The Long Walk

to a development methodology

for the enterprise.

Aaron Hoffer

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Introduction

- Aaron Hoffer
- Washington Mutual's Enterprise Process Group
- Background is object-oriented programming
- Switched to process and methodologies 3 years ago
- Involved with creating the SDLC (System Development Life Cycle) at Washington Mutual
- Apologies in advance for my inevitable spelling, grammar and diction mistakes

Overview

This is a story. It is told from my perspective. I recount the facts and events to the best of my ability. I strive to be as accurate, fair and correct as possible.

But I cannot represent every side of a story at once. And I have not been able to verify everything in this presentation, but I will point out my suppositions.

That said, this story is about a company's journey to create an enterprise-wide system development methodology. It starts with an organization's will to change and climaxes with the adoption of change, but it does not end there. The story continues to be written as the methodology evolves.

The story opens with regulators, auditors, QA, and other forces of darkness (of which I am now one). It then follows a timeline that starts in the 90s and ends in 2005. The story then goes on to describe the different teams that worked together to create the methodology and prepare the company for its release.

The story winds up with a post-mortem of the release, what has happened since them, what the future holds.

Regulators, Auditors, and Compliance. Oh My!

- A bank…
  - is chartered by the state or federal government to loan more money than it has on hand (most banks loan $12-$14 for every $1 on hand)
  - In return for this privilege, regulators have oversight authority, including the authority to close a bank
- Who are the regulators?
  - Board of Governors of the Federal Reserve System
  - Office of Thrift Supervision
  - Federal Deposit Insurance Corporation
  - Office of the Comptroller of the Currency
  - Securities and Exchange Commission
- Regulators send auditors to review operations, planning, and anything else *interesting*
- Banks also employ auditing firms (e.g. Deloitte & Touche) to provide additional oversight
- Internal audit and compliance departments within a bank continually review its operations

Funding and Supporting a Methodology Program

- Instituting a corporate methodology has wide-ranging and diverse consequences.
  - Our methodology effects the daily working lives of over 4,000 technologists and their customers in the lines of business.
- No corporation undertakes change this pervasive without compelling reasons.
  - Legislation like Sarbanes Oxley, BASEL II, and the Gramm-Leach-Bliley Act provided compelling reasons.
  - Our regulators and external auditors provided additional compelling reasons.
- The will to institute a methodology comes from top corporate officers and the board of directors.
  - Enterprise-wide change is championed and funded from the top. There are no *grass-roots movement* in this arena.

Timeline: 1992 - June 2004

1992

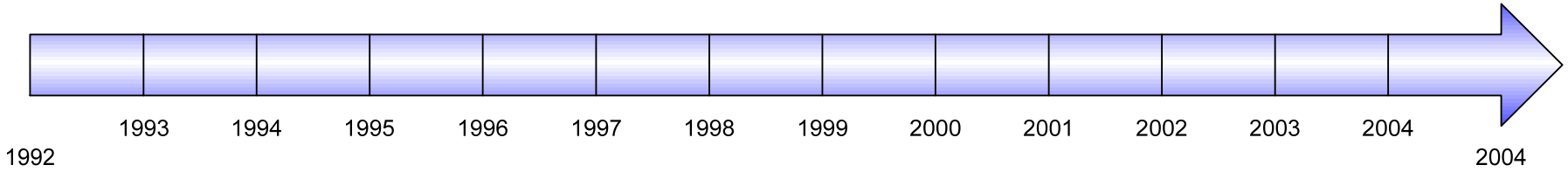
- ***Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control — Integrated Framework***
- **COSO documents potential risks to a business and what policies or processes should exist to detect or correct problems.**

1996

- **IT Governance Institute's *Control Objectives for Information and Related Technology (CobiT)*.**
- **A control framework like COSO but specific to Information Technology.**

2002

- **Sarbanes-Oxley legislation details civil and criminal penalties for misrepresenting certain financial disclosures.**
- **Corporate officers interested in staying out of jail look to COSO and CobiT.**



2000-2004

- **Audit and regulatory findings related to information technology create headaches for our senior executives. They are ready to spend money to make the headaches go away.**

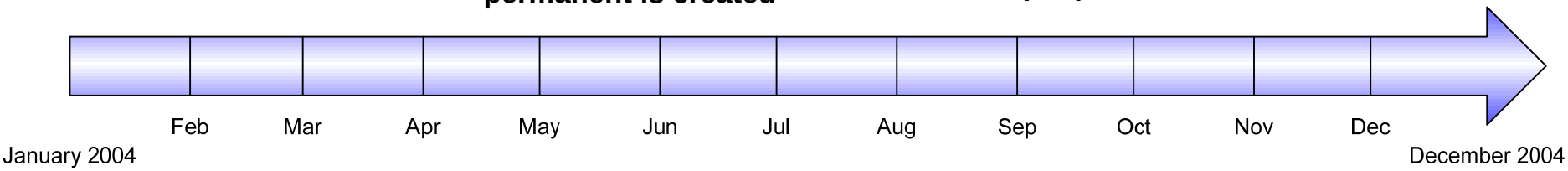
Timeline: July 2004 - December 2004

July 2004

- **ISDLC (Interim System Development Lifecycle) is created and its use mandated for IT projects**
- **A collection of templates related to system development, the ISDLC is not intended to solve all audit and compliance findings. It is a necessary stop-gap while something more permanent is created**

