A Formula for Fixing Troubled Projects: The Scientific Method Meets Leadership

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The Physics Problem

1. Read the Problem
2. Diagram the Problem
3. What is the Question?
4. What Data is Provided?
5. What Mathematical Formula to Use?
6. What Data is Missing?
7. Collect Missing Data
8. Solve the Problem
9. Check Your Work
We Can

Sampling and Analysis Plans for Containerized Mixed-Waste

Autopilot

Computerized Maintenance Management System Software
Example 1

We Can

Sampling and Analysis Plans for Containerized Mixed-Waste
We Can

Read the Problem
Observe

✓ Plans Behind Schedule and Under Budget
✓ Regulatory Non-Compliance Risk
✓ First Drum Sampled - Coveralls not Oxide
We Can
Diagram the Problem
Explore Paradigms
(Where is Their Cheese?)

- Previous PM - Analytical Chemistry Techniques
- Customer - Data for Treating Waste for Disposal
- Regulators - Regulatory Compliance
- PM - The Little Engine that Could
We Can

What is the Question?
Define the Objective
Characterize the Waste
To Enable Treatment
We Can

What Data is Provided?

What are the Resources

- People - Sampling and Analysis Plan Team
- Annual Budget - $2 Million
We Can
What Mathematical Formula to Use?
The Project Plan Algorithm

- Review Database
- Walk Down Drums
- Perform Head Space Analysis
- Perform Real-Time Radiography
- Create Waste Characterization Report
- Determine Appropriate Sampling Method
- Develop Sampling Technologies
- Develop Sampling Techniques
- **Write Sampling and Analysis Plan**
- Develop Sampling Work Instruction
- Contract Analytical Laboratory
- Develop Prioritization and Schedule
- Sample Drums
- Analyze Samples
- Update Waste Characterization Report
We Can

What Data is Missing?

Gap Analysis

✓ What is Really in the Drums?

✓ How to Sample a Variety of Waste?

✓ How to Preserve Sample?

✓ Who are the Stakeholders?

✓ Who Does the Team Need?
We Can

Collect Missing Data
Fill the Gaps

✓ Develop Compactor Coring Device
  ▪ Technology Development

✓ Develop Sampling Methods
  ▪ Operational Procedures

✓ Identify and Include Stakeholders in Planning
  ▪ State of Colorado
  ▪ Environmental Protection Agency
  ▪ Department of Energy
  ▪ Department of Transportation
  ▪ The Public
  ▪ Analytical Laboratories

✓ Identify and Include Team Members in Planning

  Sampling and Analysis Planning Team
  Technology Developers
  Operators
  Radiation Safety

  Radiation Monitoring
  Chemists
  Nuclear Safety
  Toxicology

40 Organizations!
We Can

Solve the Problem
Implement Project

✓ Manage Schedule
✓ Manage Budget
✓ Manage Technical
We Can

Check Your Work

Manage Risk

✓ Earned Value Management
  ▪ Schedule Products
  ▪ Resource Load Schedule
  ▪ Measurable Milestones

✓ Corrective Action Plans
  ▪ Plan
  ▪ Implement
Example 2

Autopilot

Computerized Maintenance Management System Software
Autopilot

Read the Problem
Observe

✓ Programmers Working 90 Hour Weeks
✓ Resources 100% to Operational Requests
✓ Dissatisfied User Base
✓ No Formal Requirements
✓ No Change Control
✓ Database Inaccurate
✓ Inappropriate Maintenance Plans
✓ Legacy Processes
Autopilot

Diagram the Problem
Explore Paradigms
(Where is Their Cheese?)

✓ Customer - Move the Cheese

✓ Work Control - Don’t Change It

✓ Technicians - I Like My Work

✓ Users - Keep Facilities and Equipment Operational

✓ $8 Million Facility Maintenance

✓ PM - High Performance Aircraft on Autopilot
Autopilot

What is the Question?
Define the Objective

User Friendly, Reliable and Timely
Facility and Equipment Maintenance and Repair
Autopilot

What Data is Provided?

- Data - Maintenance Database
- People - Programmers and Technicians
- Tools - MAXIMO
- Annual Budget - $800K
Autopilot

What Data is Missing?

Gap Analysis

✓ How to Correct Database?

✓ What Skills Are Needed?

✓ How to Allocate Resources?

✓ Who are the Stakeholders?

✓ How to Get the Team On-Board?
Autopilot

Collect Missing Data
Fill the Gaps

✓ Acquire Needed Skills
  ▪ Requirements Expert
  ▪ Database Administrator
  ▪ Configuration Manager
  ▪ Reliability Centered Maintenance Expert

✓ Allocate Resources
  ▪ Separate Project and Operational Resources

✓ Identify and Include Stakeholders in Planning
  ▪ Wind Tunnel Operators
  ▪ Structures Laboratory Personnel
  ▪ Maintenance Technicians
  ▪ Contract Managers
  ▪ Work Control

✓ Create Acceptance - Re-Engineering Workshop
  ▪ Find New Cheese
  ▪ Create New Process
Autopilot

What Mathematical Formula to Use?
The Project Plan Algorithm

Project Integrated Reliability for Research

✓ Project Infuse - Database
  ▪ Collect Name Plate Data
  ▪ Generate Reliability Centered Maintenance Plans
  ▪ Re-Engineer Careers

✓ Project Perimeter Interface - User Interface
  ▪ Develop Requirements
  ▪ Object Oriented Analysis and Design
  ▪ Software Development

✓ Strategic Reliability Centered Logistics - Operational Infrastructure
  ▪ “Find New Cheese”
  ▪ Procure Life-Cycle Software Management Tool - Rational Rose
  ▪ Re-engineer Maintenance Delivery System Processes
  ▪ Requirements Management
  ▪ Configuration Management
  ▪ Capability Maturity Model
Final Exam
Integrity

✓ Intuition
"It is in your moments of decision that your destiny is shaped."
- Anthony Robbins

✓ Courage
"The price of greatness is responsibility."
- Winston Churchill

✓ Commitment
"It’s never crowded along the extra mile."
- Wayne Dyer

“The supreme quality for leadership is unquestionably integrity. Without it, no real success is possible … ”
- Dwight D. Eisenhower
The Adventure Continues

Thank You