

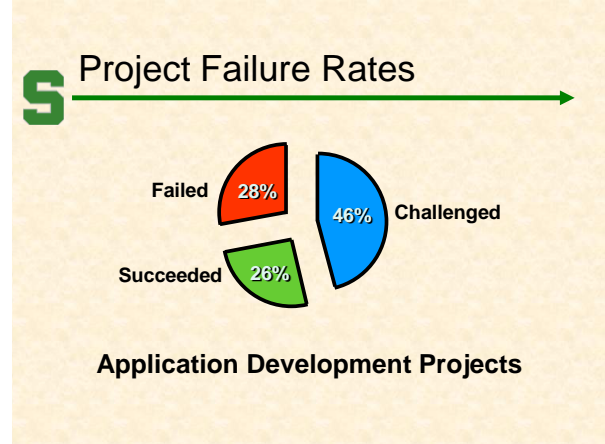
MICHIGAN STATE UNIVERSITY

10. Project Management and Teamwork

CSE 498, Collaborative Design




Wayne Dyksen
Department of Computer Science and Engineering
Michigan State University
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Root Causes of Failure

- Separation of ...
 - Goal and Function
 - Business and Technology
- Lack of Common
 - Language
 - Process
- Failure to
 - Communicate
 - Act as a Team
- Inflexible Processes



"When projects fail, it's rarely technical."
Jim Johnson, The Standish Group

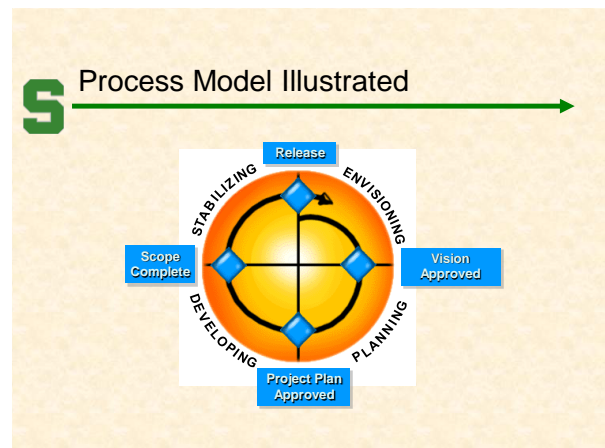
Project Management & Teamwork

Consider Managing..

- ☒ The Process
- The Risks
- The Team

Software Development Models

- NB: Model "Imposes" Order for Activities
- Two Popular Models
 - Waterfall Model
 - Spiral Model (Rapid Application Development Model)
- Process Model
 - Milestone-Based Process
 - Flexible and Iterative
 - Hybrid of Waterfall and Spiral



S Milestones

- Used For
 - Review Points
 - Synchronization Points
 - Not Freeze Points
- Enable
 - Assessment of Progress
 - Mid-Course Corrections

S Types of Milestones

- Major Milestone
 - Met by Tangible Deliverables
 - Acceptance by Team and Customer
 - Establishes Agreement to Proceed
- Interim Milestone
 - Met by Tangible Deliverables
 - Acceptance by Team and Possibly Customer
 - Establishes Ability to Proceed

S Principles of a Successful Process

- Creating Living Documents
- Using Versioned Releases
- Making Project Trade-offs

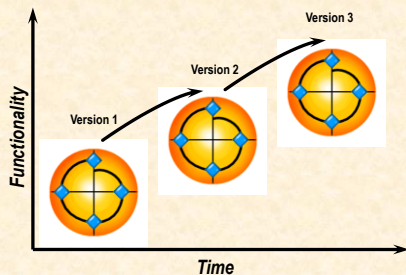


S Creating Living Documents

- How
 - Base Lining As Early As Possible
 - Freezing As Late As Possible
- Why
 - Avoids “Analysis Paralysis”
 - Establishes Structured Change Control Process



S Using Versioned Releases



S Versioned Releases: Benefits

- Force Closure On Project Issues
- Set Clear And Motivational Goals With All Team Members
- Manage Uncertainty And Change In Project Scope
- Encourage Continuous And Incremental Feature Delivery
- Enable Shorter Time To Market

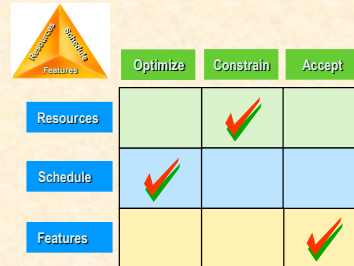


S Versioned Releases: Guidelines

- Adopt A Product Mindset
- Create A Multi-version Release Plan
- Cycle Rapidly To Make Customers And Users Confident Of Your Team's Ability To Ship
- Analyze Each Feature Request For Impact, Feasibility, And Priority
- Deliver Core Functionality First So You Can Build On It
- Stop Doing New Versions When They No Longer Add Business Value



S Making Project Trade-offs



S Principles of Accurate Scheduling

- Bottom-up Estimating
- Fixed Ship Date Mindset
- Risk Driven Scheduling
- Scheduling For An Uncertain Future
 - Adding Buffer Time
 - Using Interim Milestones
 - Using Discrete Tasks



S Zero-Defect Mindset

- Team members must understand the required quality level for their work.
- Work is not complete until it reaches that level of quality.
- The zero-defect mindset is embodied in task deliverables and milestones.



