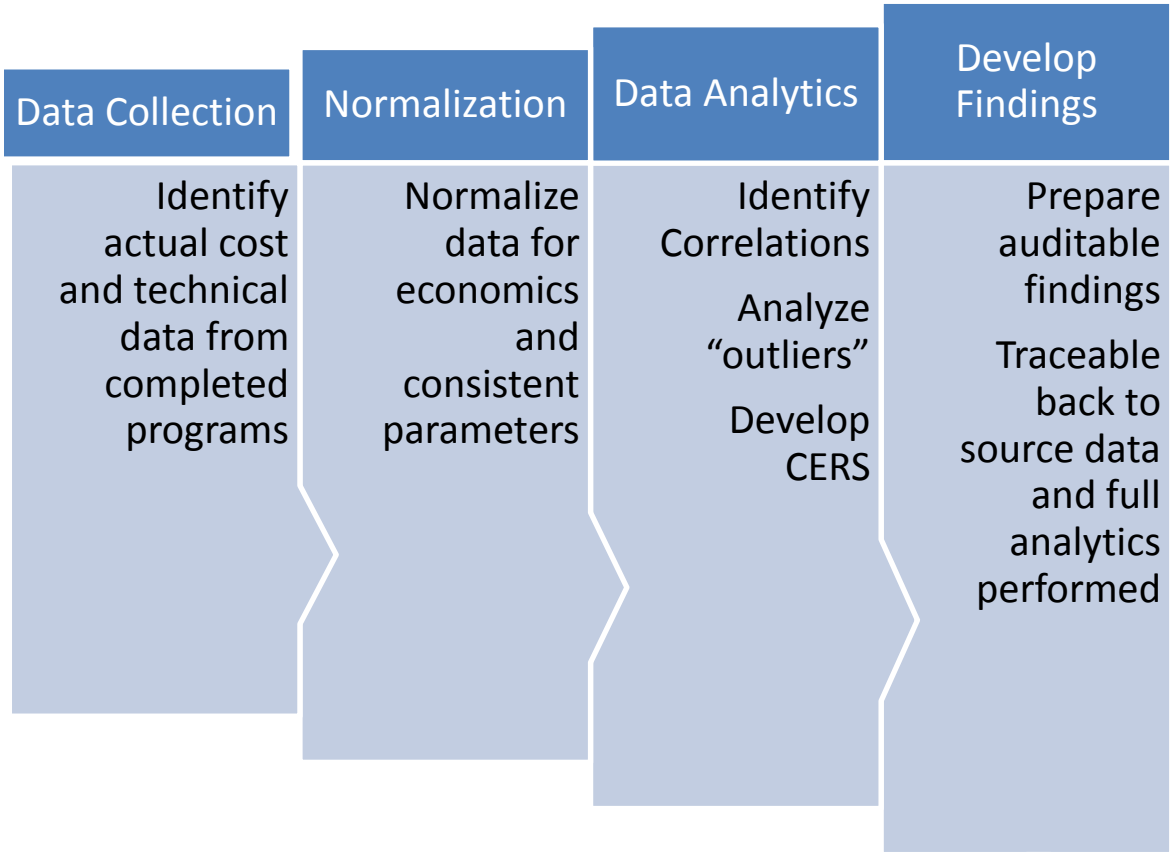
Everyday, a major decision depends on an estimate

