



Successful Project Management, with special emphasis on Information Technology (IT) Projects!

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Overview

- Small to medium projects focus for this discussion
- For “newish” project managers, or those looking to improve their success rate
- Based on Project Management Institute’s PMBOK® and Microsoft Project 2002



Bio: Elliot Sloane, Ph.D.

- Nearly 3 decades of Clinical Engineering and Information Technology Expertise
 - **Vice President (CIO, COO), ECRI – 15 years**
 - **Vice President (COO, CTO), MEDIQ/PRN – 10 Years**
 - **Faculty, Decision and Information Technologies, Villanova University – since 2000**
- AAMI BIT Editorial Board
- Immediate Past President
 - **American College of Clinical Engineering (ACCE)**
- Board of Directors
 - **IEEE Engineering in Medicine and Biology Society**



Project Management Basics

Unlike the Evil Knievel shows:

“Warning, kids, don’t try this at home...”

This one-hour discussion is intended to give you frameworks, starting points, and vocabulary.

Start small, use other’s books, software, and training programs to build expertise.



One Well-Regarded Project Management Framework:

- PMBOK[®] – Project Management Body of Knowledge, is a registered trademark/trade name of the Project Management Institute (PMI)
 - www.pmi.org
- Also, it is an ANSI standard
 - e.g., ANSI/PMI 99-001-2000
- Covers “generally accepted” practices that are used “most of the time...” with “widespread consensus...”

PMBOK[®] (Project Management Body of Knowledge)

“Knowledge Areas”

1. Project Integration Management
2. Project Scope Management *
3. Project Time Management *
4. Project Cost Management *
5. Project Quality Management
6. Project Human Resource Management
7. Project Communications Management
8. Project Risk Management *
9. Project Procurement Management



Project Management Context?

- Culture and organization matter!
 - Stakeholder roles are easily overlooked or misunderstood! (i.e., know who's affected)
- Projects have a life-cycle of their own.
 - Not always linear/sequential
 - Often iterative, cycling through analysis, design/prototype, review/revise cycles until complete.
 - Projects almost always need test, implementation, and maintenance phases BUT these are often overlooked -- and unbudgeted -- and are therefore serious risk or failure points.

Healthcare “stakeholder” examples



- Patients
- Families
- Doctors
- Nurses
- Corporate board or trustees
- Regulatory agencies
- Manufacturers/distributors
- Investors/lessors/lenders
- Community
- Maintenance team
- Project leader(s) and supervisors
- Consultants



Project life cycles in healthcare ARE unique, and need VISION.

- Most textbooks teach that each project is finite
 - That's fine for consultants, but if you plan to "live" in your institution for a significant part of your career, you are likely to find that projects are organic, interconnected processes.
- Yes, there is a beginning and an "end," but that end is rarely truly the "END."
 - In healthcare we live with and by our tools and systems for decades upon decades



Vision?

- An EXCELLENT project manager in healthcare knows that today's project fits in a much larger matrix of projects that has history, and WILL CREATE a history.
 - Excellent analysis, planning and project management should take that into account.

Project Integration Management



- “Light gloss...”
 - Projects rarely exist in a vacuum
 - Many critical interdependencies exist and **MUST** be understood and managed for your project to succeed
 - e.g., many emerging clinical technologies depend on one or more hospital network infrastructures and/or the Internet
 - **IGNORE AT YOUR PERIL!**
 - Assume worst case until proven otherwise
 - If you can't live with worst case, fight for control



Project Scope Management *

- This is a **CRITICAL** Success Factor
 - All stakeholders learn to “nibble” at the negotiating table AND throughout the life cycle of a project
 - Fool me once, shame on you...
 - If the stakeholder is not willing, and empowered, to sign and pay for the impact the change will incur, do NOT accept the change
 - Even if willing, I suggest that you negotiate/persuade VERY HARD to defer the change until the initial project is complete
 - Do NOT forget to engage the other stakeholders in the discussion of ANY schedule/budget change.

Project Scope Management



Tip

- When estimating the cost/impact of a scope change, be conservatively high.
 - You rarely will be given all of the facts, nor will you be able to discern all of the implications and/or interdependencies
 - Some stakeholders use “change creep” as a standard M.O., so **be on your guard**.
 - Some are just naïve, and don’t realize the risks

Project Scope Management



Tip

- Have monthly steering committee meetings to disclose, discuss, approve, and schedule scope changes
- Document **EVERYTHING** in a central file or binder
 - Trust me, you **WILL** need that documentation at some point down the road.
 - “CRS” seems to happen to others (at their convenience.) Be a ‘pal’ and **HELP THEM OUT!**



Project Time Management *

- Most IT and construction projects are MUCH more complex than initially understood
 - The interaction of people, hardware, software, and systems causes **many** unexpected complications, delays, risks, and costs
- Consider using a project management software tool to help assure success

Project Cost Management

Tips *



- Cost and time overruns are endemic, especially in IT projects
 - Novelty and/or rapid change creates risk
 - Risk often = rewards, but don't be reckless
 - Take intelligent risks with high ROI
 - Anticipate failures, setbacks, surprises
 - Build in some cushions
 - Always pack a second parachute (Plan B is...)
- Software projects need measurable, discrete milestones **with USERS**

Project Cost Management Tips (cont'd)

- More on protecting your budget (and timeline)
 - Press to hard to hit early- and mid-milestones on, or before, schedule
 - Trying to catch up at the end is almost hopeless, and usually catastrophically expensive
 - Accelerate low-risk, late-milestone tasks when feasible and inexpensive.
 - This is a form of insurance

Project Cost Management Tips (Final)



- Manage perceptions: they ARE reality.
 - Upward perception management: Always provide conservative goals and budgets that you are **damn certain** you can deliver!
 - Subordinate perception management: Always set “stretch” goals that will deliver results well ahead of goals given to your superiors.
 - Peer perception management: In most matrix organizations, peers will try to siphon off your “excess” capacity, so keep your cards close to your chest and a few extra projects in your pocket for slack times.



