Success/Failure Patterns in Improving Organizational Software Capability

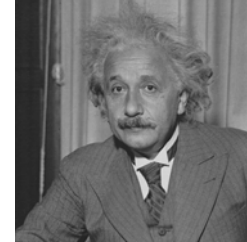**Rational.** software

Eternal Wisdom

"Make everything as simple as possible, but not simpler"

- Albert Einstein

"Success in the majority of circumstances depends on knowing how long it takes to succeed"
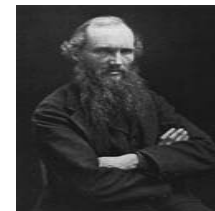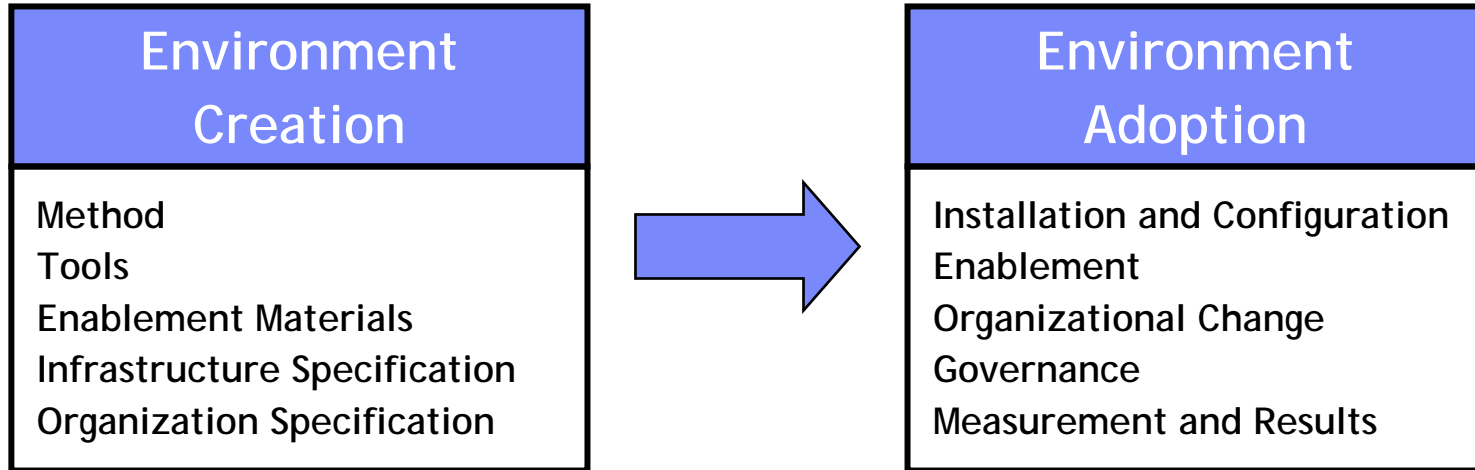- Charles de Montesquieu

"To measure is to know"

"If you can not measure it, you cannot improve it"
- Lord Kelvin

Improving Software Capability

Environment Creation

Method
Tools
Enablement Materials
Infrastructure Specification
Organization Specification

Environment Adoption

Installation and Configuration
Enablement
Organizational Change
Governance
Measurement and Results

Kotter Framework

- Kotter Framework is very well-known for introducing change to an organization (described in "Leading Change" by John Kotter)

- Kotter Stages:

  ▸ Establishing a Sense of Urgency

  ▸ Creating the Guiding Coalition

  ▸ Developing a Vision and Strategy

  ▸ Communicate the Change Vision

  ▸ Empowering Broad-Based Action

  ▸ Generating Short-Term Wins

  ▸ Consolidating Gains and Producing More Change

  ▸ Anchoring New Approaches in the Culture

Agenda

- A North Star to Navigate By [Success Defined]

- A Route to Reach the Destination [Planning Pragmatism]

- Waypoints to Assess Progress [Measurements that Matter]

Agenda

- A North Star to Navigate By [Success Defined]
  - There must be a driving business need to change
  - Leadership from the top is critical
  - The need to change must be understood throughout the organization
  - All stakeholders must understand and believe in the required changes
  - Critical to have a clear vision and strategy
  - All actions must ultimately align with the strategic goals
- A Route to Reach the Destination [Planning Pragmatism]
- Waypoints to Assess Progress [Measurements that Matter]

Case Studies

Pattern	Success	Failure
Client	**Large Banking Institution**	**Large Automotive Company**
Issue	Failed SoX Audit, sanctions handed down disallowed growth via acquisition	Failed SoX Audit, at risk of not being able to attest to financials for quarterly reporting
Goal	Remediate audit findings, appease auditors, be able to acquire other banks again	Remediate audit findings with auditable automated environment to reduce costs of manual and error prone "job-aids" put in place temporarily
Distinguishing Characteristics	Sense of urgency shared from top of organization to bottom Goals and time table shared with everyone in organization All pulling in the same direction	Goals and urgency not shared outside management chain responsible for tooling support "Hairball" of stakeholder groups/fiefdoms all established to protect status quo conspired to stall automation effort at every turn
Results	3.5 months achieved goals SoX apps now under 3 PoC CM/Build system 100's of users using new environment Freed to acquire banks again	2+ years later still struggling to get solution accepted by various groups. Still following costly manual job aids

