

Getting IT Quality Standards into Practice: *Confessions of a Texas IT Champion*

Herb Krasner

CISQ Advisory Board Member

Professor of Software Engineering, UT (Retired)

hkrasner@utexas.edu

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The nice thing about standards is there are so many to chose from

- ISO 9000, 9001, 9000-3, 12207, 16085
 - ISO 25000 series (previous ISO 9126)
 - IEEE 730, 1012, 1044, 1061
 - COBIT
 - ITIL
 - CMMI-Dev
 - PMI@ PMBOK (plus software extension)
 - Six Sigma
 - Malcolm Baldrige Award
 - Cost of Software Quality model, COO, Technical debt
 - Industry specific standards (e.g. automotive, medical devices, pharma, etc.)
 - Seminal models: FURPS, CUPRIMDA, McCall, Boehm
 - Company/organization/project specific standards ??
 - Cyber specific standards: UL 2900
- Stds without tools are a pain
 - Need to boil them down to their essence – find basic metrics using GQM

Tx IT Projects and Risk

- Texas' usage of IT is big and getting bigger, but past project performances have a “checkered” history. **A concern not widely recognized by the state leadership.**
 - **No visibility into the problems (systemic or specific)**
- Recent findings in Texas state agency IT projects
 - **2/3 of all large IT projects were off track**
 - Gotten worse from 2015 to 2017
 - **1/2 of all IT projects had high cybersecurity/legacy failure risks**
- **Leverage:** *“The (Tx) legislature intends that state agency IT projects will be successfully completed on time and within budget and that the projects will function and provide benefits in the manner the agency projected in its plans submitted to the department of information resources (DIR) and in its appropriations requests submitted to the legislature.”*
- How to effect change in this situation?

What I Did/Am Doing

- Testified to Tx State Legislature about one large troubled IT project (12/2015)
 - Led the IV&V team, \$100M over budget, hit the news, 15 min. of fame
- Held a 1-day event to crystalize the general problem and solution spaces (1/2017)
- Got involved with the law making process in Tx; found a leg. colleague
- **Wrote a new law that mandates all large IT projects measure and report on: cost, schedule, scope and quality (currently 77 such projects), and these measures are posted on a public dashboard and reported regularly to the legislature**
 - **If metrics *out of bounds*, increased monitoring and/or corrective action required**
 - **got the law passed (6/2017) 😊- Law went into effect 1/1/2018**
- **Making sure the law gets implemented properly**
 - **Need defined rules and tools, measurement models (wrote several position papers), introduced CISQ standard metrics for quality and size**
 - **Actively monitoring law implementation and raising concerns as needed**
- Goal: Reduce the risk of poor project performances -> impact too soon to tell
 - Early warning at least, baselines for improvement
- New requirement for an initial IT project execution capability assessment (other law)
 - Methodology in formative stage (currently just a checklist, needs improvement)
- Creating a cybersecurity pathway for high school students (STEM CS task force)
- Next steps: prepare for Jan. 2019 legislative session
 - IT procurement process; IV&V required; **lean, agile, 6 σ** for advanced IT orgs.

Lessons Learned

- If you want to improve the situation write a new law requiring the changes that are needed
 - Legislators are non techy, so they need our help
 - Monitor the implementation so it gets done right !!
 - Stay involved even though the bureaucrats don't want your help 😊
 - See what fed. govt. & other states are doing, industry too
- Focus on measurement since *“what gets measured, gets improved”*
 - Create the measurement context (GQM) and basic quality definition model (not ready for ISO 2502x ?)
 - Link to emerging measurement standards (e.g. CISQ) where applicable
- Learn and improve over time, KISS, iterate as necessary
 - Not rocket science, basic blocking & tackling, persistence

Q&A

- My references you can look at:
 - The new IT project monitoring law:
<http://www.capitol.state.tx.us/BillLookup/Text.aspx?LegSess=85R&Bill=HB3275>
 - My position papers and related blog entries:
 - Scope measurement:
<http://it-cisq.org/scope-measurement-on-large-it-projects-in-texas-a-position-paper/>
 - Quality measurement:
<http://it-cisq.org/it-quality-measurement-implications-for-large-it-projects-in-texas/>
 - Project performance measurement:
<http://it-cisq.org/measuring-it-project-performances-in-texas-house-bill-hb-3275-implications/>
- Questions ?
- Follow ups to hkrasner@utexas.edu