21ˢᵗ World Continuous Auditing Symposium

Strategies for Improving Systems Development Project Success

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Overview

- Background
  - SDP failures and the dismal rate of SDP success
  - Control issues
- Research objective
  - Internal auditor's role in SDP success
- Research questions, methods, and summary of findings

Many SDP failures…

- December 2002: **McDonald's** abandons major project after two years. Cost: US$170 million

- November 2004: **Sainsbury** (UK super-market chain) writes off a £260 million IT investment in its supply chain

- February 2008: **Los Angeles Unified School District's** faulty US$95 million payroll system goes live. For months afterward, thousands are overpaid, underpaid or not paid at all.

- November 2010: **FBI** spent $405 million of the $451 million budgeted for new Sentinel case-management system, but, as of September, it's two years behind schedule and $100 million over budget

Few SDP Successes…

32%
Successful

24%
Failed

44%
Challenged
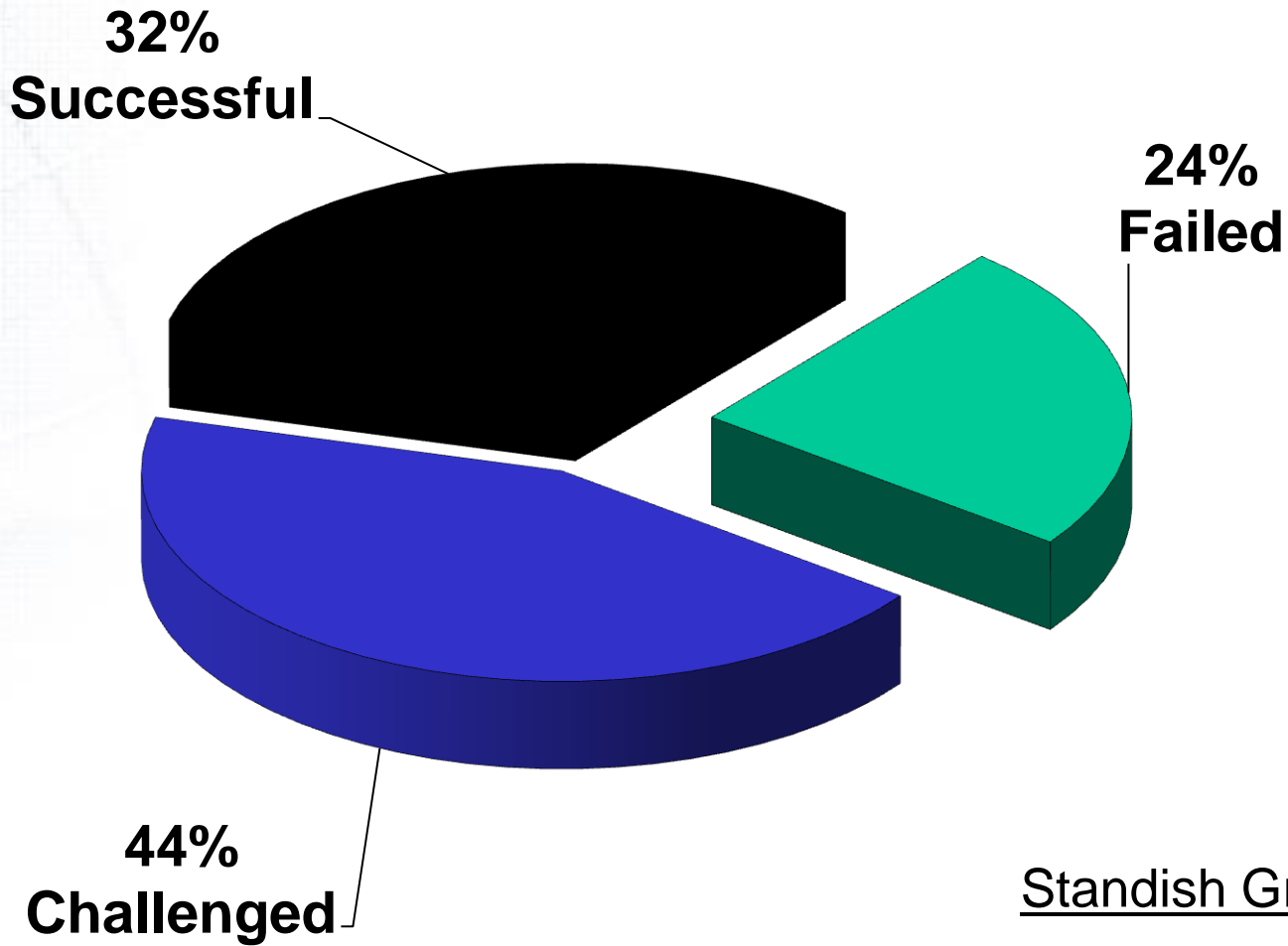
Standish Group [2009]