September - December 2004

- **The SDLC process is created**
- **Core team is restricted to about 20 people, but nearly 150 people in total are involved**



July 2004

- **SDLC Discovery Phase**
- **We assess our process capability**
- **A decision is made to use internal resources to create a development methodology that will govern every technology related project in the company**

August 2004

- **An outline of the SDLC program is drafted**
- **Different program options are presented to senior executives. They accept an approach and fund it**
- **Managers commit resources to the program.**

Timeline: 2005

January - March 2005

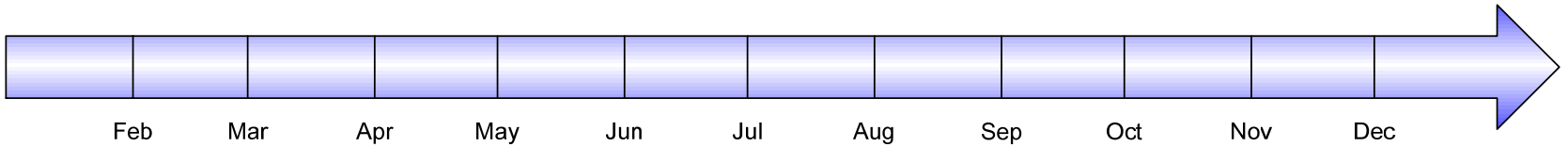
- **The SDLC is *web-ified***
- **A management policy mandating SDLC compliance is written and approved**
- **Computer-based training modules are created and deployed**
- **The communication plan is executed**

September – October 2005

- **Operational effectiveness testing evaluates project compliance to SDLC as a part of Sarbanes-Oxley**

Dec 15, 2005

Release 1.3 of the SDLC goes live



April 1, 2005

The SDLC policy takes effect

Release 1.0 of the SDLC goes live

June 31, 2005

Release 1.1 of the SDLC goes live

Sep 31, 2005

Release 1.2 of the SDLC goes live

SDLC Program Organization

- How do you organize a program whose goal is to effect massive change to thousands of peoples' jobs?
  - You divide and conquer
  - Work effort was divided into multiple tracks
  - Tracks operated concurrently
- Risk
  - Greatest risk was employee adoption of the methodology
  - In response, separate tracks for training, communication, and deployment were created
- Program Tracks
  - (Content) Development
  - (Content) Deployment
  - Communications
  - Training
  - Policies & Standards
  - Compliance

Content Development Track

- **Responsible for creating the development methodology**
- Two Teams:
- Core team
  - A core team of 15-20 people drove process development
  - The full-time participants included facilitators, technical writers, and project managers.
  - Other team members were subject matter experts who represented different IT discipline. They participated 20 or more hours a week.
- Extended teams
  - Each extended team was organized around a different IT discipline
  - Extended team members participated 4-8 hours a week in their own meetings
  - A member of the core team lead each extended team

Content Development Team Strategy

- To broaden support for the program the teams
  - Included representatives from each major development organization.
  - Included subject matter experts from the major IT disciplines found in the company:
    - Analysis
    - Application development
    - Infrastructure (hardware & networks)
    - Testing
- The full-time core team used the results of the Discovery Phase to create a straw-man SDLC process.
- The straw-man gave the subject matter experts something to work with in the group meetings.

Content Deployment Track

- **Responsible for translating the work of the Content Development track into online content**
- Team included:
  - Technical writers
  - Graphics designer
  - Corporate intranet resources
- Worked with Content Development to understand the methodology.
- Responsible for the concept, design and organization
- Used the dev team's deliverables to create clear, concise and usable SDLC materials

Policies & Standards Track

<table>
<tr><th colspan="2">Management Policy</th></tr>
<tr><td colspan="2">Management policies are broad statements by senior management that define operational requirements. Such statements set the limits and requirements to which management is expected to adhere. They represent the highest pronouncement on a subject when there is no board policy addressing that subject.

