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

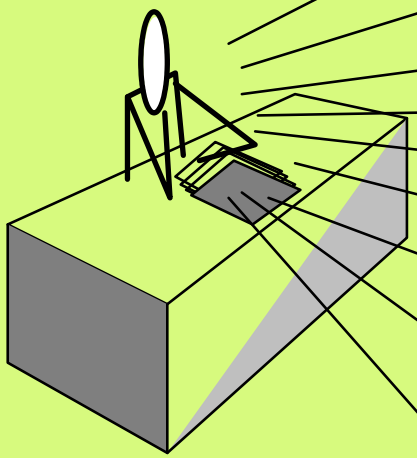
The following factors must be considered when selecting a software project team structure ...

- 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



product quality?

risk assessment?

measurement?

cost estimation?

project scheduling?

customer communication?

staffing?

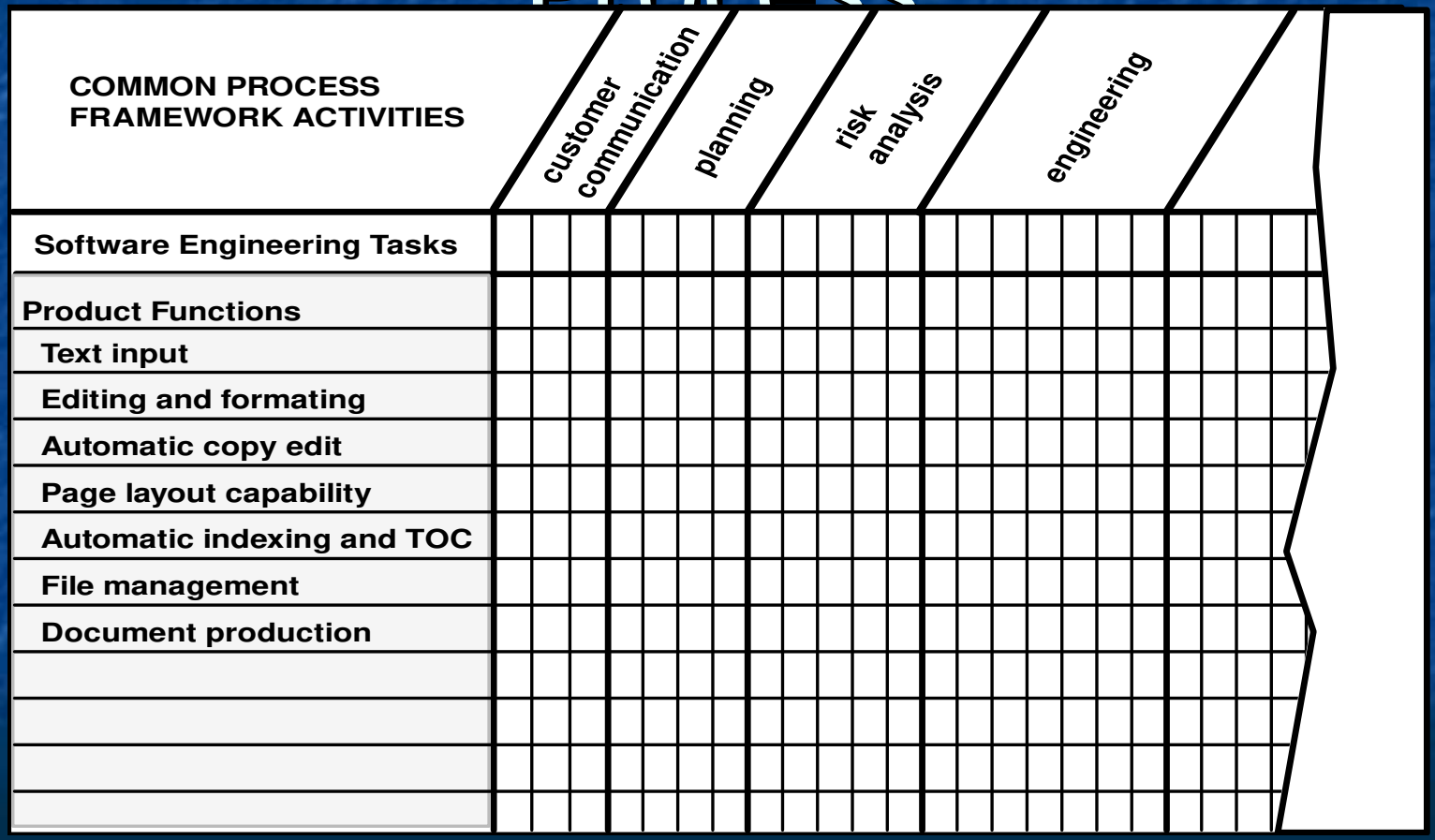
other resources?

project monitoring?

Defining the Problem

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

Melding Problem and Process



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