



National Association of Legislative
Information Technology
2007 Professional Development Seminar

Project Management

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Title and Scope

- ***Project Management Methodologies: What and Why*** – an examination of various methodologies with an eye to what has worked/not worked with legislative IT projects and why; how methods fit with project team and stakeholders; discussions of actual experiences.





Objectives



- Have Fun
- Learn the history of project management and the importance of project management.
- Learn basic project management terms
- Distinguish projects from programs.
- Describe the Project Life Cycle, Five phases, and nine knowledge areas.
- Explain different organization structures and Team models and their impacts on PM tasks.
- Learn different software development Life Cycles
- Discuss real life projects from users' experiences and learn from challenges.



Housekeeping

- Please put Cell phones and Blackberries in buzzer mode.
- An active participation to make it fun.
- Feel free to stop the presentation for questions, clarifications and opinions.
- Share your experience





Project Management ?

1994: The Standish Group study shows the Schedule overrun was 222%, cost overrun was 189%. 16.2 % Successful, 52.7% challenged, and 31.1% Failure

2000: The Standish group study shows marked improvement in Project resolution. The schedule overrun came down to 63% and cost overrun came down to 45%.

2006: Chaos Report shows 35% successful 46% challenged
And 19% failed (source: PM Network June 2007)



Looking Back

It is simple to make things difficult, and it is difficult to make things Simple

Project delays, Ad hoc project management

Teams work in silos

Front page on Newspapers

No Change Management





State of Delaware

- Major Project office
- Chief Program Officer
- Dedicated Change management
- E-Gov Program Portal no 1 in Nation, BOW
- 800 MHZ, ERP programs
- PMI Dover Chapter
- Certified PM and CMs
- Governor's proclamation
- Quality Month, Project management day



Basics of PM.....

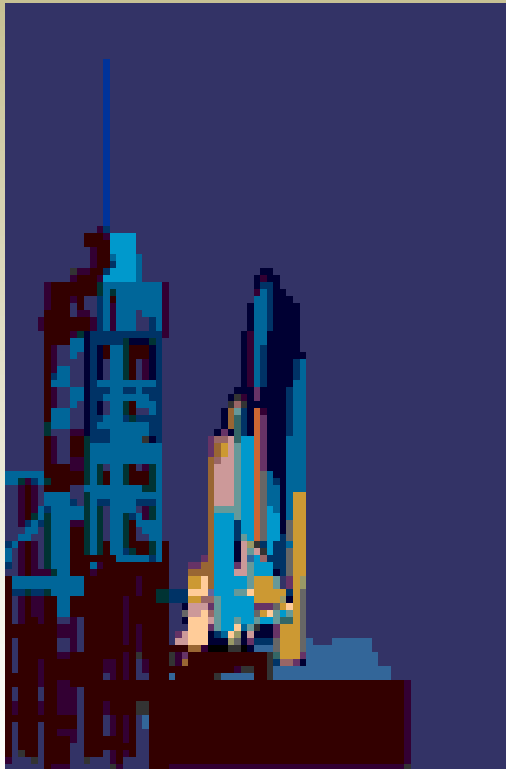
- Project does not just happen , it is shaped by decision, decision, and decisions.....

Characteristics of projects

- Unique
- A start and finish
- Multiple phases
- Whereas
- Processes are repeatable, Continuous, do definite end



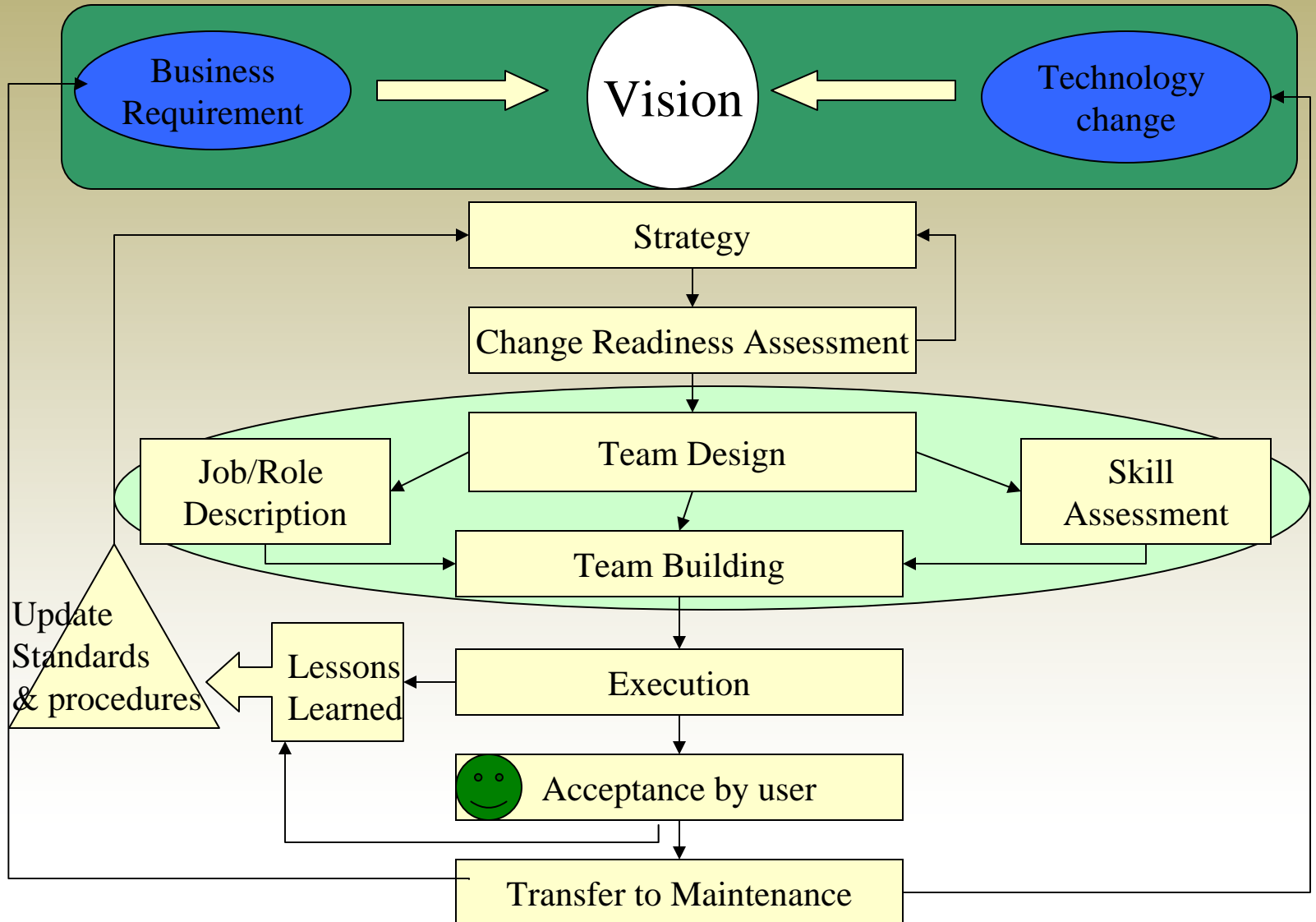
Program-→Project--→Process



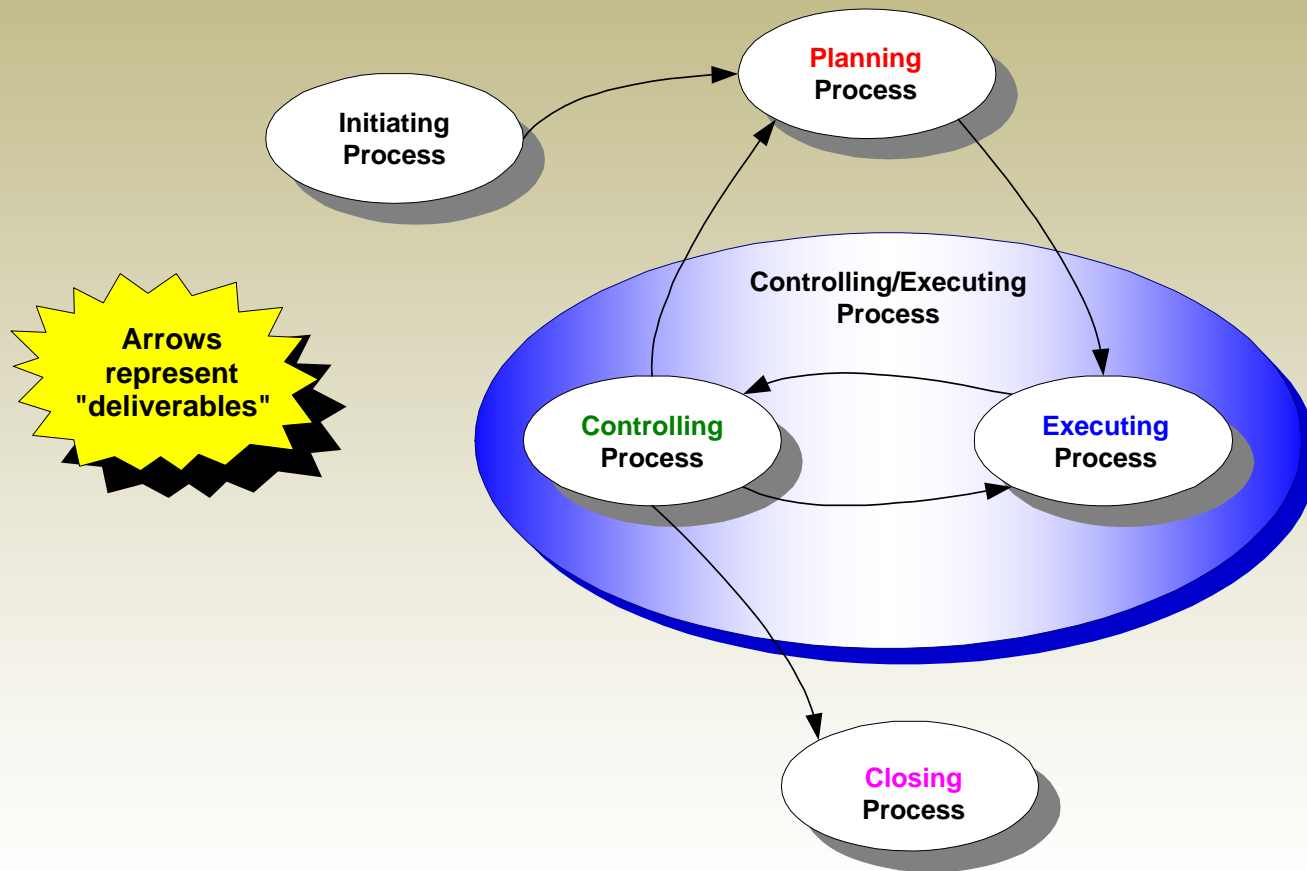
- Multiple flights – Program
- Each flight ----Project
- Media Reporting--- Process