USAGE NOTE: Do not use the word “policy” alone (unmodified) in this context; instead, use “management policy.” Confine use of “policy” (unmodified) to secondary and informal references only.</td></tr>
<tr><th>Standard
(requirement)</th><th>Guideline
(permissive)</th></tr>
<tr><td>Use “standard” when referring to a management directive that is adopted to support and/or implement a management policy and must be followed without manager discretion.</td><td>Use “guideline” when referring to a management directive that is adopted in support of a management policy where managers may exercise discretion in determining whether and how to follow the directive.</td></tr>
<tr><th colspan="2">Procedure
(descriptive)</th></tr>
<tr><td colspan="2">Use “procedure” to describe the detailed instructions designed for implementing a board policy or a management standard that’s intended to support such a policy or standard</td></tr>
</table>

- **Responsible for making the SDLC an enforceable directive.**
- The SDLC took the form of management policy supported by procedure.

Communications Track

- **Responsible for spreading the word**
- Challenges
  - There are, approximately, 60,000 employees at Washington Mutual
  - Approximately 4,000 are technologist or working in technology
- Available Communication Channels
  - Directed emails
  - Road shows
  - Community of practice meetings
  - Senior Management/Junior Executive meetings
  - Organizational meetings
  - Websites
  - Newsletters
- Communication Plan
  - Perform stakeholder analysis to identify and segment your audience
  - Use force-field analysis to understand your segments
  - Start with the release date and plan backwards, mapping your stakeholder segments and communication channels to your messages

Training Track

- **Responsible for training employees to use the methodology**
- Training employees on corporate processes is a control objective.
- Training is expensive. To cut costs, training was limited:
  - 4 hour train-the-trainer sessions. (two sessions were held, approx. 15 attendees per session)
  - Five (5) computer based training modules were created
    - Each module took 15-20 minutes for a trainee to complete
    - Modules deployed as *Breeze* training (basically a PowerPoint presentation) on the corporate intranet

Compliance Track

- **Responsible for the methodology's compliance to its control objectives**
- Enterprise Risk group assigned a subset of CobiT control to the SDLC
- If the SDLC did not satisfy its control objectives, the entire program would be a failure because the regulatory and audit findings would not go away
- Compliance team mapped SDLC activities to objectives:
  - Ensure SDLC addressed all assigned objectives
  - Ensure SDLC activities actually satisfied the objectives
  - Identify where in the methodology each objective was satisfied

Content Development Artifacts

- Process Artifacts
  - Process Description Documents (PDD)
    - A lengthy description of a process, its actors, its inputs & outputs and a detailed a description of its individual tasks.
    - A PDD was written for every high level process. About a dozen (12) were created.
  - Swimlane Diagrams
    - A graphical depiction of a process's activities and decisions and who participates in them.
  - Templates
    - Standard documents were a part of the SDLC. There were about 15 different documents.
    - Examples include the Design Specification, Requirements Catalog, Test Plan, Test Results Report and Deliverables Checklist.
  - Template instructions
    - Instructions on how to complete a template and what information should go into each section.