S Zero-Defect Techniques

- Write unit test cases before debugging.
- Assume the code is broken; prove that it isn't.
- Fix bugs before moving on.
- Use competing designs and implementations.
- Assign bugs to other developers.
- Reassess the code in light of bugs.
- Document code.
- Conduct code reviews.
- Perform daily builds.

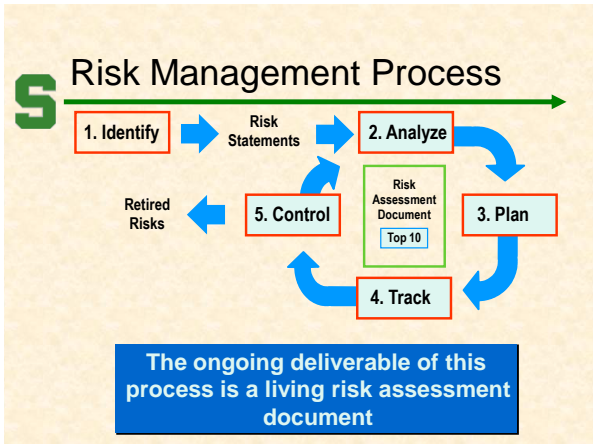
S Project Management & Teamwork

Consider Managing..

The Process

The Risks

- The Team



S Project Management & Teamwork

Consider Managing..

- The Process
- The Risks
- The Team

S Your CSE498 Grade

- 70% Team
- 30% Individual

S Teamwork: The Dilemma (1 of 4)

For University Faculty
In General...

- Not Highly Valued
- Usually Teamwork << Individual Work
- Not the Norm
- Not Great Models

S Teamwork: The Dilemma (2 of 4)

For University Students
In General...

- Not Valued
- Usually Teamwork == Cheating
- Not the Norm
- Not the Experience

S Teamwork: The Dilemma (3 of 4)

For Corporate Professionals
In General...

- Highly Valued
- Teamwork >> Individual Work
- Norm
- Lots of Models and Experiences

S Teamwork: The Dilemma (4 of 4)

- Corporations Want In General...
- Highly Technical Individuals
- Evaluations (Grades)
 - Individualized
 - Based On Technical Abilities
- Team-Oriented Individuals
- Teamwork Experiences

} Similar "Dilemma" with Communication Skills

S Teams Without a "Boss"

- Hard Because...
 - No One Person "In Charge"
 - Can't Make Anybody do Anything
 - Uncomfortable To Complain About Others
- Not Uncommon
- Cross-Functional (Cross-Unit) Teams
- Includes Someone From...
 - Sales
 - Marketing
 - Development
 - Testing
 - Deployment
 - Etc.

} All Report to Different Managers

S Variations on a Team

- "Brains"
 - Knowledge
 - Experiences
 - Abilities
- "Brawn"
 - Work Ethic
 - Pride in Work
 - Attitude
 - Willingness to Learn
- Other
 - Personality
 - Personal Life
 - Etc.
- Etc.

} Equally True In Corporate World

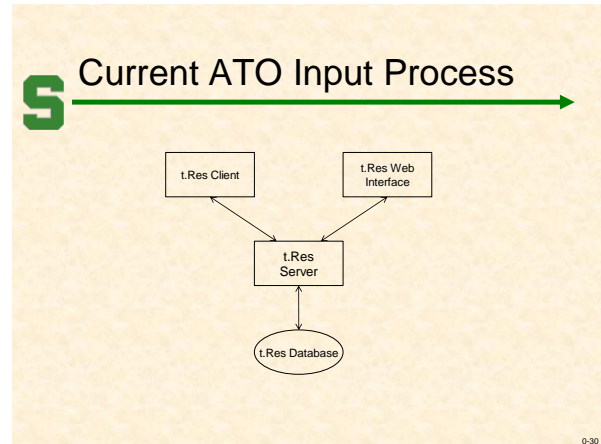
S Misconceptions

In the corporate world...

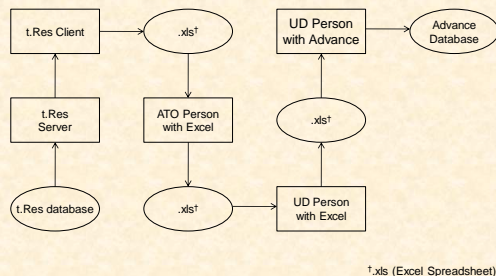
- ...you get to pick your teammates.
- ...everyone on your team...
 - ...is smart.
 - ...works hard.
 - ...contributes equally.
 - ...cares about the project.
 - ...is easy to get along with.
 - ...will get agree and get along.
- ...lazy teammates will be...
 - ...identified.
 - ...fired.
- ...teamwork will be easier than in CSE498.