Basics of PM.....Cont



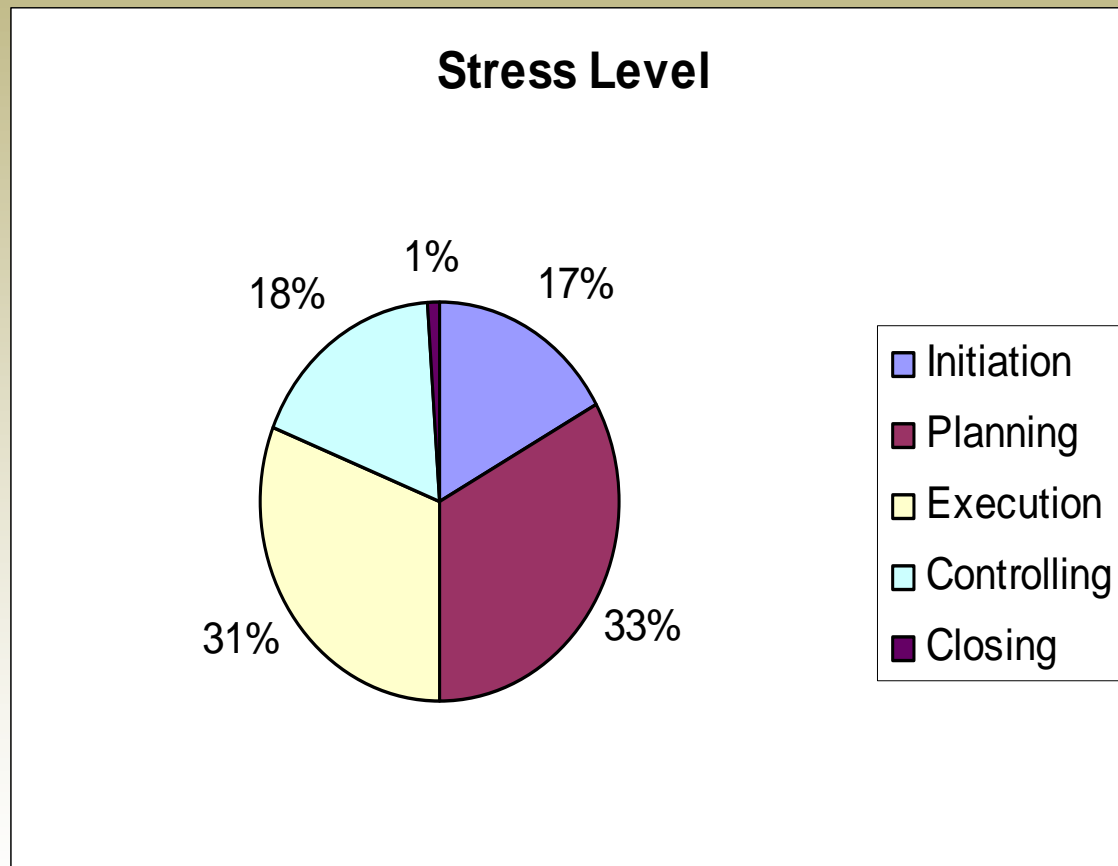
PM Phases



Courtesy: PMI



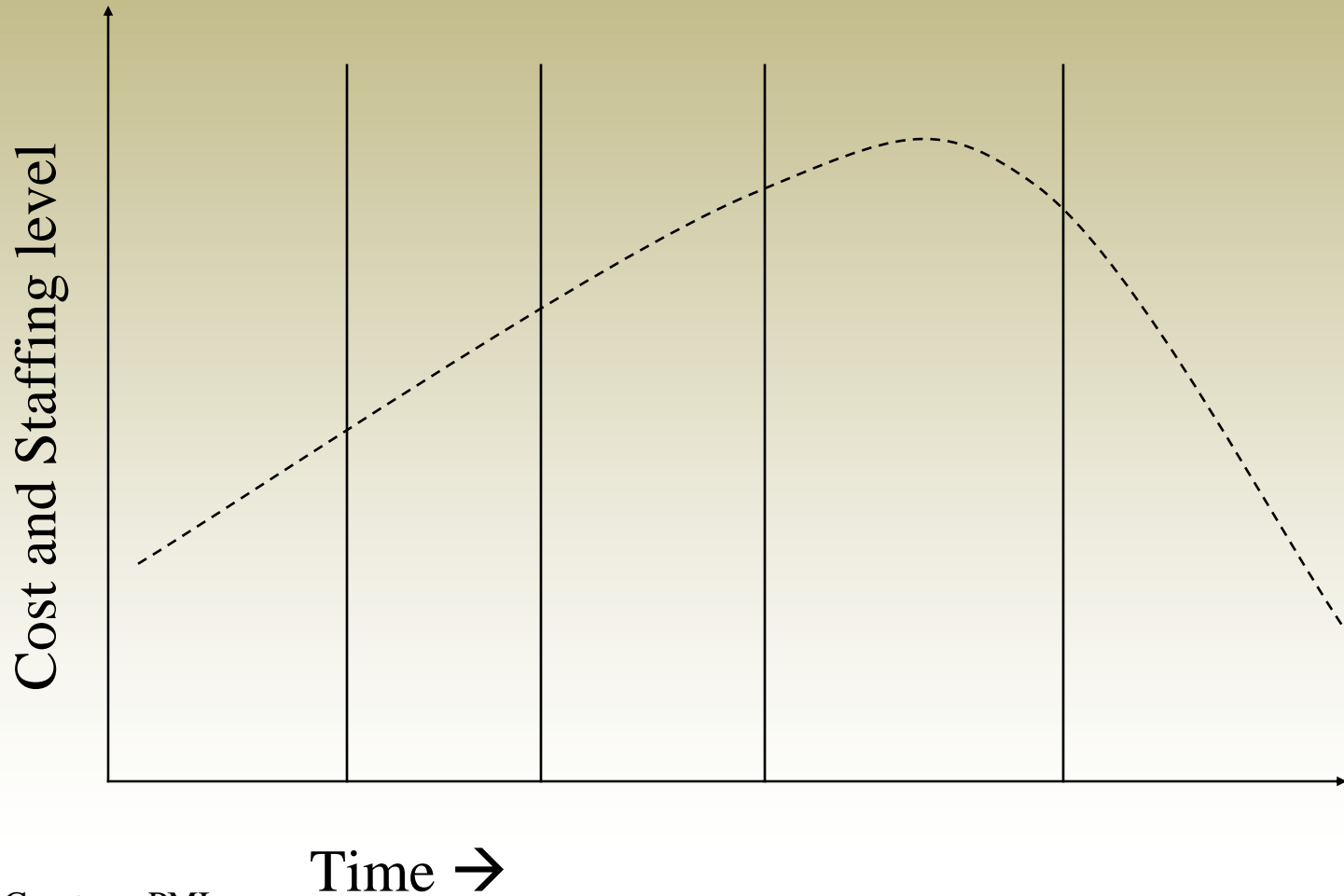
PM Phases and Stress



Source: PM Network July 2007



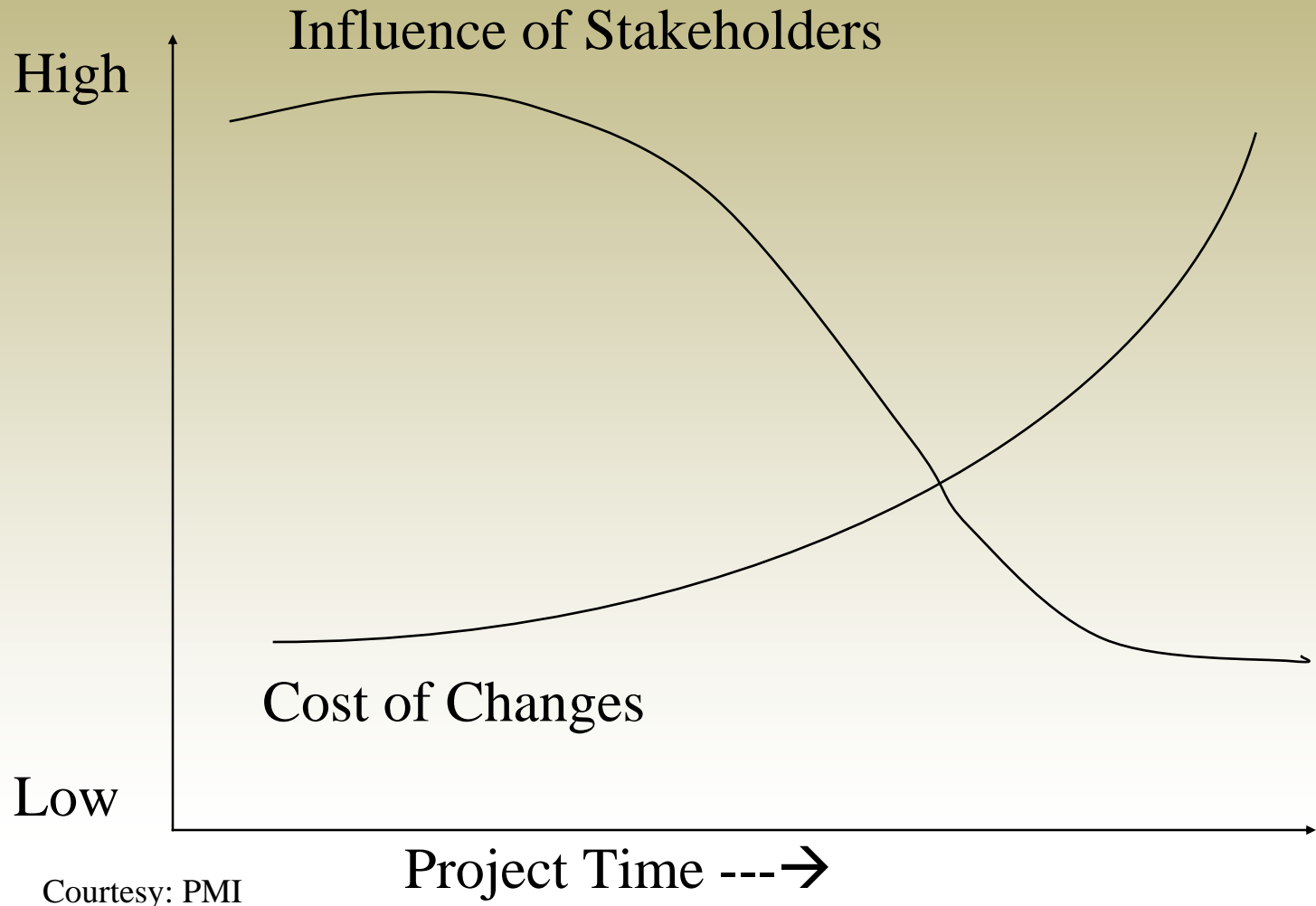
Typical Cycle



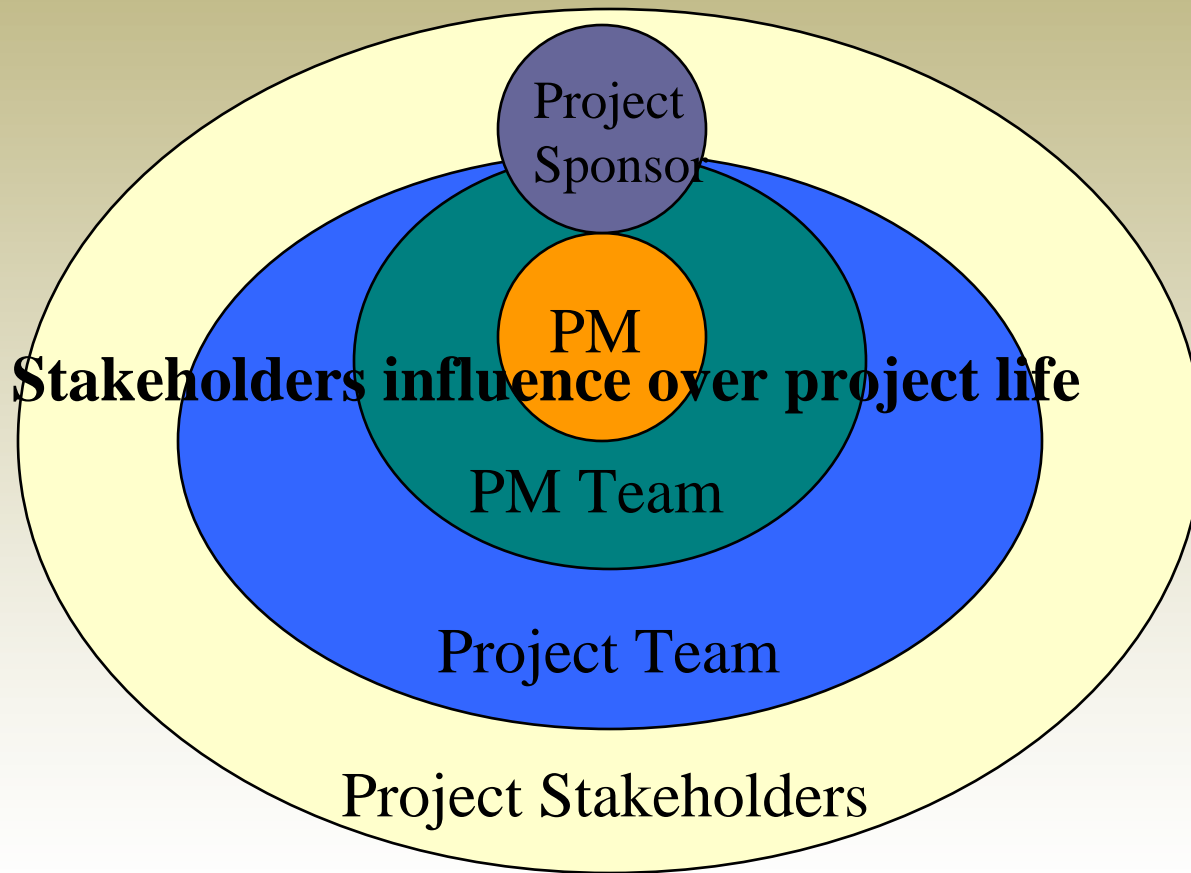
Courtesy: PMI



Stakeholders influence over project life



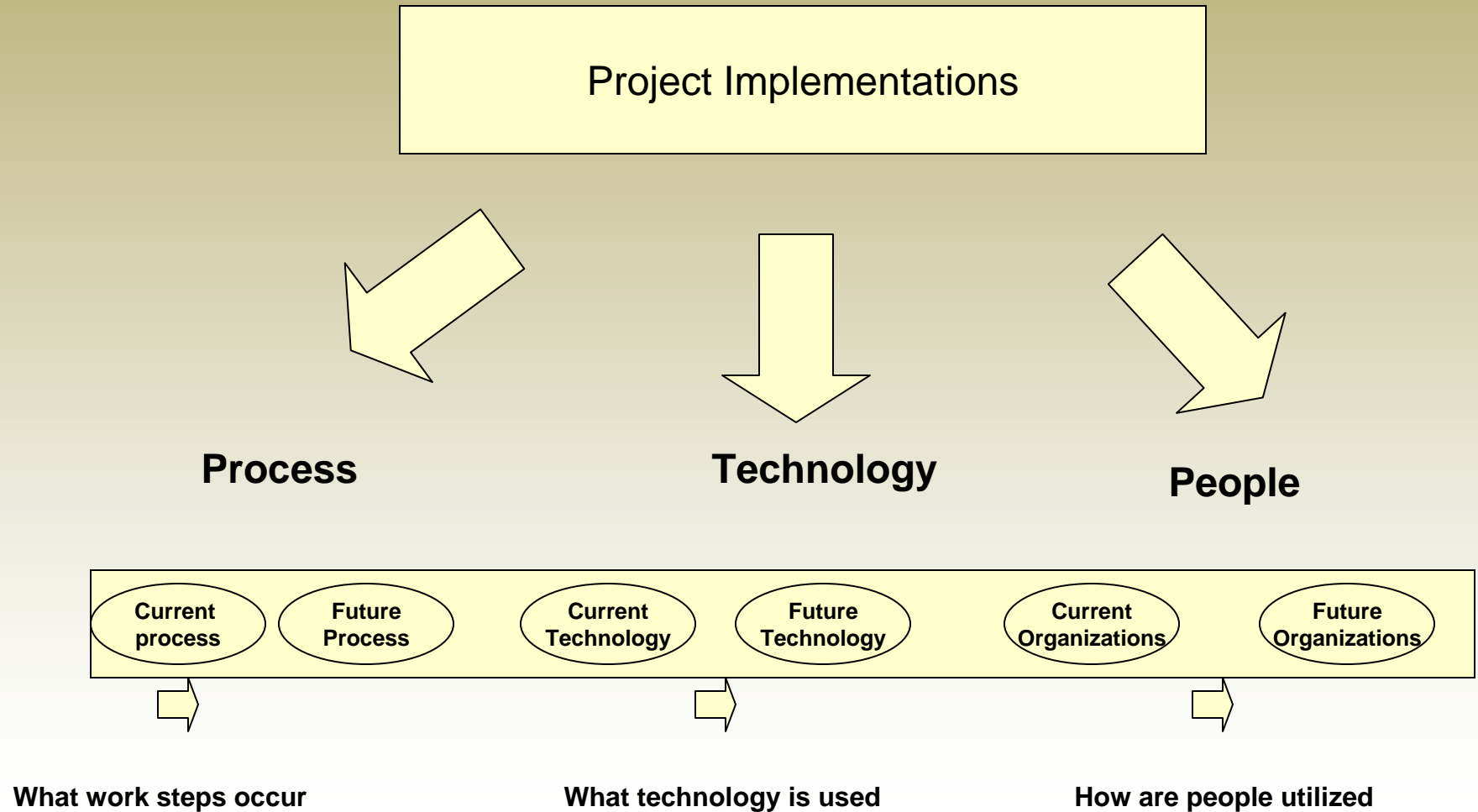
Relationship of Stakeholders



Courtesy: PMI



When implementing a project, an organization needs to consider not only technology but also process and people.





Nine Knowledge Areas

