Words of Wisdom

“Those who cannot remember the past are condemned to repeat it.”
- George Santayana

“Whatever can happen, will happen.”
- Murphy’s Law*
Introduction

- Learning Catalyst Profile
- Presentation Goals
- Learning Roadmap
Introduction

Chris Wright, CPLP®, MPM, PMP®

- Core Doctrine
  - “To lead through teaching and inspiring others.”

- Experience
  - 23+ years in PM; 12 in wireless and IT
  - 11 years as PM consultant and trainer for Tanden LLC

- Education & Certification
  - B.A., Economics & Spanish; M.P.M., Project Management
  - PMP®; Registered Education Provider (R.E.P.)
  - Certified Professional in Learning & Performance (CPLP®)
Introduction

Presentation Goals

- To present the Panama Canal project through the lens of a modern-day project manager
- To illustrate how the project management discipline has played a vital role in world trade and economic development
- To gain important lessons learned from historic projects that can be applied to our own endeavors
Introduction

Learning Roadmap

- Introduction
- Project Initiation
- Project Planning
- Project Execution, Monitoring & Controlling
- Project Closure and Lessons Learned
- Moving Forward
Learning Roadmap

CHECKPOINT

☑ Introduction
☑ Project Initiation
☑ Project Planning
☑ Project Execution, Monitoring & Controlling
☑ Project Closure and Lessons Learned
☑ Moving Forward
Project Initiation

- Project Background
- Project Drivers – U.S. Involvement
- Trigger Events
- Initial Constraints
- Key Stakeholders
Project Initiation

Panama Canal Project Background

- Spanish Empire (early 1500s)
- Kingdom of Scotland (late 1600s)
- The French Attempt (1880-1900)
- The U.S. Effort (1900-1914)
Project Initiation

Project Drivers – U.S. Interest

- California Gold Rush
  - Prospectors’ Travel
  - U.S. Postal Service
- General Grant’s Experience
- Spanish-American War
- Naval Prowess
Project Initiation

**Trigger Events**

- **Grant Administration**
  - Military Experience (1852)
  - Survey Expeditions (1870-75)
  - Inter-oceanic Canal Commission (1876)
- **French Project Bankruptcy (1889)**
- **Spanish-American War (1898)**
- **Spooner Act (1902)**
- **Panamanian Independence (1903)**
Project Initiation

Initial Constraints

- Geographical
  - Terrain
  - Climate and Ecological
- Technological
- Team Member Experience
- Political
- Economical
Project Stakeholders

Identification

- **Core**
  - deLesseps; Goethals
  - Laborers
- **Primary**
  - Financiers
  - Politicians
- **Secondary**
Learning Roadmap

Checkpoint

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Project Planning

- Preliminary Challenges
- Scope Definition
- Time and Resources
Project Planning

Preliminary Challenges

- Project Management Non-Existent
- Inaccurate Analogous Estimates
- Climate Effect on Equipment
- Limited Engineering Expertise
- Communications Latency
Project Planning

The Panama Canal: Scope Definition

- Survey
- Land Purchase
- Treaties
- Path / Route
- Lakes and Dams
- Locks
- Culebra Cut
- Railroad
Project Planning

Scope Perspective: Factoids

- From the Atlantic Ocean, the canal runs south, then east to the Pacific Ocean
- A train of flat cars that carried all excavated material would circle the globe four times at the equator!
- Total soil excavated would build a pyramid 4200 feet high
- About 12 million lbs of dynamite were used per year
- Six million loaves of bread, 650,000 rolls, and 67 tons of cake were served in the Commissary
- Project engineers were paid $225-$600 per month; physicians earned $150-$300 per month
- Gatun Lake, the canal’s highest point, is 85ft above sea level
Project Planning

Time and Resources

- **Schedule**
  - French Plan = 7 Years
  - U.S. Plan = 9 Years

- **Costs**
  - French = $82 Million ($2.13B*)
  - U.S. = $375 Million ($9.38B*)

- **People & Equipment**

* 2014 Dollars
Learning Roadmap

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☐ Moving Forward
Project Execution, Monitoring & Controlling

- Human Resource Management
- Communications Management
- Risk Management
Executing and Controlling