 | *Decades of Cost Management Excellence*

Best Practices of Knowledge Based Bid and Proposal Systems

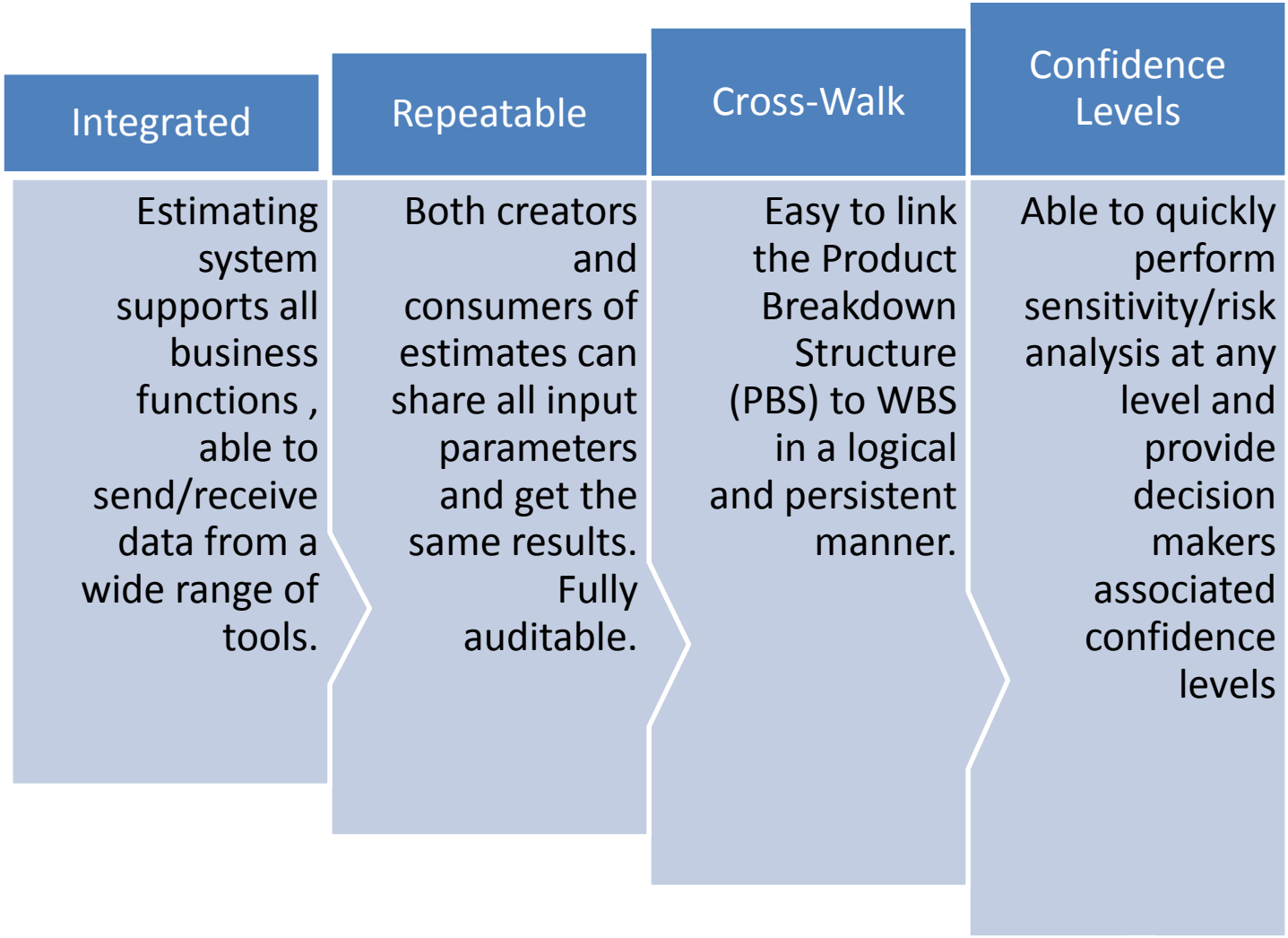


