# Introduction to Project Management

# The 4 P's

- People the most important element of a successful project
- Product the software to be built
- Process the set of framework activities and software engineering tasks to get the job done
- Project all work required to make the product a reality

#### Software Teams

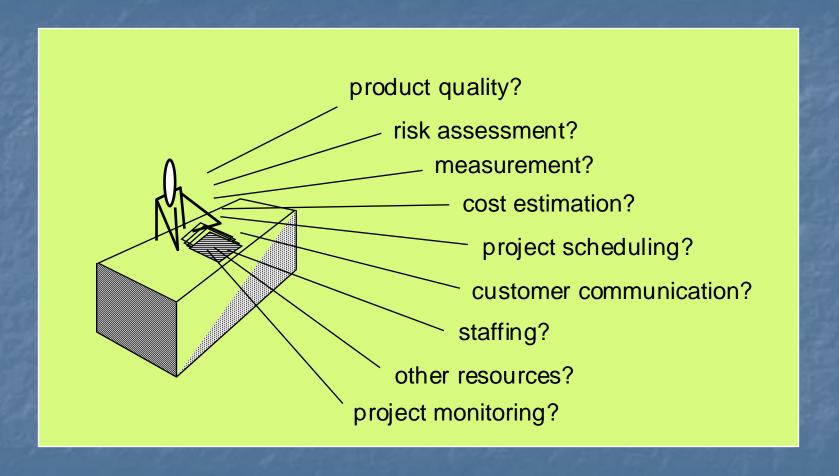
The following factors must be considered when selecting a software project team structure ...

- the difficulty of the problem to be solved
- the size of the resultant program(s) in lines of code or function points
- the time that the team will stay together (team lifetime)
- the degree to which the problem can be modularized
- the required quality and reliability of the system to be built
- the rigidity of the delivery date
- the degree of sociability (communication) required for the project

# Organizational Paradigms

- closed paradigm—structures a team along a traditional hierarchy of authority
- random paradigm—structures a team loosely and depends on individual initiative of the team members
- open paradigm—attempts to structure a team in a manner that achieves some of the controls associated with the closed paradigm but also much of the innovation that occurs when using the random paradigm
- synchronous paradigm—relies on the natural compartmentalization of a problem and organizes team members to work on pieces of the problem with little active communication among themselves

#### Project Management Concerns



### Defining the Problem

- establish scope—a narrative that bounds the problem
- decomposition—establishes functional partitioning

# Melding Problem and Process

		341		20	33.	1161	w.	200	D.	17.0	37.	40	120	-14		1	25	1.0
COMMON PROCESS FRAMEWORK ACTIVITIES	/	Jesto	Consider	nication (	Nami	Sum!	184	analysi.	, /		Į ė	Singer	ÇO)	/	/			
Software Engineering Tasks																	$\prod$	
Product Functions																		
Text input																		}
Editing and formating																		
Automatic copy edit																	7	
Page layout capability															П		7	
Automatic indexing and TOC																T	1	
File management																	\	
Document production																	1	
																	7	
				П											П		7	
	П													Ī				

#### Software Projects

Factors that influence the end result ...

- size
- delivery deadline
- budgets and costs
- application domain
- technology to be implemented
- system constraints
- user requirements
- available resources

#### Why Projects Fail?

- changing customer requirements
- an unrealistic deadline is established
- an honest underestimate of effort
- predictable and/or unpredictable risks
- technical difficulties
- miscommunication among project staff
- failure in project management

#### To Get to the Essence of a Project

- Why is the system being developed?
  What will be done? By when?
  Who is responsible for a function?
  Where are they organizationally located?
  How will the job be done technically and managerially?
- How much of each resource (e.g., people, software, tools, database) will be needed?

#### **Critical Practices**

- Formal risk analysis
- Empirical cost and schedule estimation
- Metric-based project management
- Earned value tracking
- Defect tracking against quality targets
  - People-aware project management