- Scope
- Cost
- Time
- Quality
- Risk
- Communication
- Procurement
- Integration
- Human Resources



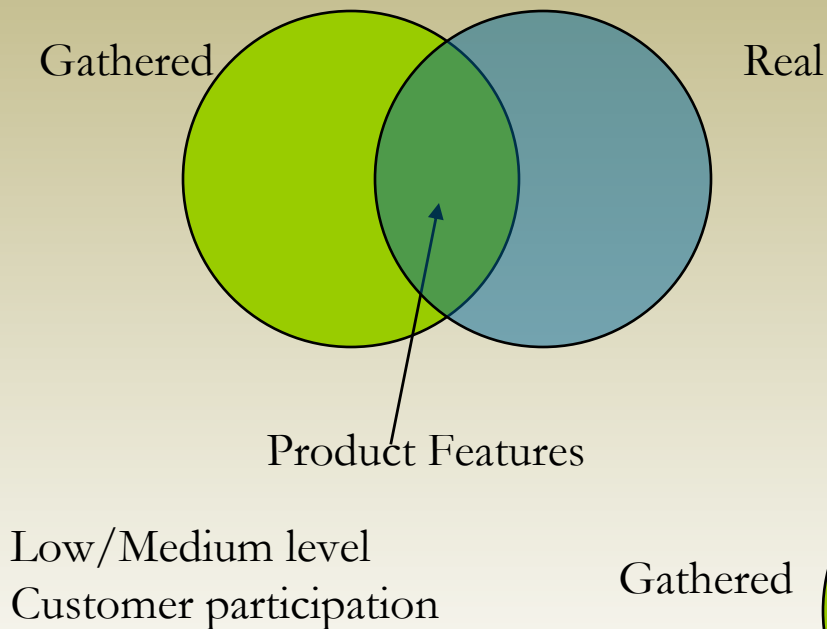
Scope Management

- Scope Planning
- Scope Definition
- Create WBS
- Scope verification
- Scope Control



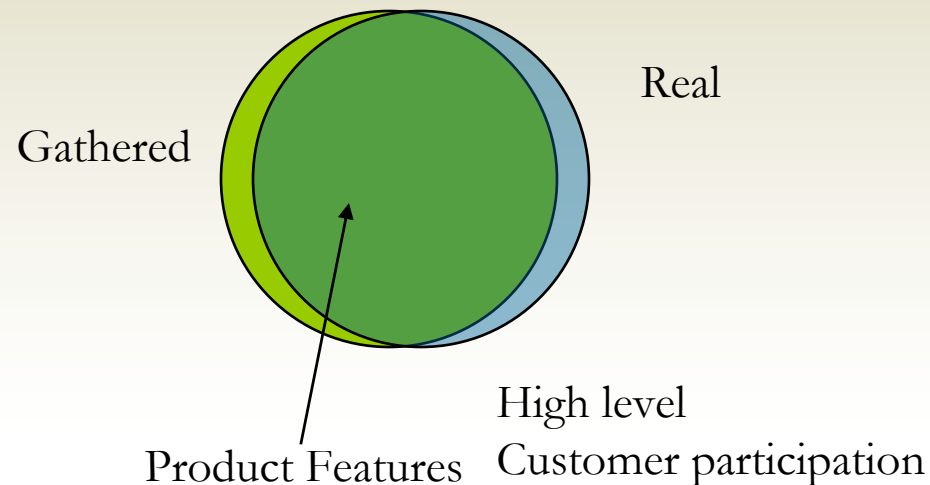


Requirement Gathering – A Collaborative effort



Strategies

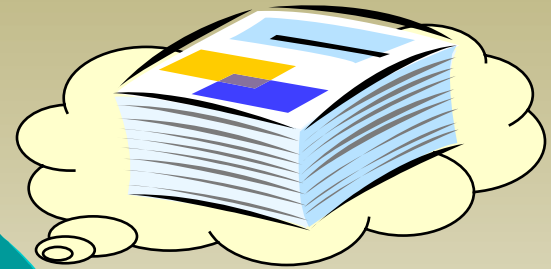
- Design feedback sessions
- Customer Sign off



Scope – Requirement Gathering



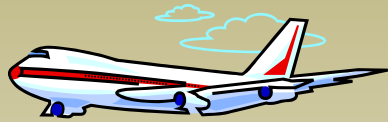
The sooner you begin coding the later you finish.



