

Concept Symposium 2006 Principles of Governance for Major Investment Projects

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**Organizational Governance and Project
Success: Lessons from Boston's Big Dig**

Organizational Governance and Project Success: Lessons from Boston's Big Dig

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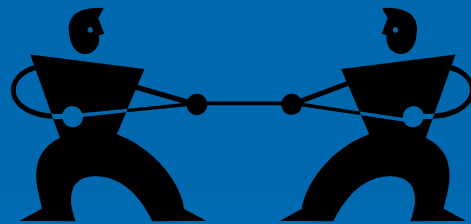
Project Governance

- *The use of systems, structures of authority and processes to allocate resources and coordinate or control activity in a project.*

Means of Governance

- Through top-down methods that primarily involve upper management oversight.
- Through market or competitive mechanisms that allow comparison across projects.
- Through professional standards of best practices.

Dynamic Tension



STANDARDS OF BEST PRACTICE

"NORMALIZATION OF DEVIANCE"

"Normalization of Deviance"

- Space Shuttle Columbia disaster
 - First Flight on 12 April, 1981
 - 28 Total Flights
 - 160 Crew Members
 - 4,808 Earth Orbits
 - DOZENS OF REPORTED CASES OF FOAM INSULATION STRIKES AGAINST FUSELAGE
 - Columbia Destroyed on Reentry (1 Feb 2003)

The Phenomenon?

- Well-intentioned organizations become desensitized to deviations from the norm.
- "Unexpected becomes the expected which becomes the accepted."
- In the Columbia example, insulating foam strikes became an accepted phenomenon of launches.

Implications?

- Up to 200% schedule and budget overruns are viewed as the “norm” in many organizations.
- Large capital projects routinely fail the test of successful project performance.

Boston’s Central Artery/Tunnel

- Project Scope
 - 8 miles of highway, almost half below ground.
 - 161 lane miles in total.
 - 14 lane, two bridge crossing of the Charles River.
 - Extended I-90 through South Boston, under the harbor, to Logan Airport.
 - Excavation of 16 million cubic yards of soil.
 - Use of 3.8 million cubic yards of concrete.

Escalating Costs!

YEAR	BUDGET (Billion\$)
1983	2.56
1989	4.44
1992	6.44
1996	10.84
2000	14.08
2003	14.63

Project Success Metrics

- Cost
- Schedule
- Functionality
- Stakeholder Satisfaction

Cost

- Were original estimates based on good faith or were they “tuned” to meet political realities?
 - “You’d be much, much better off saying up front, factually, ‘Hey, it’s going to take umpteen years likely and umpteen billion dollars rather than selling it as a kind of smoke and mirrors thing about ‘Oh, it’s two billion and a couple of years work.’”
- Thomas Finnerman, Massachusetts House Speaker, 2003

Schedule

- Over Six Years Late
- Chief Culprit – Poor Project Management Oversight (Federal Audit, 2000)
 - Project management organization routinely failed to hold contractors to their bids or time estimates.
 - No penalties applied for overruns.
 - Due to public outcry, managers stopped tracking and acknowledging these overruns.

Functionality

- 1998 – Office of Inspector General report cites numerous examples of problems with ceiling panel bolt and epoxy system.
- 2001 – Thousands of leaks appear in “completed” sections of tunnels. Cause: Contractor Modern Continental’s failure to remove debris prior to pouring concrete.
- May 4, 2006 – Six employees of concrete supplier arrested for falsifying records.

Functionality

- July 10, 2006 – Bolts holding 4 sections (12 tons) of cement ceiling panels failed, causing a section to collapse onto the tunnel roadway, killing a commuter.
- July, 2006 – Probe discovers 242 bolts already showing signs of stress throughout tunnels.
- August, 2006 – Tunnel system shut down for lengthy inspection and repairs.

Stakeholder Satisfaction

- March, 2006 - Massachusetts Attorney General demands \$108 million in refunds from contractors for “shoddy work.” Use of substandard concrete throughout tunnel system.
- August, 2006 – State of Massachusetts assumes control of Boston CA/T from Turnpike Authority.
- Turnpike Authority and Federal Highway Administration refuse to release documents, including:
 - Deficiency reports flagging initial substandard work
 - Construction change orders and contract revisions
 - Inspection reports on workmanship and building material quality

Where was Governance?

- Upper Management Oversight?
- The project was riddled with poor controls, both on the part of the primary contractors and the Turnpike Authority.

Where was Governance?

- Competitive Mechanisms Allowing Comparison across Projects?
- The uniqueness of the technical challenges and questionable means by which the project was funded precluded reasonable comparison.

Where was Governance?

- Professional Standards of Best Practice?
- Lawsuits alleging use of substandard materials, bid-rigging, falsifying records, and lack of overage penalties abound.

Fundamental Questions

- First: In the Governance of Major Projects, where does the “Normalization of Deviance” lead us?
- Second: What Role does the “Politicization” of Project Estimation and Control Play in Failure?

Fundamental Questions

- Third: What Success Metric(s) Represent the Sine Qua Non for our Project?
 - Do we adopt a “Cost, schedule, performance – pick two” approach?
 - Numerous examples of successful projects that failed on some metric.
 - Successful governance must locate and resolutely enforce the project success “tipping point.”

The Future of the Big Dig?

- The most expensive highway project in America.
- Labeled everything from “An Impressive Achievement” to an “Unmitigated Disaster.”
- It’s Future? Stay tuned!

“The Big Dig has now become almost a mythical thing in the American public works landscape, for good and for ill.”

- US Transportation Secretary Doug MacDonald