

Process & Project Mgmt - Intro



SWEN 256 – Software Process & Project Management

Software Engineering

∞ What do the following have in common?

- Civil Engineering
- Mechanical Engineering
- Industrial Engineering
- Chemical Engineering
- Electrical Engineering
- Software Engineering

∞ They all have common themes:

- Product Design
- Process Creation and Refinement
- Project Activity

What does “Well Engineered” Mean?

☞ Quality Factors:

- Usability
- Reliability
- Safety
- Well constructed
- Use of technology
- Aesthetically pleasing

☞ Also consider:

- Costs (within budget)
- Schedule (on time)
- Maintainability



Process & Project Management



- ☞ “A process is a series of steps involving activities, constraints and resources that produce an intended output of some kind.”
- ☞ Processes need to be appropriate both for the type of development organization and the type of application being developed.

Successful Projects

∞ What makes a project successful?

- Avoiding Mistakes
- Strong Teams
- Managing Risks
- Proper Planning
- Understanding Good Methodology
- Good Estimation (Looking ahead)
- Good Perspective (Looking Back – Measurement & Metrics)
- Proper Testing
- Results and a Happy Customer



Project vs. Operational

☞ Projects

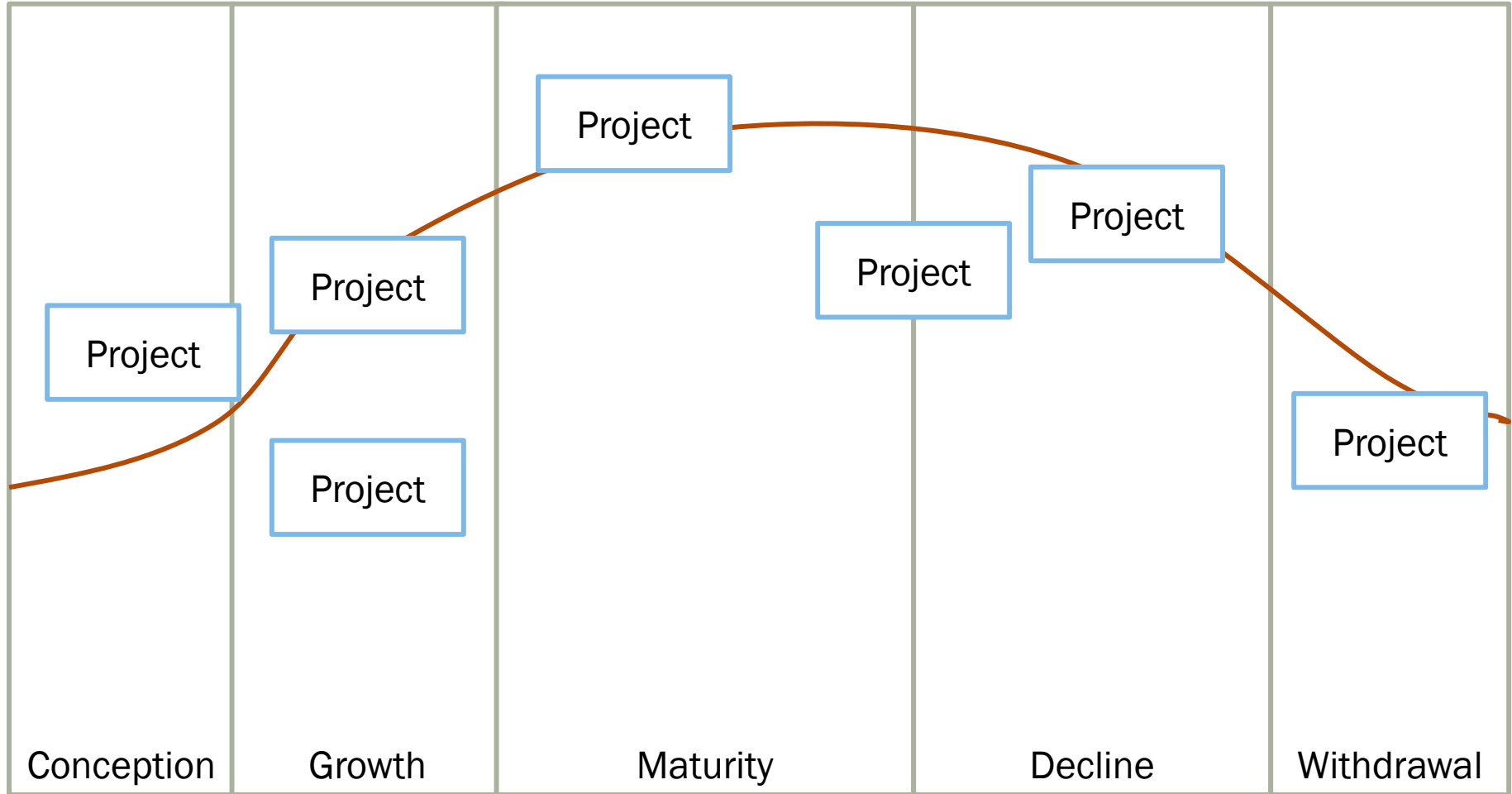
- Have a Beginning and End
- Have Unique Goals/Objectives
- Are not 'Business as Usual'