Need a report by COB today, Why not

Great, I know I can count on you

Scope - From the perspective of stakeholders



Project champion

We need a LIS



Project Sponsor

High level Requirements



Project Manager

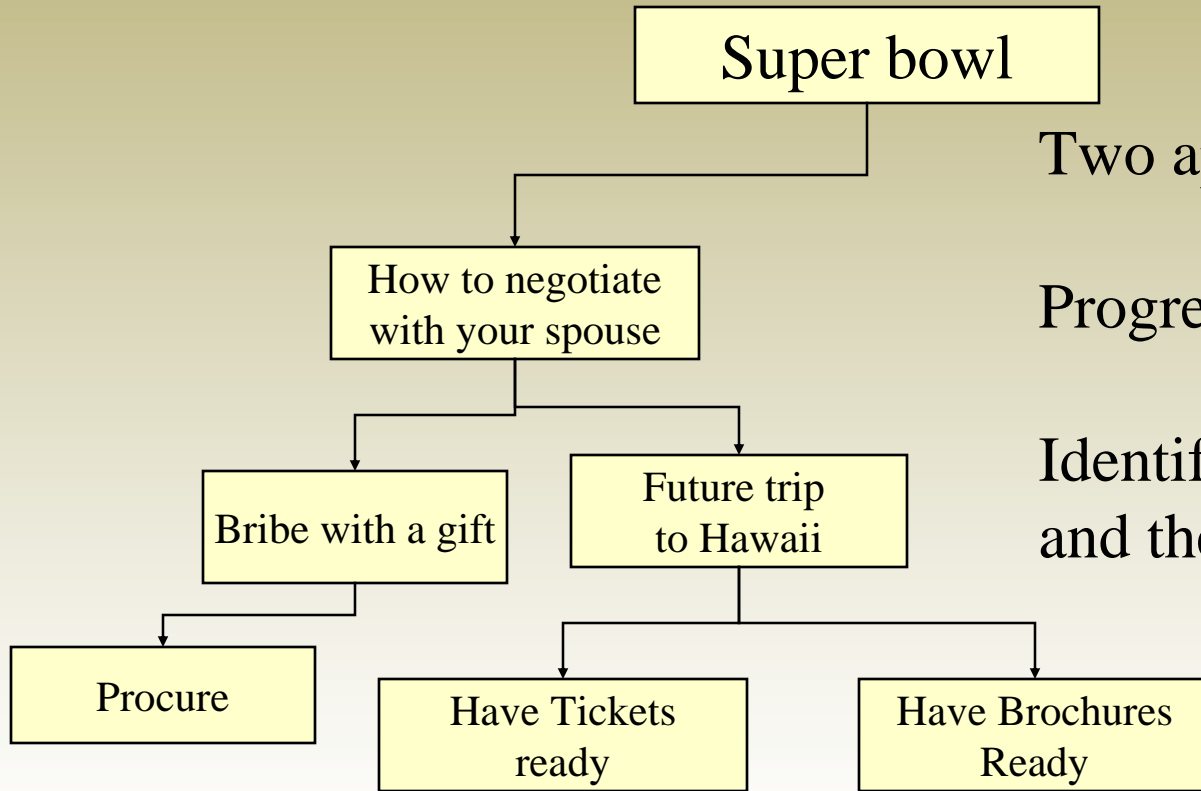


Detailed Design

A user will tell you anything you ask, but nothing more



Sample Work break down structure



Two approaches
Top down
Progressively detail the work.
Bottom up
Identify all work to be done
and then group



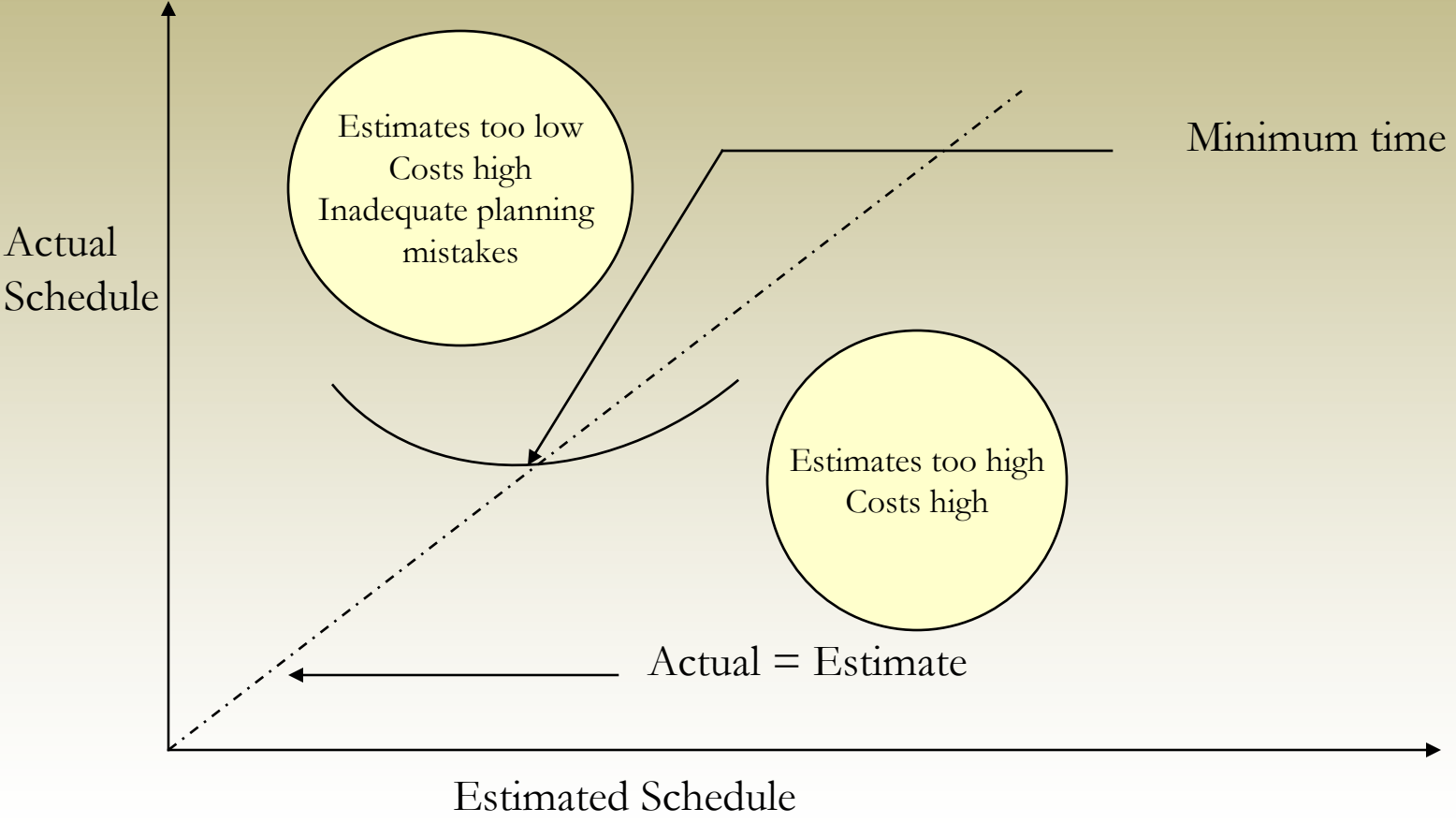
Cost Management

- Cost Estimating
- Cost control
- Cost budgeting





Schedule Cost relationship





Time Management

- Activity Definition
- Activity sequencing
- Activity Resource estimating
- Activity Duration estimating
- Schedule Development
- Schedule control