Data Driven / Data Analytics



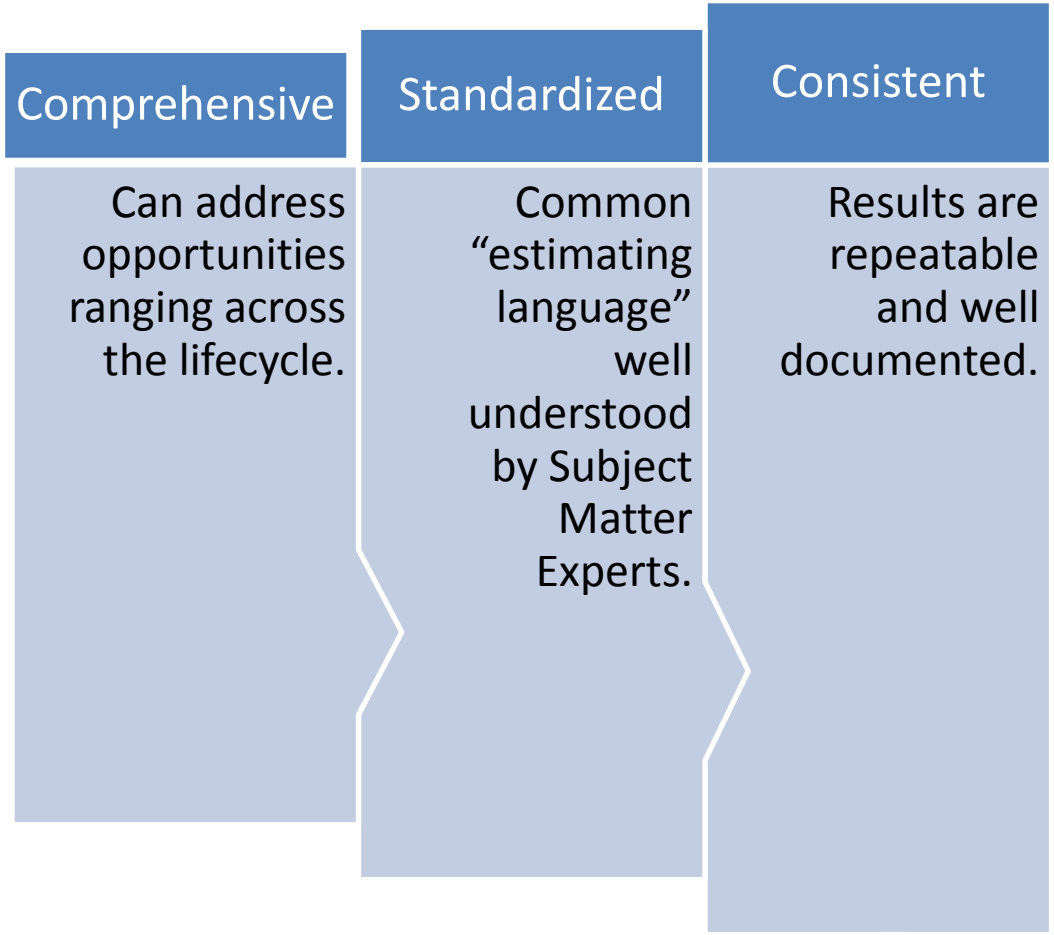
Estimating Systems that win must have proficiency in Data Driven Analysis linked to Auditable "Findings"