Human Resource Management

- Expertise Alignment
- Empowerment
- Sponsorship
- Motivation & Inspiration

“The Land Divided / The World United.”
Communications Management

- **Challenges**
  - Language / Culture Barrier
  - Distance
  - Progress Reporting

- **Tools and Techniques**
  - Telegraphy
  - Photography
  - Radio / Telephone
Executing and Controlling

Risk Management

- Environmental
  - Climate
  - Disease

- Work Conditions
  - Landslides
  - Explosives

- Political
Learning Roadmap

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Project Closure & Lessons Learned

- Operational Hand-Off
- Key Lessons Learned
- Project Hindsight
Project Closure

Operational Hand-Off

- Project Celebration
- Maintenance and Support
- Political Struggles
- Panamanian Control (1999)
- Sign-Off / Acceptance
"Every successful structure serves as a guide in the construction of all future similar works. Thus the experience of one may become the wisdom of many."

- DeVolson Wood, Civil Engineer, 1882
Project Closure

Key Lessons Learned

- Needs and Expectations Definition
- Clear Vision and Common Goals
- Organizational Commitment
- Engaged Leadership
- Scope Definition
- Adequate Expertise
- Creative Solutions
Project Closure

Key Lesson Learned: Strong Sponsorship

“Speak softly and carry a big... shovel.”
# Project Hindsight

## Tale of the Tape

<table>
<thead>
<tr>
<th></th>
<th>France</th>
<th>Variable</th>
<th>U.S.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea-Level Canal</td>
<td>$287 Million (6.8B)</td>
<td>Actual Costs</td>
<td>$352 Million (8.7B)</td>
</tr>
<tr>
<td>Time</td>
<td>20 years (9*)</td>
<td></td>
<td>14 years (10*)</td>
</tr>
<tr>
<td>Quality</td>
<td>Abandoned</td>
<td></td>
<td>Completed</td>
</tr>
<tr>
<td>Other</td>
<td>22,000 deaths†</td>
<td></td>
<td>5,600 deaths†</td>
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</tbody>
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*Actual construction

†Estimated

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Project Hindsight

Project Comparison: “The Big Dig”

- Background
- Status
- Issues
- Forecast
# Project Hindsight

## Great Project? You be the Judge

<table>
<thead>
<tr>
<th>The Big Dig</th>
<th>Variable</th>
<th>Panama Canal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Transit Relief</td>
<td>Goal</td>
<td>Path Between Oceans</td>
</tr>
<tr>
<td><em><em>$23 Billion ($5.97B</em>)</em>*</td>
<td>Costs$</td>
<td><em><em>$17.19 Billion ($12.5B</em>)</em>*</td>
</tr>
<tr>
<td>29 years to date</td>
<td>Time</td>
<td>34 years</td>
</tr>
<tr>
<td>Critical Issues</td>
<td>Quality</td>
<td>Completed</td>
</tr>
<tr>
<td>Local</td>
<td>Other</td>
<td>Global</td>
</tr>
</tbody>
</table>

*Original Estimate +2013 Dollars*
Learning Roadmap

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☐ Moving Forward
Moving Forward

- The Panama Canal Today
- Post-Panamax Project
- Things to Know
Moving Forward

The Panama Canal Today

- Ownership and Control
- Competitive Issues
- Traffic and Volume Statistics
  - Vessel Transits (2013): ~16,000
  - ~324 Million Tons
  - ~$865 Million annual toll revenue
- Post-Panamax Locks Project
Moving Forward

Post-Panamax Project

- Triggers and Drivers
  - Traffic
  - Modern Ship Capacity

- Project Background

- Status and Forecast
  - Costs ($7.15 Billion)
  - Schedule (April 2016)
Re-Cap of Presentation Goals

☑ To present the Panama Canal project through the lens of a modern-day project manager

☑ To illustrate how the project management discipline has played a vital role in world trade and economic development

☑ To gain important lessons learned from historic projects that can be applied to our own endeavors
Moving Forward

Things to Know...

- PDU Reporting
- **Project Leadership Series** Web’n Learns:
  - *Project Management as a Career: Numbers, Certifications, and Pathways* (21 Dec 2015) – 2.5 PDUs
- Project Leadership Community Membership
Thank You for Your Participation

T A N D E N
Learning Leading Collaborating

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