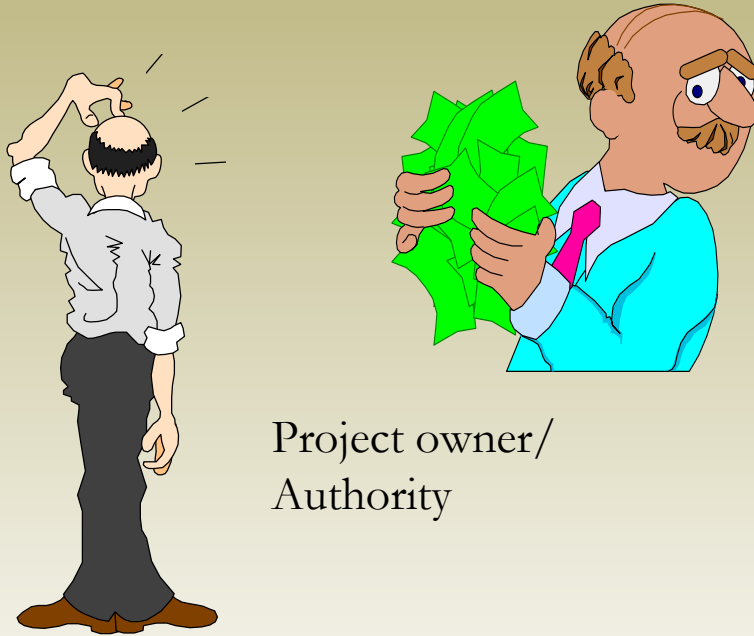




Schedule

- Exercise

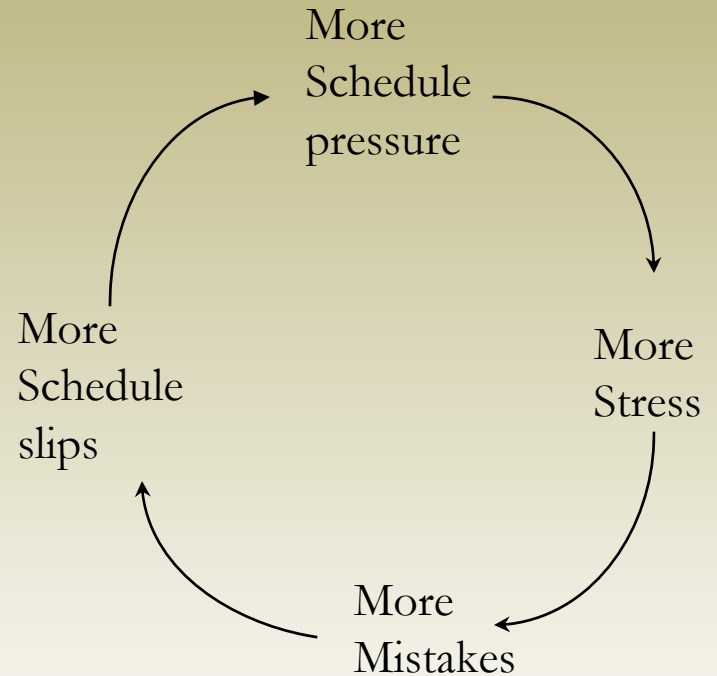
Schedule pressures



Project owner/
Authority

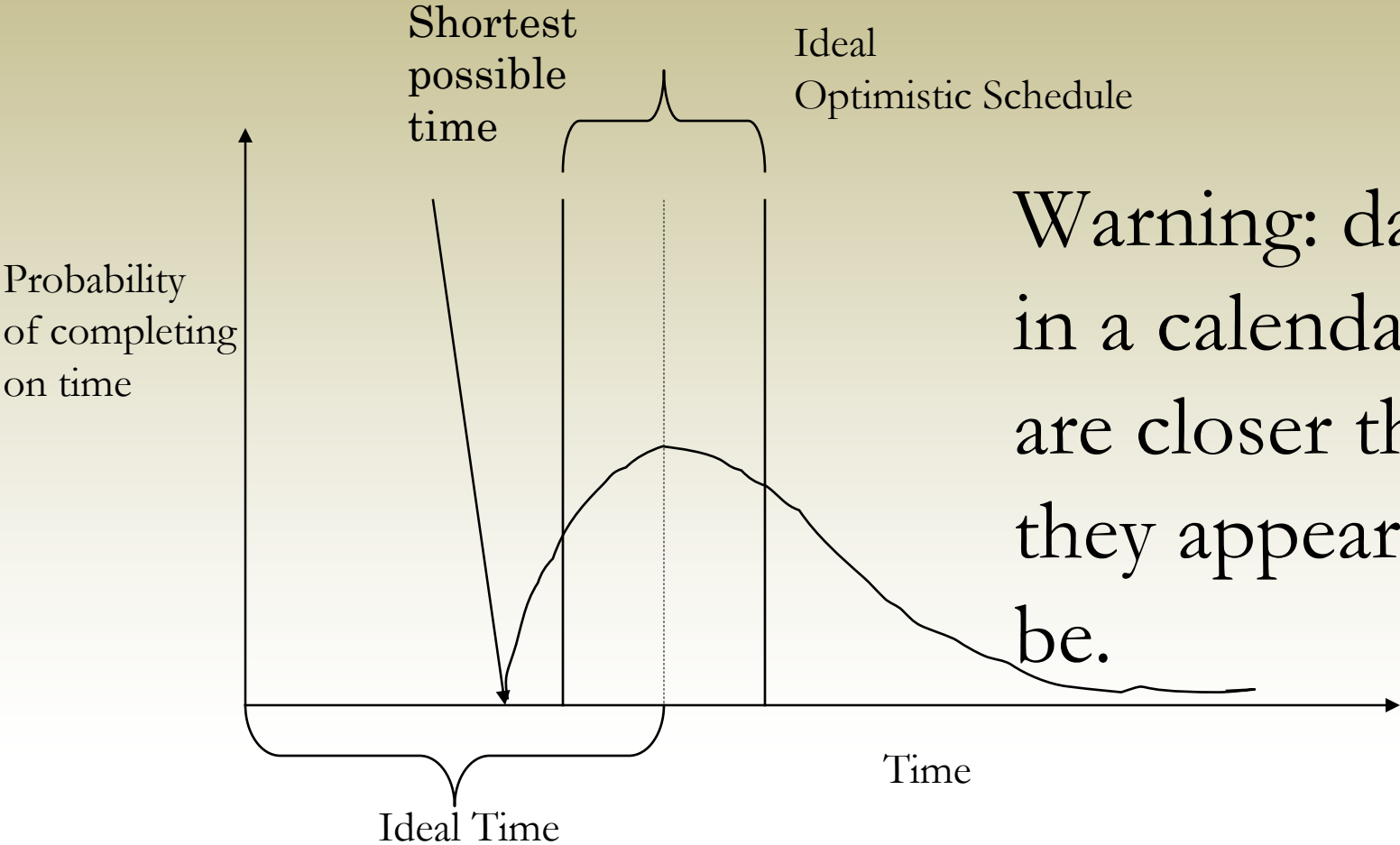
Project Manager

If the critical path says 6 months I am confident
“you can work hard to get it done in 4 months”





Schedule Risks



Warning: dates in a calendar are closer than they appear to be.



Quality Management

- Quality Planning
- Quality Assurance
- Quality Control

- The Fix it Quality Approach
- The inspect it in Approach
- The Built it in Approach
- The Design it in Approach





Risk Management

- **What you don't know hurts you**
- Risk management planning
- Risk identifications
- Qualitative Risk analysis
- Quantitative Risk analysis
- Risk response planning
- Risk monitoring and control

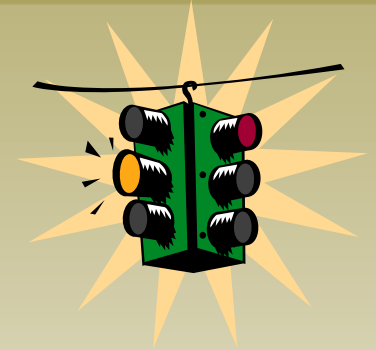


PHOTO-ILLUSTRATION: C.J. BURTON



Effective Risk management

- Bottom up project related issues
- Top down Organizational issues
- Not all risks are equal
- Risk becomes issues.....
- Large projects needs more frequent monitoring





Schedule

- Exercise




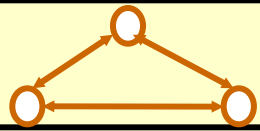
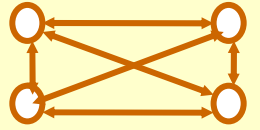
Communication management

- Communication planning
- Information distribution
- Performance reporting
- Manage stakeholders



Communication Paths



	2 people	One path
	3 people	3 paths
	4 people	6 paths
	10 people	45 paths
	50 people	1200 paths

Of several possible interpretations of a communication, the least convenient is the correct one.

$$\text{No of channels} = n(n-1)/2$$



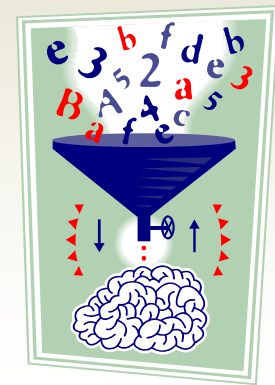
Procurement management

- Plan purchases and acquisitions
- Plan contracting
- Request seller responses
- Select sellers
- Contract administration
- Contract closure



Integration management

- Develop Project charter
- Develop preliminary scope statement
- Develop Project plan
- Direct and Manage Project execution
- Monitor and Control Project work
- Integrated change control
- Close project





Human Resources

- HR planning
- Acquire Project team (Beg, Borrow, bribe, demand)
- Develop Project team
- Manage Project team (Assign task, get status, manage conflict)



Team Selection

- Best of your staff...
- Interested
- Available , can dedicate time
- Right skill set
- Positive attitude
- Energetic... some projects will become a drag (you need a marathon runner than a sprinter)
- If it is a big project have dedicated scribe for taking minutes and organizing (Scheduling is a nightmare everywhere – everyone is so busy)

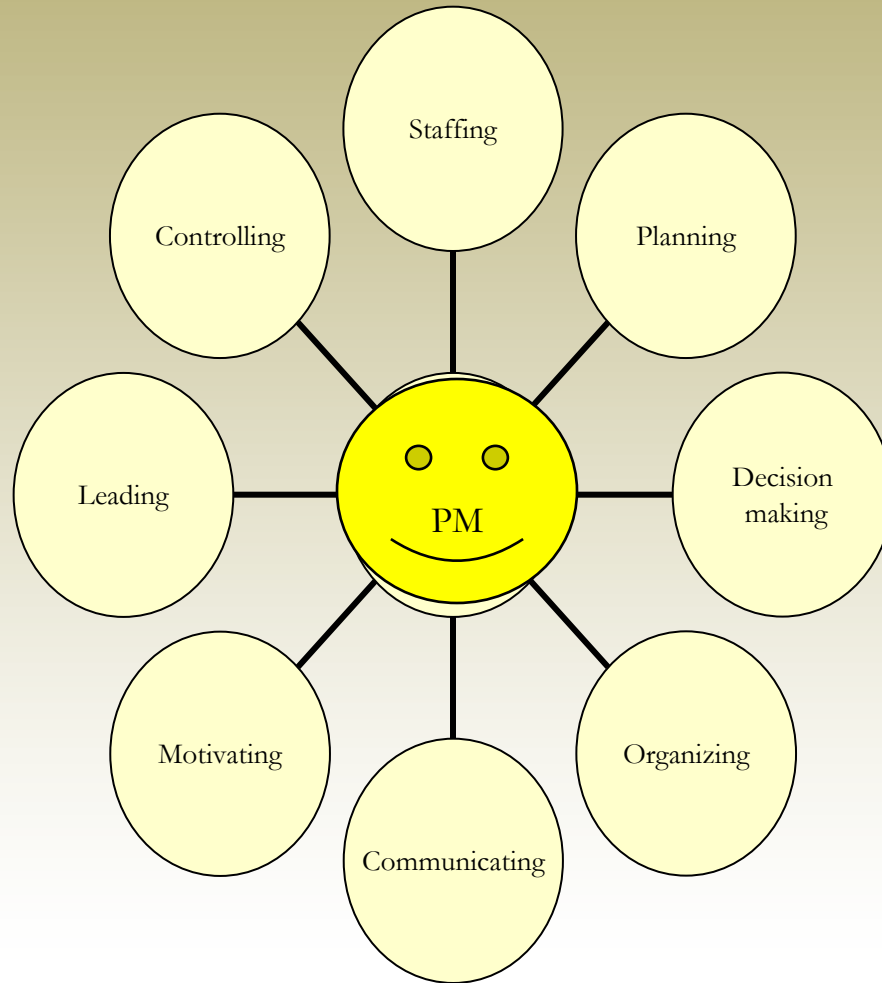


Role of PM

- PMs are accountable for the project success
- Responsible for Processes and deliverables
- Will find resources, remove conflicts (if requires escalation), make choices and decisions on project tasks.
- Will manage the budget , schedule, Scope, Risk, and Quality

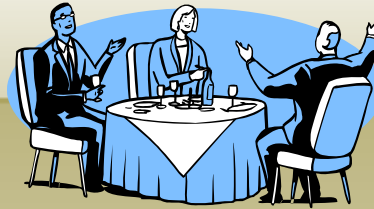


What does PM do?





Lunch Break





Welcome Back

- Exercise



Lessons Learned

- Every Project is a great Teacher, you always learn from every project irrespective of whether it is a success or failure
- Capture Lessons learned through the project, not at the end.
- Categorize
 - What Worked very well – Do it again
 - Was difficult but worked out at the end
 - Did not work very well – Don't try again
 - Wish we would have done this.

It is costly wisdom that is bought by experience.

Author: [Roger Ascham](#)

Source: *Schoolmaster*



Project tailoring

- Not all projects are same
- One size fit all is a myth when it concerns project
- Based on the complexity of the project they may be classified into low, medium or high and accordingly the PM processes can tailored.
- Low – A Charter, Scope, Schedule, budget, test scripts, closure, lessons learned.
- Medium: All the above, risk plan, cost and procurement plan
- High- All the above, Scope, change orders, communication and change management plans.



