



LECTURE 2: OVERVIEW OF PROJECT MANAGEMENT

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Slides are based on the lectures
Given by Kent VanderVelden
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TODAY'S MATERIAL

- Manager vs. Project Manager
- Objectives of Project Management
- Success, elements of and risks to projects
- Creating a project

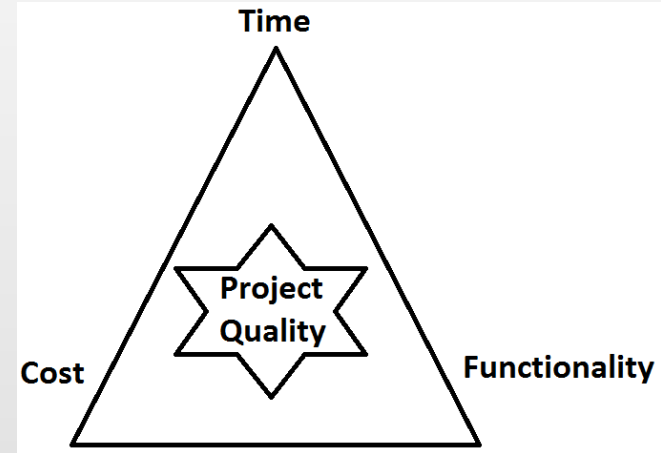
CHARACTERISTICS OF A GOOD...

- Good manager -- Team
 - Identifies, recruits, mentors, defends, and develops others
- Good project manager - Project
 - Serves the team, not themselves
 - A facilitator
 - Connects the right people
 - Identifies and removes obstacles
 - Seeks nonintrusive updates
 - Increases team velocity

OBJECTIVES OF PROJECT MANAGEMENT

- Quality is a constrained optimization of

- 1) Time
- 2) Cost
- 3) Functionality



- Maximize one at the expense of the other two
 - “I can deliver you a fast answer [exclusive-] or a correct answer.”
- In the end, compromises are made
 - Be autonomous, while leaving risky decisions to senior management

OBJECTIVES OF PROJECT MANAGEMENT

- Finish on time (metric: time)
 - Agree to deliverables carefully
 - Agree to timeline carefully
 - Avoid being overly optimistic
- Finish with available resources (metric: cost)
 - Available team members
 - Subcontractors
 - Funding
- Finish by exceeding client's expectations (metric: functionality and quality)
 - Negotiate to finish, not to land the job
 - Make sure everyone knows what is expected

MEASURABILITY

- Optimization requires measurability
 - Time
 - Cost
 - Functionality-Quality
- If it's measurable it's real
 - Keeps the situation real
 - Avoids compliancy or panic
- Stay on point
 - Everyday, make a little progress
 - If not working on an item tied to a goal, you're wasting time
 - Built-in watchdog of "what am I working on and why?"
- In the end, any project is a compromise between these goals
 - "I can deliver you a fast answer [exclusive-] or a correct answer."

FACTORS AFFECTING PROJECT SUCCESS

- Stakeholders
 - Number, locality, cooperation
- Complexity
 - Size, novelty, development duration
- Resources
 - Value (ROI), time, equipment, skillsets
- Criticality
 - Are more resources available?

“REQUIREMENTS” FOR PROJECT SUCCESS

1. Clarity of goals
2. The right people
 - Experience with projects
 - Experience with the domain
 - Skill, talents, drive
3. Appropriate schedule, sufficient time
4. Awareness of risks
 - Mitigation strategies
5. Organization that promotes cooperation
 - Empowered individual autonomy, with group goals

“REQUIREMENTS” FOR PROJECT SUCCESS

6. Understandable design
 - Appropriate use of abstractions, separation of concerns, modularization, consistent use of patterns, simplicity
7. Identification of key decisions
 - Document the what and why
8. Control of complexity
 - Beware feature creep
9. Monitoring progress
 - Qualitative and quantitative
10. Traceability
 - Version control
 - Ability to return to earlier state and undo decisions
11. Good tools



CREATING THE PROJECT - ELEMENTS OF THE PROPOSAL

- Proposal
 - Stakeholders
 - Goals
 - Feasibility
 - Risks
 - Value Proposition
 - Budget
 - Initial Plan
 - Prototype

WHO ARE THE STAKEHOLDERS?



