

Estimate History

1. See attached Estimate History Form.
2. Cost overrun factors not related to estimate development include:

1)	Late project completion	\$4.6 million
2)	Escalation rate variation	\$1.7 million
3)	Internally approved scope changes	<u>\$16.0 million</u>
	Total	\$22.3 million

Cost overrun factors attributable to estimating:

1)	Productivity rates	\$7.9 million
2)	Estimate omission	\$2.1 million
3)	Purchase order variation	<u>(\$0.5) million</u>
	Total	\$9.5 Million

Therefore, about 30% of the total cost increase was related to estimating efforts.

3. Original estimate: Price \$142 million
 Internal approved scope changes \$ 16 million

 Estimate basis: \$158 million

 Actual cost: \$158.8 million

 Accuracy: 99.5% (0.5% overrun)

If allowances are made for assumptions that were not accurate but beyond the responsibility of estimating (delayed project completion and higher escalation rates), we see that the actual cost of \$158.8 million was actually lower than the \$164.3 million that might have been anticipated for the set of circumstances actually encountered by the project. On a "fair comparison" basis, the estimate was underrun for the set of assumed circumstances.

4. Specific recommendations:
 - a. Implement a feedback loop to ensure that actual productivity rates are reported back to estimating. This will allow estimating to stay current with valid rates and will confirm the accuracy of their estimating standards.
 - b. Provide an approach for better estimate review, requiring a team review of all assumptions and input. The overlooked piece of equipment in this estimate would have been caught if it had been properly reviewed by Production. There should have also been some question about using standard productivity rates for a new process during the estimate review. This likely would have resulted in more accurate rates in the original estimate.