Costly Conundrum

- How do *failing* or *challenged* projects go undetected?
- Where were the 'red flags'?
  - Missed, dismissed, or ignored all together?
- Who's responsible for monitoring the controls and raising these red flags?

Many Reasons…

1. Lack of top management commitment to the project
2. Failure to gain user commitment
3. Misunderstanding the requirements
4. Lack of adequate user involvement
5. Failure to manage end user expectations
6. Changing scope/expectations/needs
7. Lack of required knowledge/skills in the project personnel
8. Lack of frozen requirements
9. Introduction of new technology
10. Insufficient/inappropriate staffing
11. Conflict between user departments

Keil, Cule, Lyytinen, and Schmidt [1998]

Research Objective

- To explore how <u>internal auditors</u> <u>currently</u> do and potentially can provide <u>value-added support</u> to proactively help identify and monitor system development project controls to either:
  - Help get these projects <u>back on track</u> toward success or
  - <u>Stop</u> projects when the investment in the projects is still relatively low

Post-SOX Changes?

- Pre-SOX: internal auditors usually came into a system development project *after* the project was completed to evaluate the internal controls

- Post SOX: internal auditors are more frequently active members of major system development projects, but—
  – auditor focuses on controls for the specific processes being automated, not the system development controls

Gray [2004, 2007]

Research Questions

RQ1: When and how should IA get involved in SDPs?

RQ2: For which factors critical to system success can IA add the most value?

RQ3: What metrics should be used to monitor SDPs?

Mixed-mode Research Method

1. Review IS and Internal Audit literature
   - CFFs and CSFs
2. Conduct IA focus group exploring RQ1 – RQ3.
   - Qualitative
3. Develop CSF taxonomy from an IA perspective
   - Qualitative
4. Survey a sample of The IIA membership
   - Quantitative

Critical Success Factors

- System Requirements
- User Involvement
- Systems Development Methodology
- Executive Support
- Quality Assurance
- Change Management
- Project Management Expertise
- Systems Interoperability

- Business Alignment
- Monitoring SDP Process
- Project Personnel
- Financial Management
- Vendor Relationship Management
- Tools and Infrastructure
- Conflict Management
- Agile Optimization