Managing small projects

- Small projects have a high probability for success
- Still needs attention and standard processes
- May want to group small projects into a program or portfolio (not to be confused with Portfolio management)
- Schedule is mandatory for all projects
- Sign off on requirements for small projects is vital
- Issue log instead of Risk management plan
- Frequent Status updates (since small project tend to close soon, if not closely monitored may end up with undesirable product)



Managing a process like a project

- Even at times processes can be managed as a project
- For example, Office upgrade, Operating system upgrade
- A clearly defined schedule is the best bet to complete the repeatable processes at least a WBS (Work break down structure) E.g. Air line pilots check list
- A feed back system to refine the processes through lessons learned process will help to create a lot of efficiency.
- Even process management requires clear communication and change management. E.g. Patch updates, Firewall changes, Main frame upgrades or VMWare updates.



Communicating with Techies

- Generalization apart Techie's tends to be Introverts.
- Developers thinks in a logical form
- Coding is their favorites and not the process
- You know by now they dislike documentation
- Testing is not their forte...
- Challenge them only when you know their subject very well (will gain respect)
- Fix the broken windows



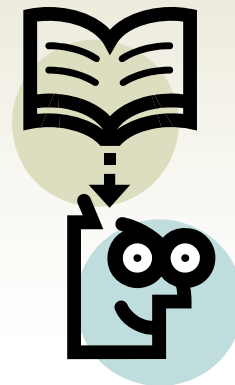
Legislative Project Challenges

- Complicated Process – highly flexible/dynamic rules and interpretations.
- Sponsorship Clarity
- Ownership of the application
- Political process constraints
- Staff Resources
- Schedule constraints
- Technology awareness and barriers
- Funding



Scope: How to collect User Requirements

- Video – Yes Prime Minister CD 1 Title 3 chapter 5
- Opening Files--- Relative Sequence
- Open ended questions initially – specific questions later
- Record the conversations for future clarifications
- Develop a process work flow diagram





Life Cycle Models

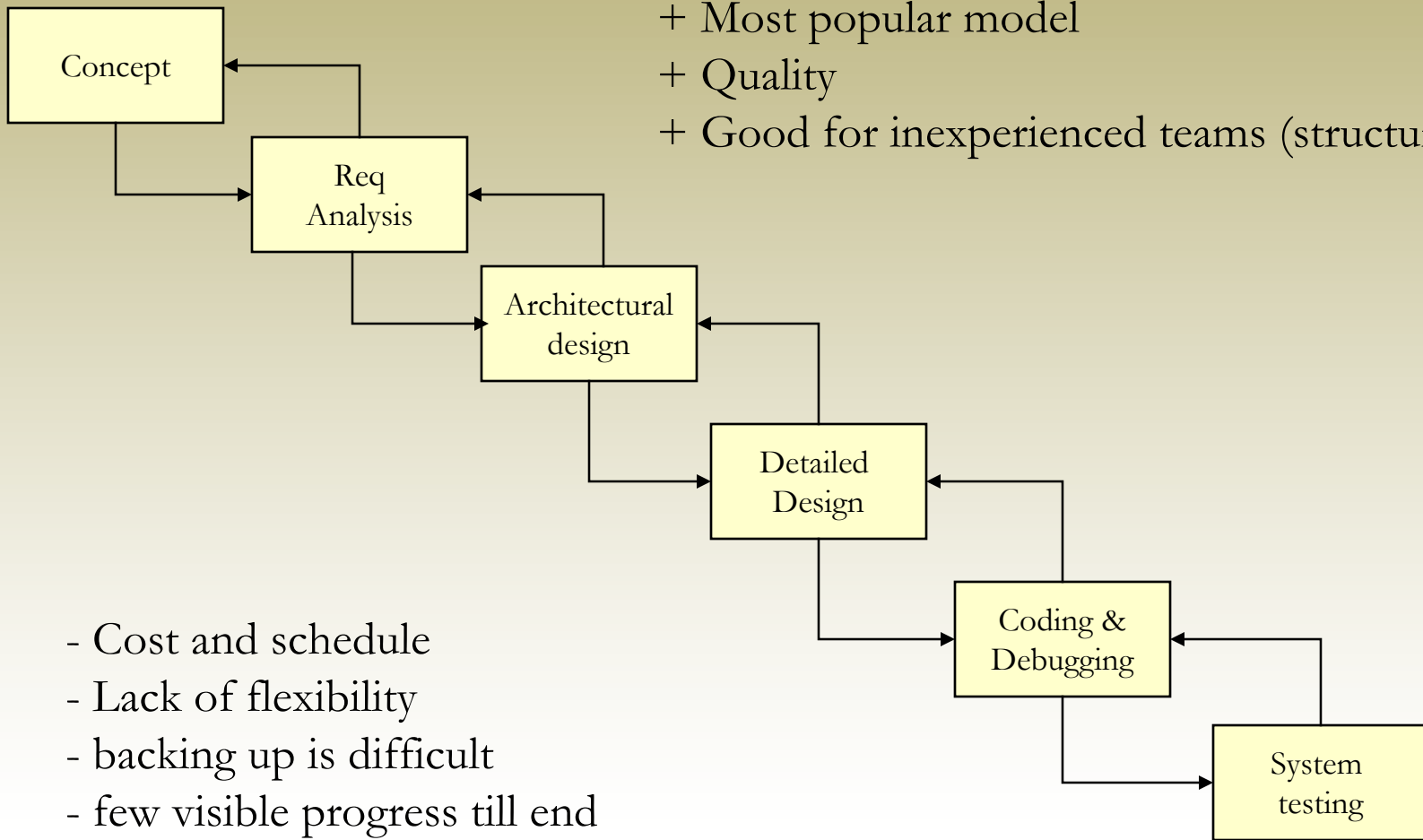
- Pure Water Fall
- Modified Water fall
 - Sashmi (water fall with phases)
 - Water fall with sub projects
 - Water fall with Risk reduction
- Code and Fix
- Spiral
- Evolutionary Prototyping



Life Cycle Models --- Continued

- Staged Delivery
- Design to schedule
- Evolutionary Delivery
- Design to Tools

Pure Water Fall

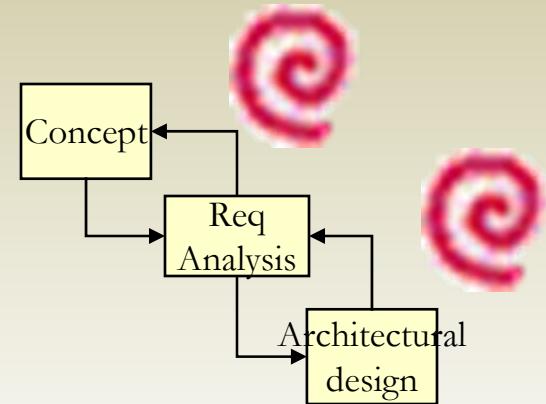
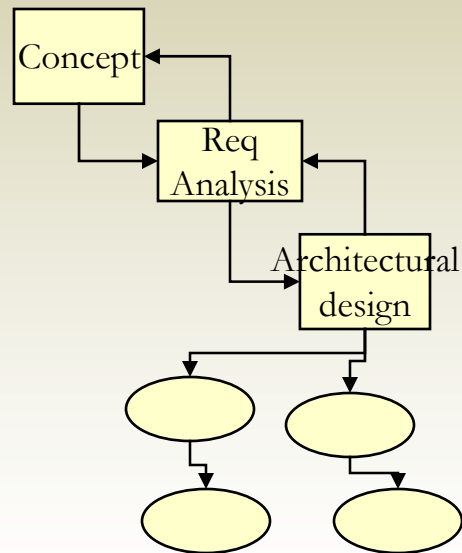
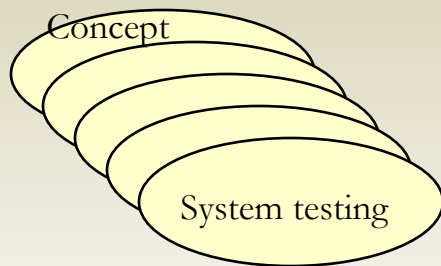


- + Most popular model
- + Quality
- + Good for inexperienced teams (structure)

- Cost and schedule
- Lack of flexibility
- backing up is difficult
- few visible progress till end

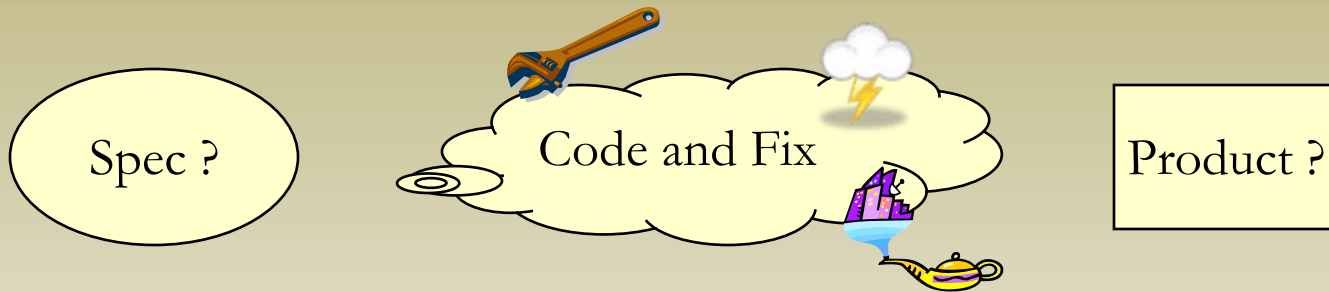
Modified Water fall

- Sashmi (water fall with phases)
- Water fall with sub projects
- Water fall with Risk reduction



Risk reduction for
High risk nucleus

Code and Fix



Though not very useful, most common.

If you have not selected / known any other model you must be using this one.

- + No Over head
- + Needs little experience
- no measure of progress
- poor quality
- if you are not luck very costly



Spiral

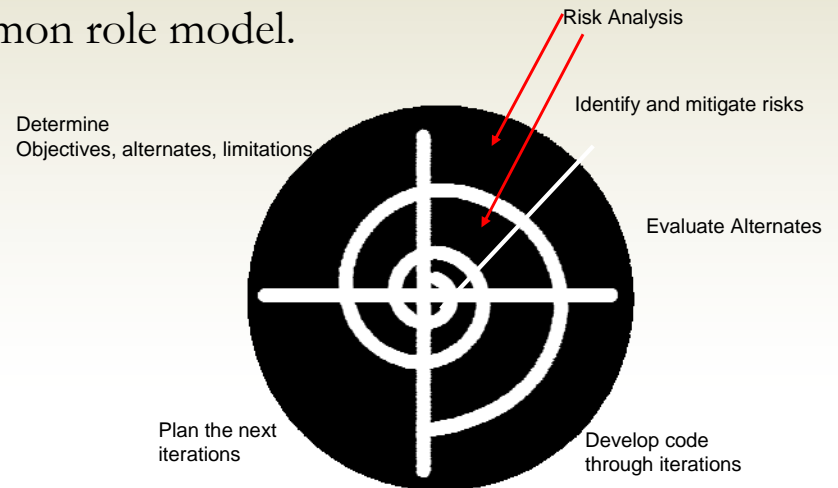
This is the most sophisticated and risk oriented model. In simple terms it breaks a complex large project into smaller sub projects.