Integrated / Repeatable Results



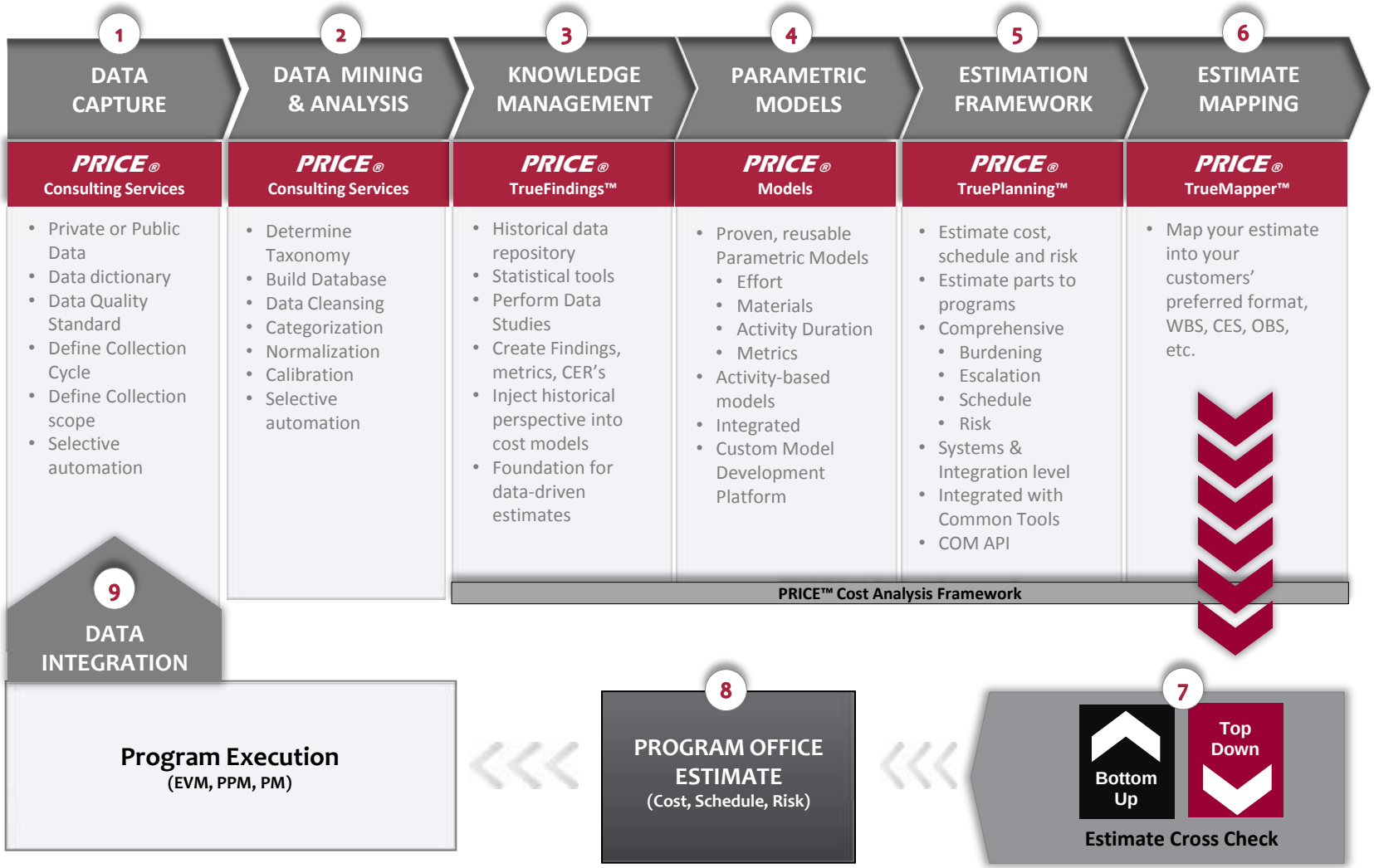
Estimating Systems That Win are based on Integrated and Repeatable Results

Standardized Framework



Estimating Systems That Win are based on Closed Loop , Standardized Framework

Knowledge Based Estimation Systems Integration



 | *Decades of Cost Management Excellence*

Bid Verification: Comparison of Parametric & Bottoms Up Methods

Parametric Estimates

- Top down
- Less detail
- Based on performance metrics
- Less labor intensive
- Quicker
- Ease of trade-offs analyses
- Parametric database
- Not always accepted
- "Black Magic" aura dispelled with data-driven
- Generally more disciplined
  - *Standard methodology*
  - *Independent*
  - *Done by trained analysts*
  - *Captures totality of past programs*

Source: Joe Hamaker

Detailed Build-Up Estimates*

- Bottoms up
- More detail
- Based on time and material
- Labor intensive
- Time consuming
- Trade offs need details
- Performance standards
- Accepted method
- Generally understood
- More susceptible to distortions
  - *Optimism/Pessimism*
  - *Special interest/buy-in*
  - *Done by managers/engineers*
  - *Missing*
    - *- "I forgots"*
    - *- Unknowns*

***AKA "labor-material build up", "grass roots", "bottoms up" "engineering estimates"**

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Conclusion

- Consistent use of Knowledge Based Bid Verification/Validation methodologies avoids over optimism
  - Unbiased metrics from measured benchmarks
  - Provides consistent and credible link to Price-to-Win
- Persistent link between “as built” Product Breakdown Structure (PBS) and “reporting” Work Breakdown Structure (WBS)
  - Reveals missing or inconsistent estimates
  - Reconciles Data-Driven estimates with grassroots estimates
  - Mitigates Risk
- Unifies “Top Down” Parametric Estimating with “Bottom Up” Grassroots estimating.
  - Creates “buy-in” across the organization
  - Minimizes errors and omissions