Critical Success Factor Taxonomy

Organization

Project

People

Project Management

Externalities
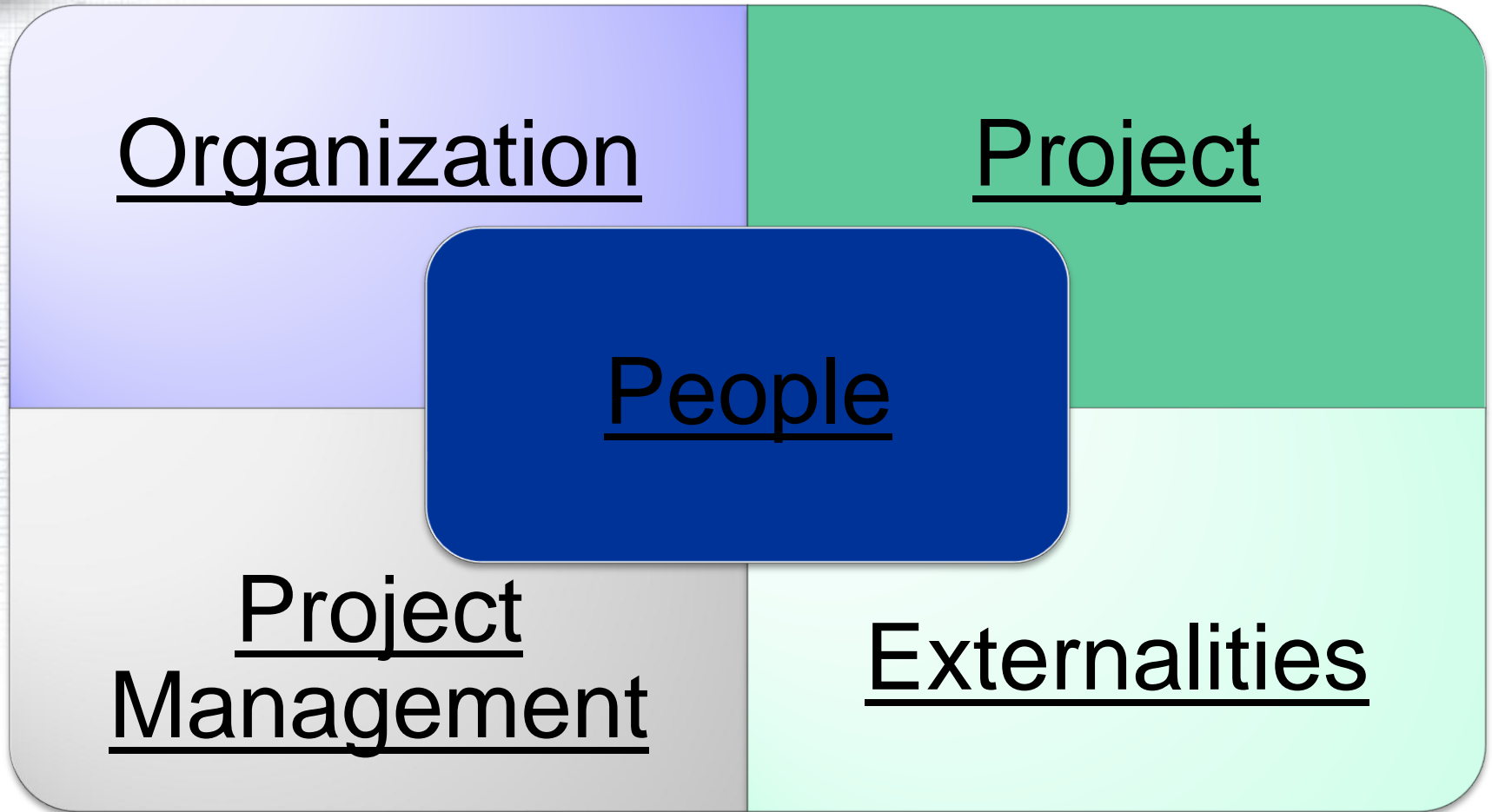
Project Management (1)

System development methodology	Defining a set of process-based techniques that provide a road map on when, how, and what events should occur in what order.
Quality assurance	Governing project quality through definitive acceptance criteria, timely testing, issue identification, and resolution.
Change management	Monitoring and controlling modifications to system requirements.
Monitor sys. dev. process	Methodically reviewing project milestones for schedule, scope, and budget targets.