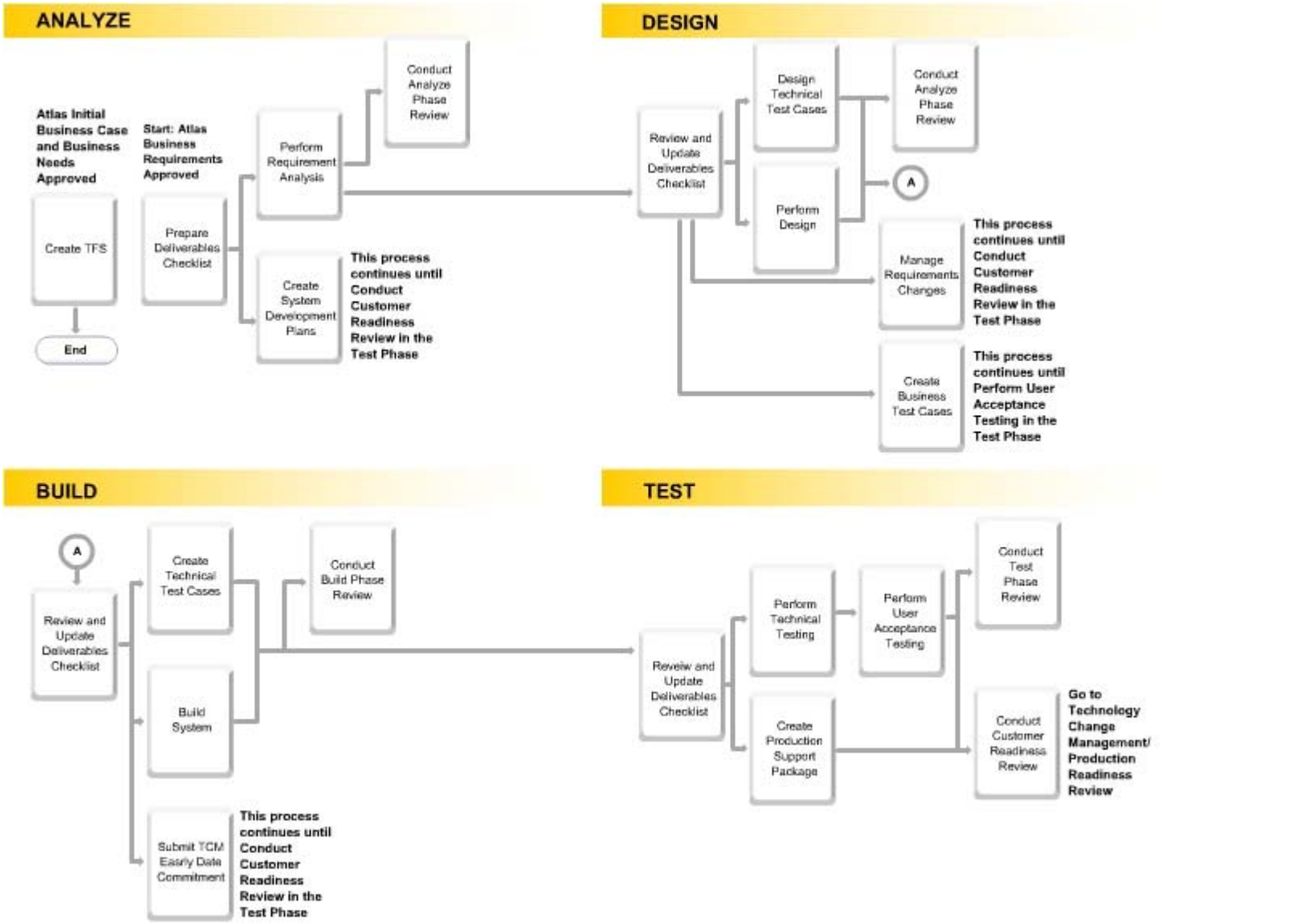
The Content Development Process

- Content Development was run like any other dev team.
- Requirements
- Development artifacts
- Facilitated meetings with subject matter experts
- Test plan & test cases
- Defect tracking system (Test Director)
- Version control system (Perforce)
- Project managers, developers, testers, customers, and end users

Version 1.0

- On April 1, 2005 the SDLC was released into the wild
- Almost all program costs were internal labor expenses
- Of the original budget of 16,250 hours, only 7,500 were used
- People's responses to the SDLC were varied:
  - Some were irate
  - Many were complacent out of apathy
  - Others were complacent out of ignorance
  - Whatever their feelings, most were silent.
  - Complacency became panic in the Fall of 2005 when Sarbanes Oxley Operational Effectiveness testing was conducted. But that's a story for another day. ☺

SDLC Process Flow (high-level architecture)



It worked. Mostly.

- Pilot / Beta testing
  - The SDLC never piloted with any development organization
  - The regulators had been promised that the SDLC would be in place by April 1, 2005
  - Management felt it was more important to make that date than pilot the methodology
  - They were aware of the risks and had to make a difficult decision.
- Training
  - The cost of a real training program induces sticker shock. Sending everyone to a week of training would have cost millions of dollars just in lost productivity.
  - Learning a methodology from reading PowerPoint slides is like learning to drive a car from reading hieroglyphics.
  - The train-the-trainer sessions were populated with irate projects managers and developers who wanted to know why we were trying to ruin their lives.
  - The results of the SOX Operational Effectiveness testing were disappointing. Lack of effective training was a root cause.
- Compromise
  - Almost a 150 people contributed to the SDLC
  - It was hoped a large number of contributors would encourage adoption of the methodology. No one will every know if that was the right decision.
  - Contributors came from different organizational cultures and represented different technology groups. Much compromise was needed to make progress.
  - A solution created out of compromise is a compromised solution.

Versions 1.0 – 1.4

- Quarterly releases, incremental improvements
  - Simpler roles and responsibilities model
  - Guidelines for COTS, proofs-of-concept, agile and iterative development
  - Fewer required documents for small projects
  - Simplified test plan, design specification, and functional specification templates
  - New estimation and planning processes
- Samples and Examples library
- Project file reviews (self-audits for projects)
- Quality audits (currently piloting this)
- Email support, customized training presentations, project consulting

Release 1.5 (End of Q2 2006) and beyond

- Better support for agile and iterative methods
- Better alignment with other corporate methodologies, including the Project Management Life Cycle and Technology Change Management
- Inclusion of high-risk policies and standards (security and business continuity)as de-facto system requirements
- Determine where technology enabler groups (centers of excellence) slot into the methodology
- Guidelines for peer reviews and technical inspections
- Survey program to determine what users and customers need from the SDLC
- Automated work flow and document management