☞ Operational Work

- Most ongoing work
- Often completed projects are handed off to 'operations'
- 'Business as Usual'

☞ Each has very different management techniques, although some core skills and competencies are the same

Product Life Cycle

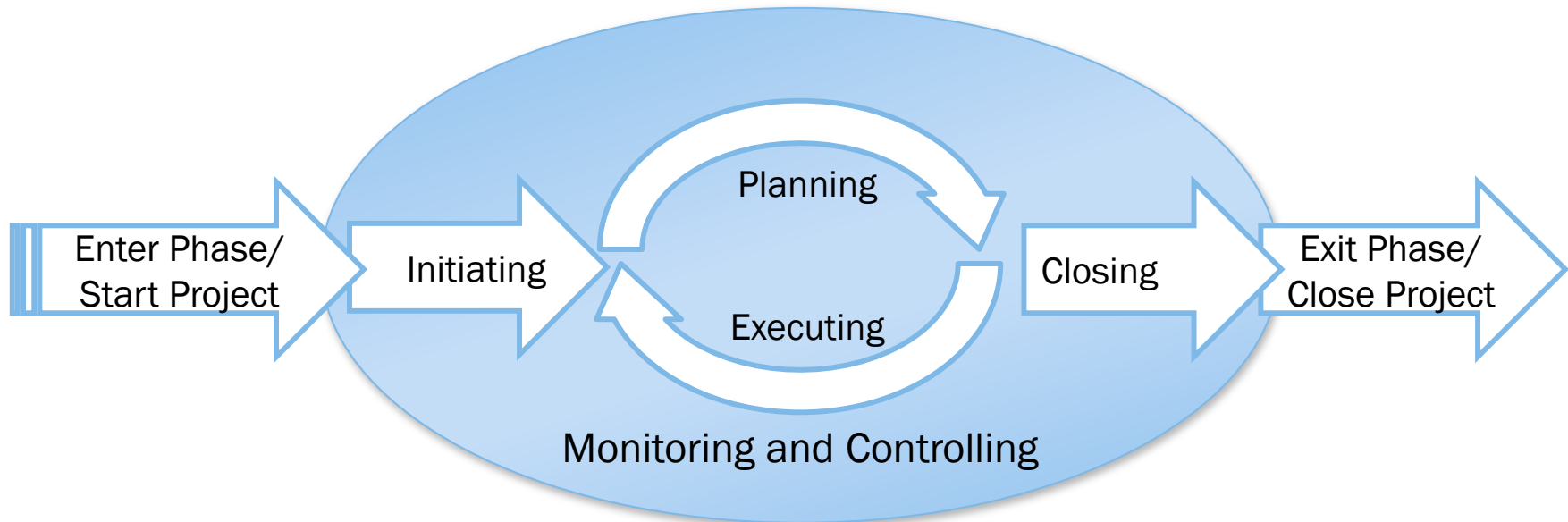


Project Life Cycle (Cont)