Project Management (2)

| Financial management	Managing financial resources, accounting for project budget/costs, and demonstrating the value of the project.
Tools and infrastructure	Providing project infrastructure tools that enable management of tasks, resources, requirements, change, risks, vendors, user acceptance, and quality management.
Agile optimization	Using iterative development and optimization processes to avoid unnecessary features and ensure critical features are included.
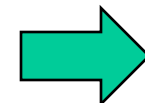
People

Executive Support	Key executives providing alignment with business strategy, as well as financial, schedule, emotional, and conflict resolution support.
Project Personnel	Acquiring, retaining, and managing skilled project personnel in the face of turnover and other personnel hurdles.
Project Mgt. Expertise	Project leaders possessing basic project management skills and practices.
Conflict Management	Influencing the emotions and actions of project stakeholders to minimize the impact of ambition, arrogance, ignorance, passive-aggressiveness, fear of change, and deceit.
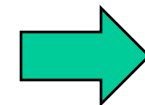
Organization

| User involvement	Involving business and IT users with key consensus-building, decision-making, and information-gathering processes.
Business alignment	Ensuring stakeholders understand the core value of the project and how it aligns with business strategy.
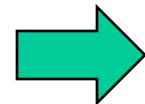
Project

|	
System requirements	Defining system objectives and scope. Capturing user requirements and incorporating them into the system specification.
System interoperability	Designing the system to work with other systems and functional areas.
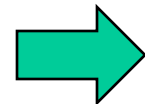
Externalities

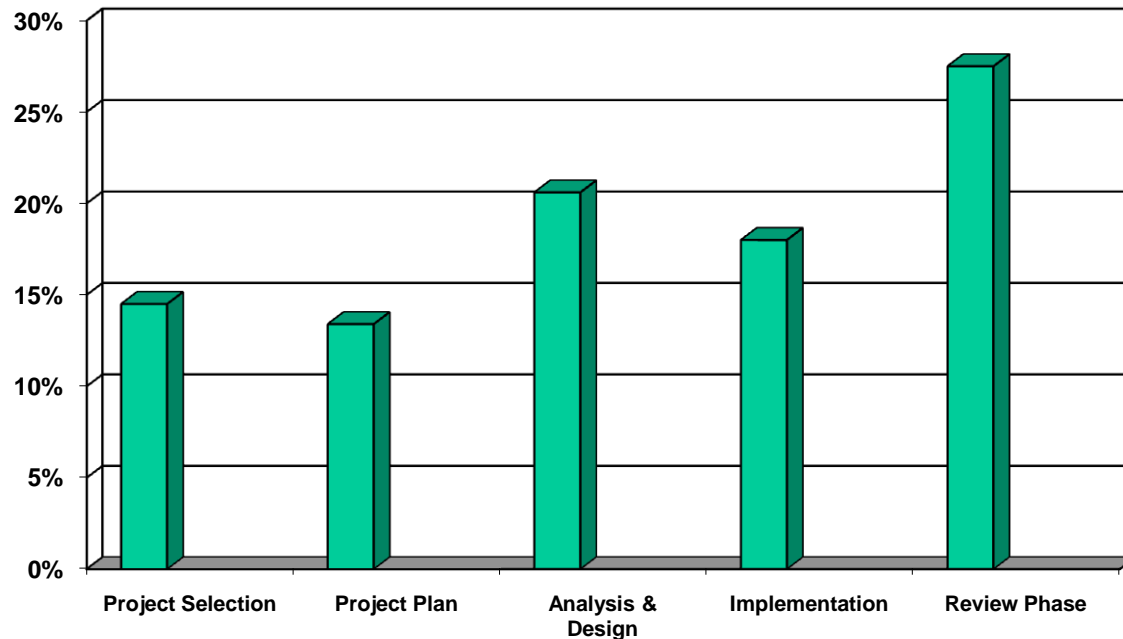| **Vendor relationship management**	Actively monitoring and controlling contracts with vendors/consultants.
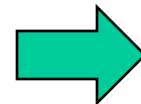
Summary of Findings (1)