Each mini projects addresses one or more major risks and once all risks are addressed and resolved, the spiral ends up as a water fall.

+++ Early risk identifications, early risk mitigations, Higher rate of success in large complex projects.

---- Complex, Detailed oriented at early stages, requires knowledgeable managements

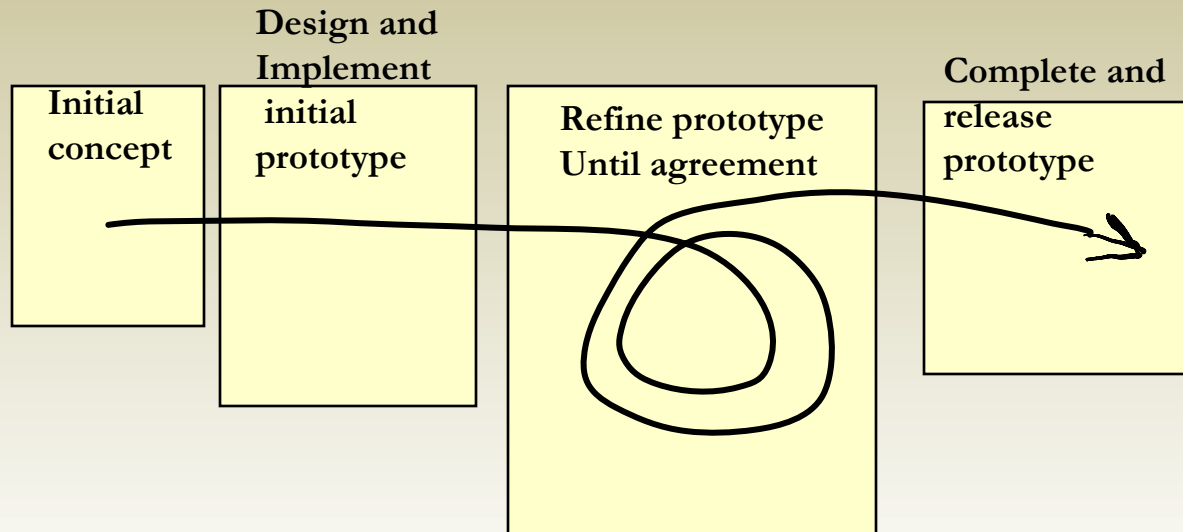
Fondly this model is also called as Cinnamon role model.





Evolutionary Prototyping

- Develop system concepts as you move through the project.

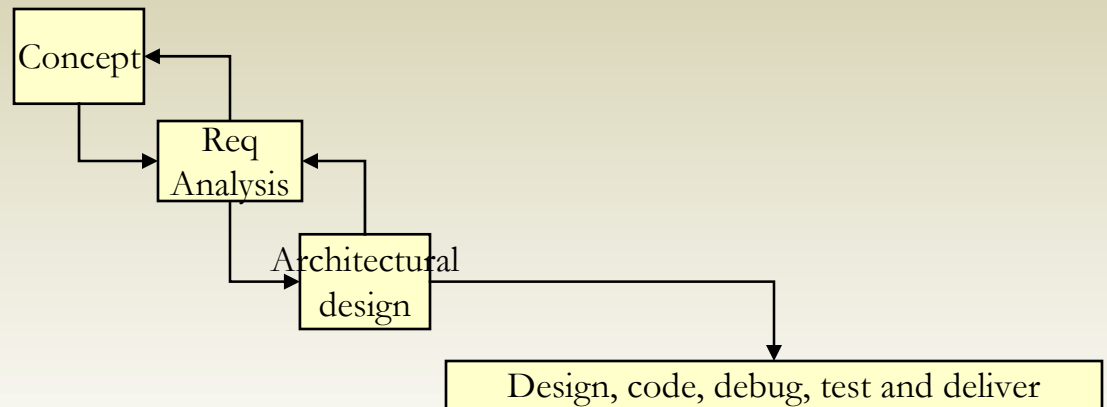


++ when requirement changes rapidly
Useful when the application area not clear
Provides steady visible sign of progress

--at start impossible to know how long it will take.

Staged Delivery

- Deliver the product in usable increments through out the life cycle.
- With proper planning this model can deliver the most critical functionality first



**++ Useful functionality at the hand of Customer.
Tangible sign progress**

-- Needs very careful planning

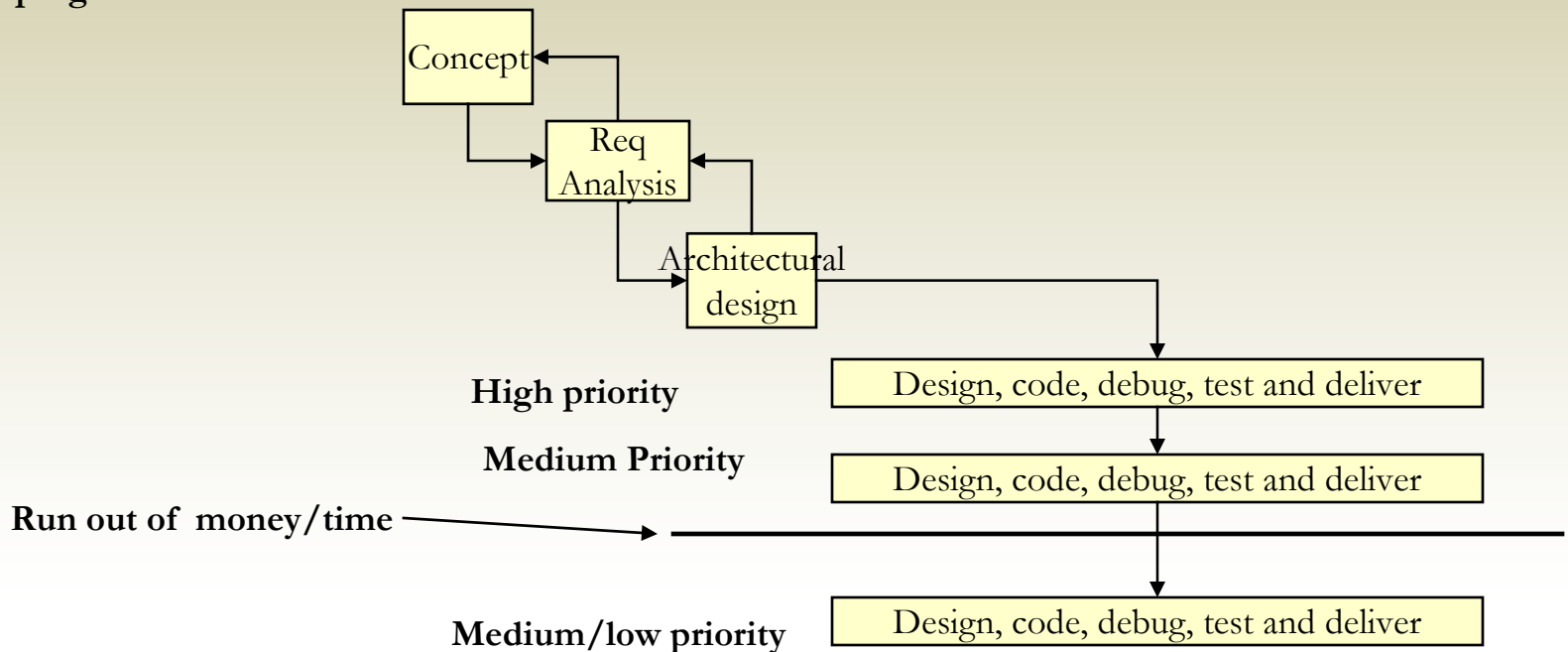


Design to schedule

- Similar to Staged delivery but limited by schedule or resources
- Schedule driven, high priority first and medium and low later

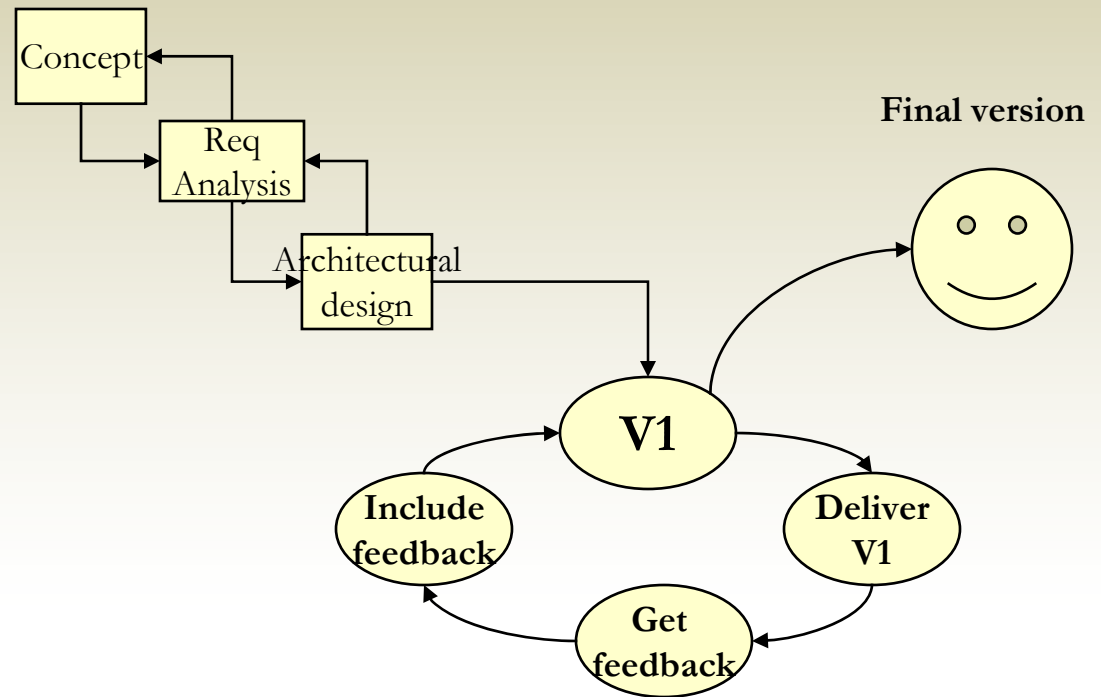
**++ Useful functionality at the hand of customer sooner.
Tangible sign progress**