STAKEHOLDERS

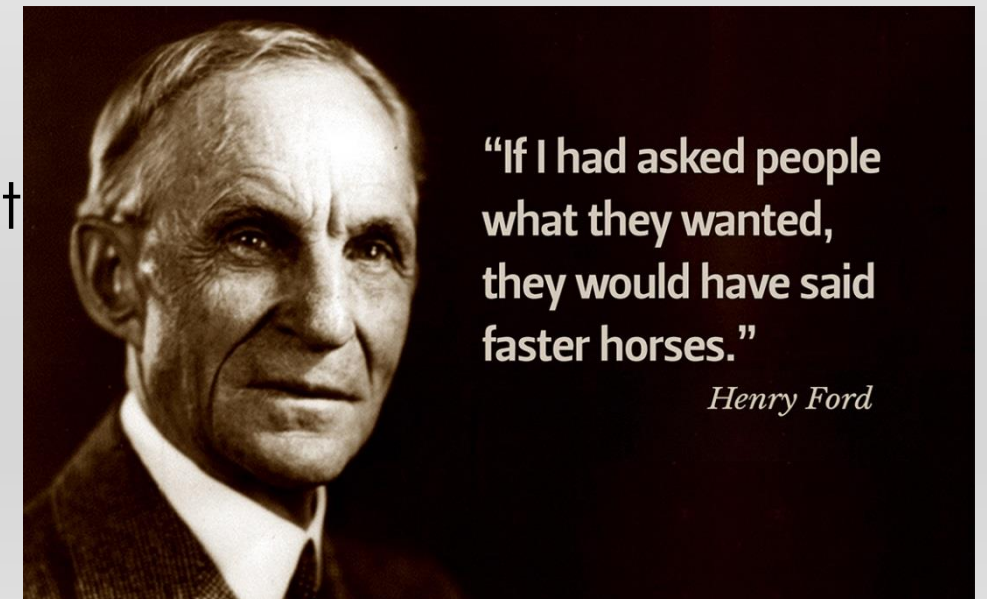
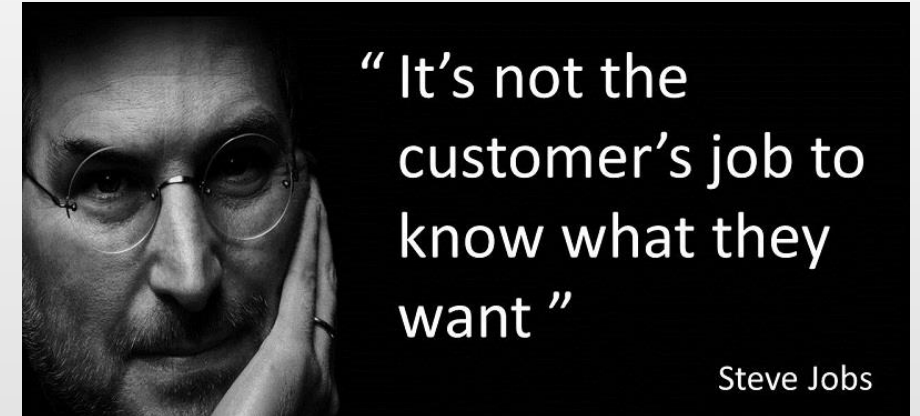
- “Internal” Stakeholders
 - Product management
 - System Engineering
 - Architects
 - Software Development
 - System Verification
 - Project Management
 - R&D Management
 - Services
- “External” Stakeholders
 - Customers
 - Users
 - Shareholders

You are supposed to easily succeed with the technical aspects
of project management

But challenges related to
managing stakeholders require experience

DETERMINING GOALS

- Listen to stakeholders
- Rank the goals at least by
 - 1) Time (to implement)
 - 2) Cost (to implement)
 - 3) Functionality-Quality (gained)
 - 4) Complexity (to implement, maintain)
- Stakeholders may not always know what they need
 - Cross disciplinary teams helpful



FEASIBILITY

- Can we do it?
 - Is the technology ready?
 - Do we understand the technology?
 - Can anyone use it?
 - How much does it cost?

RISKS

- What can go wrong?
 - Technological, organizational, ...
- What's the probability of occurrence?
 - Best guess
- What's the result if it occurs (criticality)?
- What can we do about it?
 - Mitigation strategy
- Examples
 - People leave
 - Funding is cut, investors back out
 - Too much money
 - Too many bosses

PROTOTYPING

- Purpose of Prototyping
 - Answer questions
 - How will the user log in?
 - How will the administrator gain access?
 - Can we retrieve the data in time?
 - How long will it take the algorithm to run?
 - Reduce risks

GROUP DISCUSSION

Do you have the characteristics of a good project manager?

How can you get them?

SELF-CHECK

- What are three objectives of project management?
 - What are the 4 factors that impact project success?
 - What advice would you give to a new project manager?
 - Who are the project stakeholders?
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- Think about --- How would you control the factors that affect your project success?

GROUP DISCUSSION

Why do we have several levels of process maturity and why do we need these level?

Why big companies have informal CMM but small companies do not?

How could the maturity model be useful for your project?

What would you do to improve your maturity model?