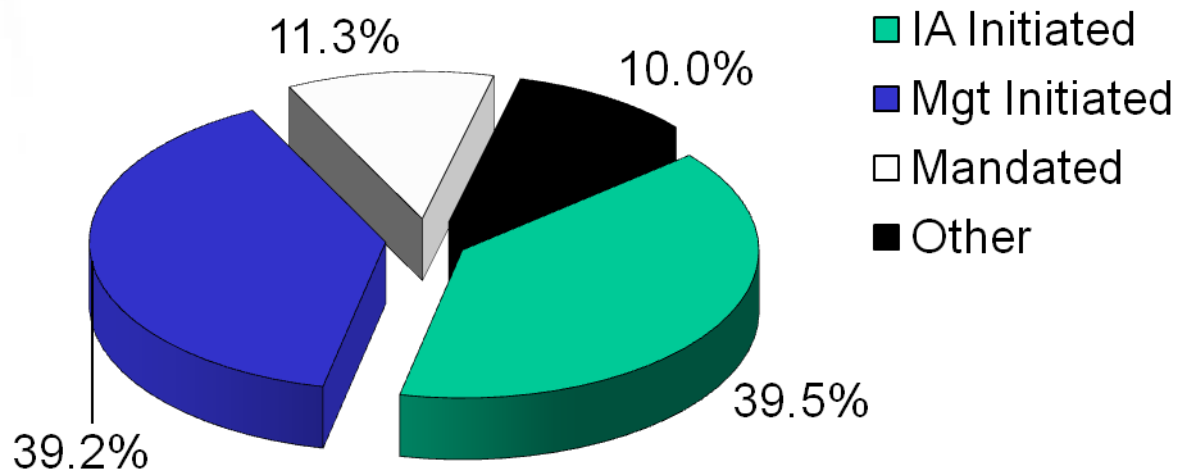RQ 1 IA Role
– Waiting until post-implementation review is too late.

Summary of Findings (2)

RQ 1 IA Role

 – It's OK to invite yourself to the party.

How do auditors get involved?

- IA Initiated
- Mgt Initiated
- Mandated
- Other

11.3%

10.0%

39.5%

39.2%

Summary of Findings (3)

RQ 2 Where IA Adds Value

– Some CSFs more critical than others.

• Criticality transforms.

Critical Success Factor	*N*	IA Adds Value		Contributes to Success	
		Rank	Mean	Rank	Mean
Quality assurance (PM)	678	1	4.04	5	4.54
Change management (PM)	679	2	4.01	6	4.54
Monitoring SDP (PM)	679	3	3.93	10	4.46
System requirements (P)	678	4	3.85	1	4.72
Systems development methodology (PM)	683	5	3.80	3	4.60

Summary of Findings (4)

RQ 3 Monitoring SDP Success

– Metrics abound but dashboards uncommon.
– Conventional wisdom evolving.

Old CW	New CW
IA should primarily design application controls	IA should design SDP controls

The Final Question

Q: What is the one best way for IA to improve the success rate of SDPs?

A: *"Be included, be involved, and participate regularly in the process from project inception."*

Internal Auditor's Role in SDP

- Conclusion:
  - The primary focus of the internal auditors appears to be the design, suggestion and monitoring of controls for the specific processes being automated.
  - They are less concerned with controls that apply to the system development project itself.
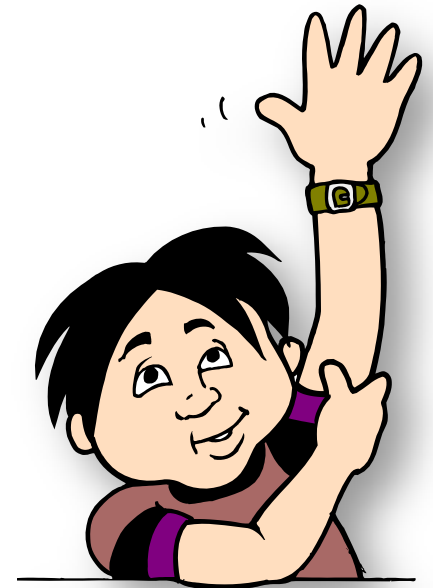
Shameless Plug

- For complete details on our research, see the research monograph scheduled for publication later this year:

  Gray, G., Gold, A., Jones, C. & Miller, D. (2010). *How Internal Auditors Can Improve the Success Rate of Systems Development Projects.* **Altamonte Springs, FL: The IIA Research Foundation.**

  Available through http://www.theiia.org/bookstore/

Questions?

Thank You!

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