S Dr. D.'s Latest Team at MSU

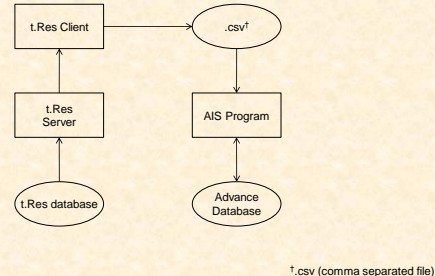
- ATO to UDO Data Migration Process
- Team
 - Computer Science Professor (Dr. D.)
 - Athletic Ticket Office Folks
 - Associate Athletic Director
 - Ticket Manager
 - University Development Office Folks
 - Manager
 - Gifts Coordinator
 - Data Input Person
 - AIS Computer Programmer



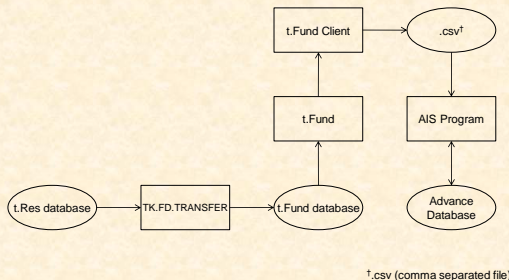
S Getting Data from ATO to UDO



S Possible Migration Process A



S Possible Migration Process B



S Are you a team player?

- www.monster.com
- Barbara Reinhold
- Answer True or False
- What's my score?
- <http://content.monster.com/tools/quizzes/teamplayer/>

S 500 Tips on Group Learning

- by Phil Race
- Kogan Page Limited
120 Pentonville Road
London, N1 9JN, UK
- Distributed by Stylus Publishing Limited
2283 Quicksilver Drive
Sterling, VA 20166, USA.
- www.styluspub.com
- www.phil-race.com

S The Five Dysfunctions of a Team

- A Leadership Fable
- By Patrick Lencioni
- Jossey-Bass
A Wiley Company
989 Market Street
San Francisco, CA 94102-1741
- www.josseybass.com
- www.tablegroup.com

S Team of Peers

- Is A Team Whose Members Relate As Equals
- Has Specific Roles And Responsibilities For Each Member
- Empowers Individuals In Their Roles
- Holds Members Accountable For The Success Of Their Roles
- Drives Consensus-Based Decision-Making
- Gives All Team Members A Stake In The Success Of The Project



S Team Model



Every Place
Different

S Product Management Role

- Acts As Customer Advocate To The Team
- Acts As Team Advocate To The Customer
- Drives Shared Project Vision
- Manages Customer Expectations
- Develops, Maintains, And Executes The Business Case
- Drives Feature Identification And Prioritization
- Develops, Maintains, And Executes The Communications Plan



S Program Management Role

- Drives The Overall Process
- Manages Resource Allocation
- Manages The Project Schedule And Reports Project Status
- Manages The Product Scope And Specification
- Facilitates Team Communication And Negotiation
- Drives Overall Critical Trade-off Decisions



S Development Role

- Builds And Tests Features To Meet The Specification And Customer Expectations
- Participates In Design
- Estimates Time And Effort To Complete Each Feature
- Serves The Team As A Technology Consultant



S Testing Role

- Develops Testing Strategy, Plans, And Scripts
- Manages The Build Process
- Conducts Tests To Accurately Determine The Status Of Product Development
- Participates In Setting The Quality Bar



S User Education Role



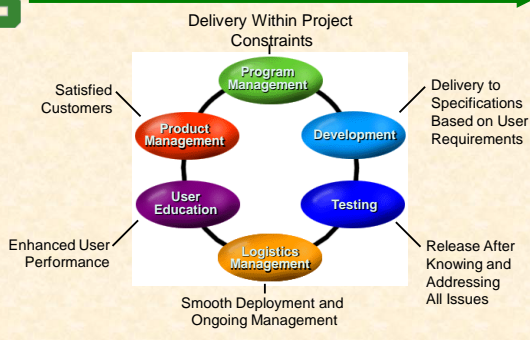
- Acts As Team Advocate To The End User
- Acts As End-user Advocate To The Team
- Participates In Defining User Requirements
- Participates In Designing Features
- Designs And Develops User Support Systems
- Drives The Usability Process

S Logistics Management Role

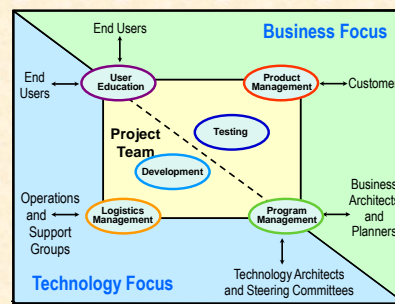


- Acts As Team Advocate To Operations
- Acts As Operations Advocate To The Team
- Plans And Manages Product Deployment
- Participates In Design, Focusing On Manageability, Supportability, And Deployability
- Supports The Product During Beta Testing
- Trains Operations And Help Desk Personnel For Product Release

S Team Model



S Coordination with External Teams



S Principles of a Successful Team

- Shared Project Vision
- Product Mindset
- Zero-Defect Mindset
- Customer-Focused Mindset
- Willingness To Learn