

Cost Estimating...In Strategy? 'A' Career Path for Cost Estimating and Beyond

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Prelude...What can I do?

Prelude

- High Schools don't prepare students well for understanding career choices
- I was good at math...what could I do???

Engineer



Accountant





Chapter 1: The Lockheed Foundation

LM Skunk Works - The Foundation...FLDP

Overhead

- Calculate O/H Rates
- Budget and Track O/H
- Budget and Track Labor Hours
- Basic modeling and automation
- **CEBoK:**
 - 6. Basic Data Analysis

Treasury

- DCAA
- Invoicing
- How Govt. payments work

Contracts

- Types of CLINs: Cost vs. Fixed
- Acquisition process
- Customer budgets
- Contract closures
- Int'l difficulties
- **CEBoK:**
 - 14. Contract Pricing

LM Skunk Works - The Foundation...FLDP

Program Controls

- How \$\$'s are spent on a program
- Costs of different efforts
- Touching H/W
- Watching production process
- CEBok:
 11. Mfg Cost Estimating
 12. S/W Cost Estimating
 15. EV
 16. Cost Mgmt

Pricing – Parametric Estimating

- Dataset introduction
- Prices by kinds of A/C
- \$/lb
- CEBok:
 1. Cost Est. Basics
 2. Costing Techniques
 3. Parametric Estimating
 4. Data Collection & Normalizing
 8. Regression Analysis
 10. Probability & Statistics



Chapter 2: Warner Brothers...The Exploratory Years

Warner Bros - Exploratory Years

- Finance manager
- Sales estimates
 - Available data: sales by region, genre, time of year, etc, and estimate number of sales and best time to release
 - Kylie Minogue
 - R.E.M.
 - Josh Groban
- Realized power of using historic data to predict the future





Chapter 3: The Application Years (Lockheed Martin, Part Deux)

LM Skunk Works - Application Years

- Parametric Estimating
 - Advanced Cost Models
 - Full life-cycles
 - New Tech: Undersea, Biz Jets
 - Multiple platforms
 - Rotary Wing
 - Space
 - Ships
 - Unmanned
 - COTS S/W
- CEBok:
 - 5. Inflation
 - 7. Learning Curve
 - 9. Cost / Schedule Risk
 - 13. Economic Analysis





Chapter 4: Northrop Grumman / TASC

Expansion of Skills

NG / TASC - Expansion

- Learned of ICEAA. Certified and began teaching
- Internal customers
 - ICE's
 - Proposal Cost Estimates
- External customers
 - Navy - San Diego
 - SMC / SSC
 - AFCAA
 - PPI based inflation model
 - Global Hawk Assessment Report
- B-2 major upgrade - Nunn-McCurdy
 - Life-cycle cost estimate
 - 2nd role as Bus Mgr
 - Negotiating contracts
 - Geo location cost differences, business cases
- Tech Fellow at TASC
 - Helped write / edit early version of CEBOK

Cost Estimating...in Strategy!

- Position-To-Win (PTW)
 - Strategic pricing: Wraps / Overhead, Geo Locations, Labor Rates
 - Take advantage of CLIN structures for cost
 - Fee analysis
- Business cases
 - Business pursuits
 - M&A
 - Investment Allocation (NCTA / IRAD)
- Future Pipeline
 - Monte Carlo analysis of opportunities
 - “Cost” risk



Postlude: Non-A&D Application

Geek

- Stock options
 - Black Scholes
 - Regression on volatility
 - Days from earnings announcement
 - Institutional accumulation / decline
 - Historic prices

$$d_1 = \frac{\ln \frac{S_0}{K} + \left(r - q + \frac{\sigma^2}{2} \right) t}{\sigma \sqrt{t}}$$

- Cycling
 - 525 miles, 34K feet elevation gain
 - 8 Cyclists, ~25 historic rides each
 - 24 relay legs, 2 cyclists each
 - Estimated time: 32 hrs. 10 min.
 - Actual time: 32 hrs. 17 Min
 - Error of 17 seconds per leg





Postlude: Take-Aways

Take-Aways

- Employees today want more than a single-track career
- Help mentees recognize the skills they're building in current jobs, and how they can relate to future opportunities
- Look for people with 'out-of-the-box' backgrounds who have skills that fits as cost estimators
- Find opportunities to introduce people to cost estimating type functions
 - CEBoK courses
 - Company specific courses
- Get in the minds of students early
 - High School intern opportunities
 - Get involved in High School classes
 - Naviance



Thank you!