Agenda

- A North Star to Navigate By [Success Defined]

- A Route to Reach the Destination [Planning Pragmatism]
  - ▸ All stakeholders must be "on the same page"
    - All affected parties need to know what to expect and when
  - ▸ Plan is very dependent on state change required and ability to absorb change
    - Cost reduction is approached differently than reducing cycle time for projects
    - Start process improvements with fundamental capabilities, build from there
  - ▸ Must have time-based goals identified, and actions aligned with these
    - Short-term wins are essential to build momentum and justify investment
  - ▸ Solution adoption can only occur through "execution" (doing real work)
    - Definition (customization, configuration, tailoring) is sometimes necessary but never sufficient
    - Process and tools must be *used effectively in real projects* to achieve technical and business results

- Waypoints to Assess Progress [Measurements that Matter]

Case Studies

Pattern	Success	Failure
Client	**Large Marketing Company**	**Large Retail Company**
Issue	Less competitive when bidding for contracts due to lack of visibility and predictability in development as well as development costs and improve time to market.	Disparate processes and systems impacts productivity and profitability of stores. Processes and systems not in place to adjust pricing real-time
Goal	Win more projects with competitive bidding, reduce software development and ensuing maintenance cost	Improve productivity and profitability through optimized processes and integrated systems
Distinguishing Characteristics	Adoption Through Execution approach which focuses on project mentoring was leveraged to get results quickly for adopting projects.

Organization wide adoption was supported by internal CoE for ongoing mentoring program. | Too much time was spent on process definition.

Deployment not done iteratively and not supported by experienced project mentors. |
| Results | Accurate estimation increased win ratio significantly.

Re-work and defect rate reduced which decreased project cost by 15-20% | 18 months later, there was no result to show for the huge investments made in process & tool definition and training.

Executive sponsors were let go. |

Case Studies

Pattern	Success	Failure
Client	**Large Transportation Company**	**Large Financial Company**
Issue	SEC audits found company's key assets (i.e., software code & documentation) was not adequately safe guarded.	Growing IT budget outpacing industry norms Competitive environment straining ability to deliver demanded functionality
Goal	To rapidly govern assets of all applications within 6 month window to meet re-audit deadline.	Improve productivity and reduce cost by 25% annually.
Distinguishing Characteristics	Focused solution designed to meet minimal needs. Assigned 13 of their best and brightest to learn how to migrate/mentor the organization into the new environment. Truly owned the adoption.	Adoption Through Execution-styled approach was leveraged on couple of key large new projects to attempt to improve time to market and reduce cost. Did not address legacy applications which accounted for >75% of IT spend.
Results	Accomplished feat with only up front design and mentoring help and final month of assistance to get across finish line on time.	No significant improvement such that when new executive entered asking questions after two years.

Agenda

- A North Star to Navigate By [Success Defined]

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  ▸ Measures at starting point important

    - Perceptions of improvement are important to gain support of teams, but financial results are needed to drive the investments to make change lasting

    - Need metrics that either already have been taken or can be taken immediately so impact can be ascertained over time.

  ▸ Measures should be few in number

  ▸ Measures should be relevant

    - They must be connected to desired goals.

    - Management must look at them and act on them.

  ▸ Measures should be publicized

    - Help to consolidate gains that are being made and anchor changes in organization

    - Encourages the skeptics to "jump on-board"

Case Studies

Pattern	Success	Failure
Client	**Large Automotive Company**	**Large Financial Company**
Issue	New mandate required all suppliers to be at CMMI Level 3 or higher.	Growing IT budget outpacing industry norms Competitive environment straining ability to deliver demanded functionality
Goal	Enable the IT organization to meet CMMI Level 3 as well to meet what is expected of suppliers.	Improve productivity and reduce cost by 25% annually.
Distinguishing Characteristics	Adoption Through Execution was leveraged to address all KPA's in order to have staged improvement Established two sets of measures - KPA Assessment levels - Post-Release Defect Density	Adoption Through Execution was leveraged on couple of key large projects to attempt to improve time to market and reduce cost. Established two measures - Licenses deployed - Users trained.
Results	In <3 yrs achieved Level 3 (from <1) and more importantly had reduced defect density by 15%	No measurable cost reduction documented when new executive entered asking questions after two years.

Summary

- Improving software capability often requires an organizational change
  - ▸ At least when done at any scale

- There are repeatable patterns of success to be followed
  - ▸ And repeatable pitfalls to be avoided

- Key characteristics of success include
  - ▸ A North Star to Navigate By [Success Defined]
  - ▸ A Route to Reach the Destination [Planning Pragmatism]
  - ▸ Waypoints to Assess Progress [Measurements that Matter]

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