-- May not get through all stages



Evolutionary Delivery

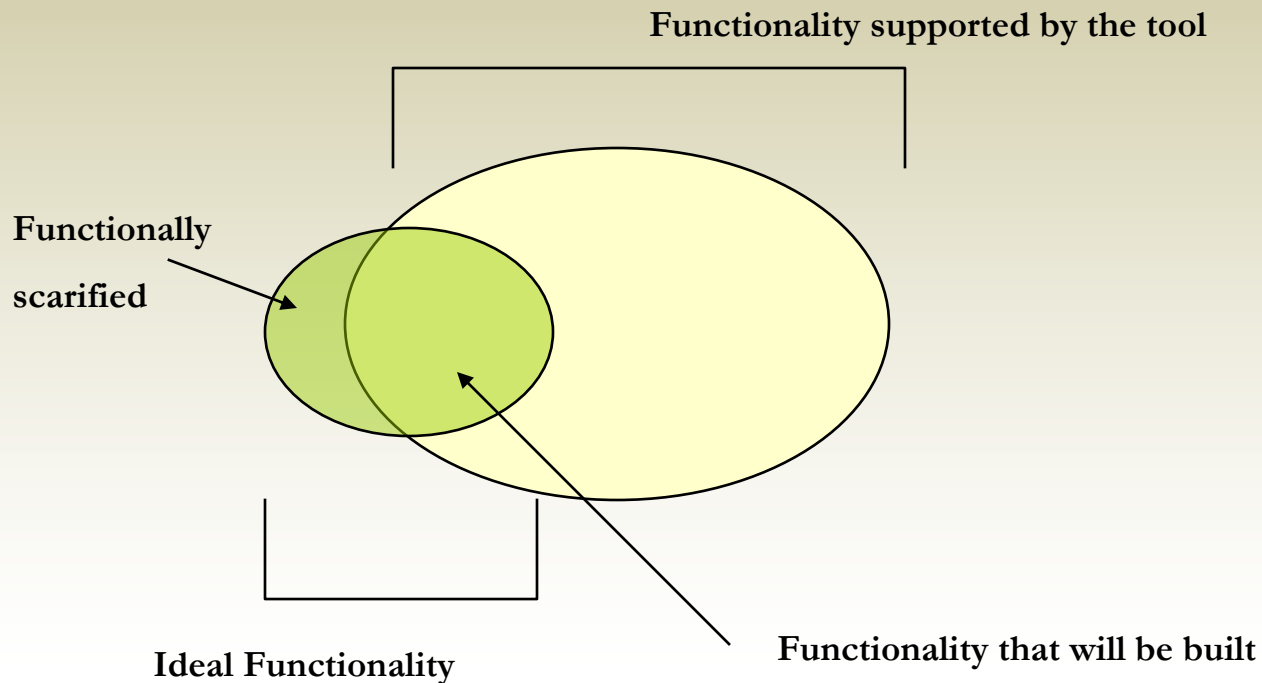
- Mid ground between evolutionary prototyping and Staged Delivery





Design to Tools

- Powerful flexible tools allows us to perform rapid development





Factors for choosing the most rapid life cycle

- Understanding of requirements
- How well the Architecture is defined and understood
- Reliability
- Risk tolerance
- Any schedule constraints
- Does customer prefers visible progress?
- Will the project require mid course corrections?



Team Models

- Business Team
- Chief Programmer Team
- Skunkworks Team
- Feature Team
- Search and Rescue Team
- SWAT team
- Professional Athletic Team
- Theater Team
- Large Teams

Business team

- Peer Group headed by a technical lead
- Aside from Technical lead the team members all have equal status
- The lead is chosen on the basis of technical expertise rather than management proficiency.
- It is adaptable to all kinds of projects which its strength as well the weakness.



Chief Programmer Team



- Developed by IBM in late 60s
- Based on the concept of Surgical team and takes advantage of the fact that specialists tend to outperform generalist
- Chief programmer is ultimately responsible for virtually all the decisions of the project.
- Good for creative projects, tactical execution projects
- Finding a superstar and retaining are challenges



Feature Team

- Based on features like development, QA, documentation etc
- Traditional hierarchical reporting structures
- Advantage of empowerment and accountability
- Good for problem resolution project and creative projects
- The overhead of Feature team will be wasted on Tactical executions.
- If all the tasks are well defined this team will have little to contribute





Skunkworks Team

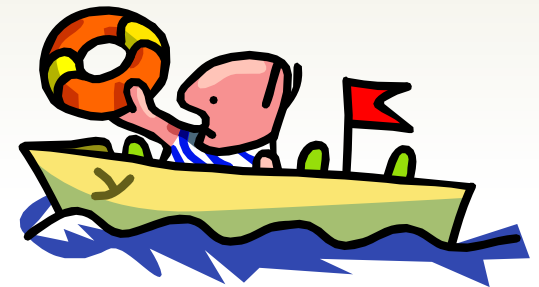
- A free form team where a leader emerges (can also designate)
- Team has freedom to organize as it wishes
- Freed from normal bureaucratic structure
- It creates intense ownership, buy in is easy
- Not much of a visibility
- Good for exploratory project bad for rapid development projects





Search and Rescue Team

- A team with very specific knowledge of piece of software and its business processes.
- For example if pay roll is to run by midnight you need a team to resolve any problem immediately not next day.
- Best suited for problem solving rather than development
- Not good for creativity or tactical execution due to limited spread of knowledge.





SWAT team (Skilled With Advanced Tools)

- Part of James Martin's RAD methodology
- A specific knowledge of an RDBMS or Software framework
- They could be permanent team not always perform their SWAT duties
- Good for Tactical execution, or problem solving
- Team member will have high trust



Professional Athletic Team

- Typical in Shrink wrap software production
- Highly skilled star programmers, architects best in their field
- Athletic teams have highly specialized roles (WR (wide receiver) don't want to be a QB)
- Manager like NFL could a be former star performer
- Best for tactical execution, software development



Theater Team

- This team is characterized by strong direction and lot of negotiations about project role
- Software manager plays the role of the producer stay away from an active role
- PM serves as Director, the individual players can use creativity as long it does not conflict with the director's vision
- Good for team of strong personalities
- Good for project where lot of technologies converge





Large Teams

- Large teams are generally organized like a large corporation .
- Communication will be a challenge
- Nightmare for the project manager
- Projects like ERP, Vista development





Why Projects Fail ?

• Incomplete Requirements	13.1%
• Lack of user Involvement	12.4%
• Lack of Resources	10.6%
• Unrealistic expectations	9.9%
• Lack of executive support	9.3%
• Changing Requirements & Spec	8.7%
• Lack of planning	8.1%
• Did not need is any longer	7.5%
• Lack of IT management	6.2%
• Technology Illiteracy	4.3%
• Others	9.9%



Project Success Factors

- User Involvement 15.9%
- Executive management support 13.9%
- Clear Statement of Requirements 13.0%
- Proper Planning 9.6%
- Realistic Expectations 8.2%
- Smaller project Milestones 7.7%
- Competent staff 7.2%
- Ownership 5.3%
- Clear vision and Objectives 2.9%
- Hard working focused staff 2.4%
- Others 13.9%



Comparison

Project Failures

- Incomplete Requirements 13.1%
- Lack of user Involvement 12.4%
- Lack of Resources 10.6%
- Unrealistic expectations 9.9%
- Lack of executive support 9.3%
- Changing Requirements & Spec 8.7%
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Source: 1994 Chaos Report

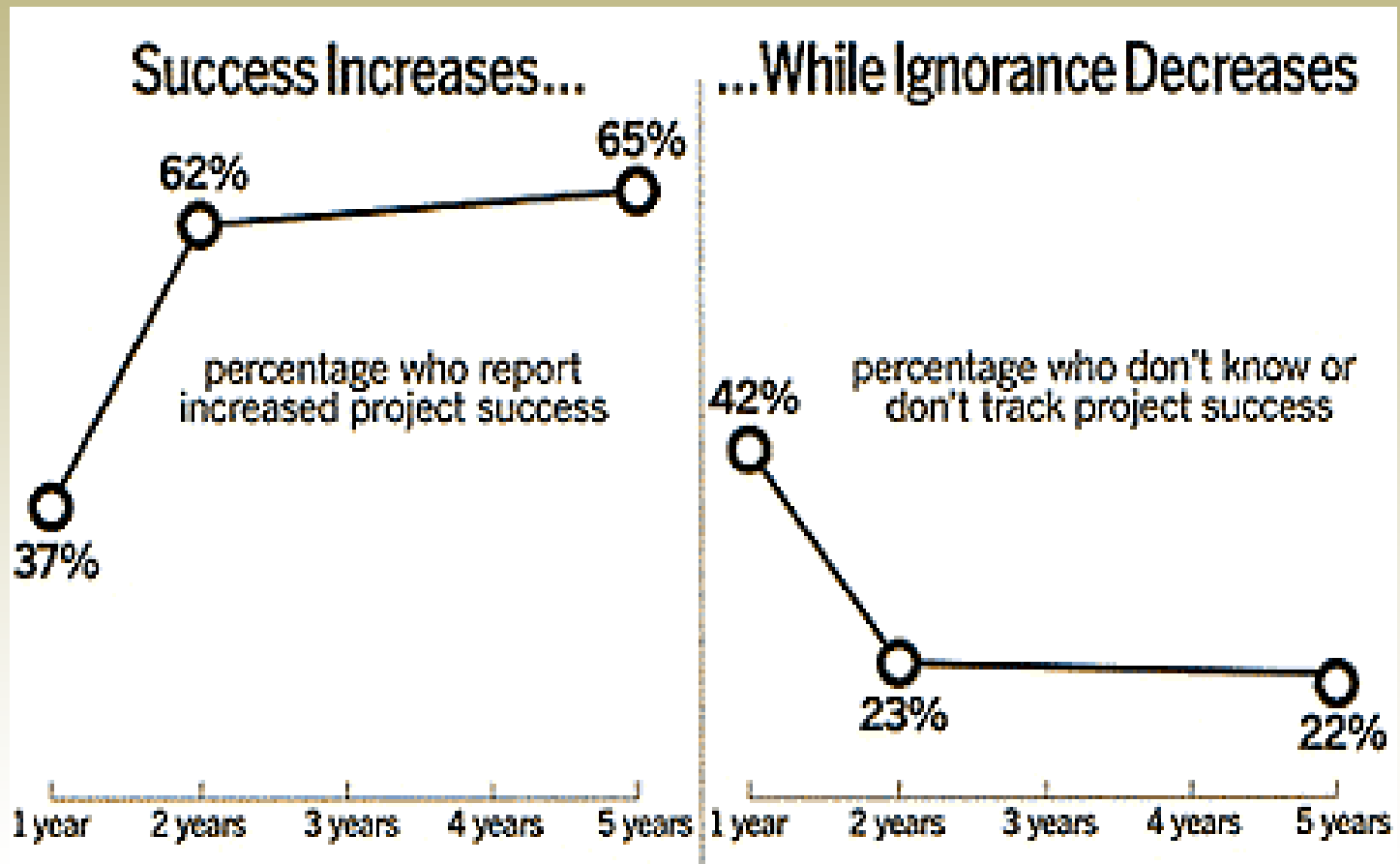


Fast Forward 2006

- Project Challenges in 2006
 - Lack of clarity in scope 64%
 - Project Changes not managed well 43%
 - Shifting Org priorities 36%
 - Lack of PM skills 36%
 - Loss of control due inadequate Project plan 36%



Effect of PM



SOURCE: CIO/PMI SURVEY (AVAILABLE ONLINE AT www2.cio.com/research)



Closing remarks ---- Any how

Project Management is the art of creating the illusion that any outcome is the result of predetermined , deliberate acts when , in fact, it was

dumb luck

Kerzner



Reference/Bibliography

- PMI – Project Management Institute
- Rapid Development – Steve McConnell
- Management – Kreitner
- PM Network Magazine
- Yes Prime Minister Video - BBC