Project Quality Management

- Quick gloss:
 - Failure to include the key relevant stakeholders in any project is arrogant, ignorant, and unlikely to result in a quality product from THEIR perspective.
 - Don't rely only on managers/supervisors/surrogates. Get to the REAL users.
 - Failure to define test and acceptance standards in advance is suicidal.
 - Stakeholders who refuse or drag their feet are quite likely planning to sandbag you at the end.

Project Human Resource Management



- Lead people, Manage things
 - People need inspiration, trust, encouragement, coaching, etc.
 - Failure to provide what people need will often lead to subversion and failure
 - Passive aggressive behavior can be impossible to detect and VERY difficult to redirect.
 - Angry or fearful subordinates or stakeholders get even, SOMEHOW.



Project Communications Management

- Broad area that is often overlooked
 - Basically, it is hard to over communicate!
 - More is better
 - Include all stakeholders
 - Avoid private caucuses



Project Risk Management *

- Covered elsewhere, but
 - Risk acceptance is a better attitude than risk avoidance!



Project Procurement Management

- PLEASE, after all these years of “preaching,” do a Life Cycle Cost analysis for at least a 5-year period
 - In the IT field, this has been called TCO, for Total Cost of Ownership
- Don’t send out RFQ’s without clear statements of upgrade, training, and maintenance costs



The Leader's Situational View

– Systems Analysis is key

- Follow OLD rule of thumb:
 - Measure TWICE – Cut ONCE

Lead People – Manage Things

Project Characteristics	Organization Structure				
	Functional	Weak Matrix	Balanced Matrix	Strong Matrix	Projectized
Project Manager's Authority	Little or none	Limited	Low to moderate	Moderate to high	High to almost total
Percent of performing Organization's personnel assigned full time to project work	Virtually none	0-25%	15-60%	50-95%	85-100%
Project manager's role	Part-time	Part-time	Full-time	Full-time	Full-time
Common titles for project manager's role	Project coordinator/ Project leader	Project coordinator/ Project leader	Project Manager/ Program officer	Project manager/ Program manager	Project manager/ Program manager
Project management administrative staff	Part-time	Part-time	Part-time	Full-time	Full-time

Source: PMI PMBOK



Culture Counts

- Organizations range from pure functional silos (rigid hierarchies) through a spectrum of matrixes, through solely project-focused (e.g., consulting companies)
- Healthcare tends to stay close to the silo style, with more and more matrix influences.



Software, Computers, and Integrated Medical and Business Systems

- Convergence = change = risk = stress
= OPPORTUNITY!
- In this era of convergence, few experts exist, so there's an opportunity for growth and leadership.

SDLC – Software Development Life Cycle



- Business Analysis
- Feasibility Analysis
- Design
- Development
- Testing and Validation
- Training & Documentation
- Installation
- System Maintenance and Support



Overlooked Critical Success Factor? Shortchanging Analysis and Design!

- **Business Analysis**
- **Feasibility Analysis**
- **Design**
- Development
- Testing and Validation
- Training & Documentation
- Installation

70-80% of most IT projects SHOULD be invested in the first three steps.

Few organizations have the discipline to do so, but they are the ones with the BEST results!

Requires STEADY, CONFIDENT project leadership.



System Maintenance and Support

- Can be as much or more than the original investment, just like many medical devices.
- Often overlooked (for a while), but needs to be part of departmental and institutional planning...



PERT & CPM: Now PERT/CPM

- Program Evaluation and Review Technique (PERT)
 - 1950's by Booz-Allen and Lockheed for the Polaris missile program
 - Optimistic, most likely, and pessimistic completion times w/statistical modeling
- Critical Path Method (CPM)
 - 1960's du Pont and Remington-Rand
 - Plant maintenance, construction
 - Assumed completion times could be shortened at some cost trade-off (resources, \$\$, risk)



Microsoft Project

- Let's look at a series of examples...



If you want to try this software, it
is available with a clear textbook:

DECISION TECHNOLOGY Modeling,
Software, and Applications

by Liberatore and Nydick

J Wiley, ISBN 0-471-41712-2

October, 2002

*The book includes Microsoft Project 2002, EXPERT CHOICE
2000 (AHP), and additional DSS training software! About
\$85 at Amazon.com.*



Credibility First, Last, and Always



Socrates once said:

"Regard your good name as the richest jewel you can possibly possessed of, for credit is like fire. When once you have kindled it, you may easily preserve. But if once you extinguish it, you will find it an arduous task to rekindle it again. The way to gain a good reputation is to endeavor to be what you desire to appear."



PMI- Project Management Institute

- www.pmi.org
- Offers training in most cities around the US, as well as PM certification



Thanks!

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Free software and training resources



- http://www.intelinfo.com/it_training_materials_and_books/free_software_it_project_management_training_materials.html