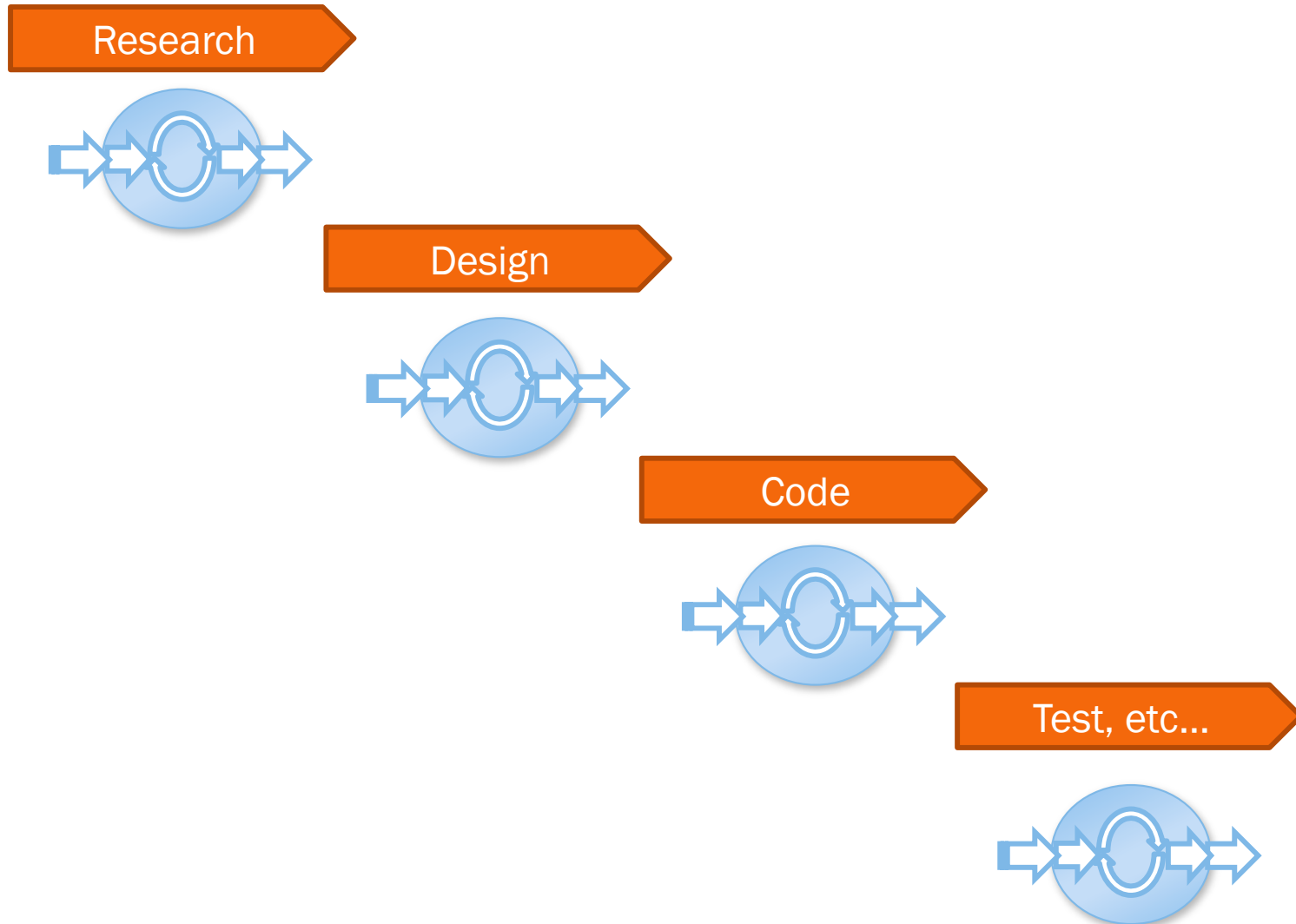
Start

Project

End



Project Life Cycle (Cont)



Project Terms

- ∞ Project Sponsor
- ∞ Stakeholders
- ∞ Scope
- ∞ Project Charter
- ∞ Project Management Office (PMO)
- ∞ Postmortem

Organizational Structure

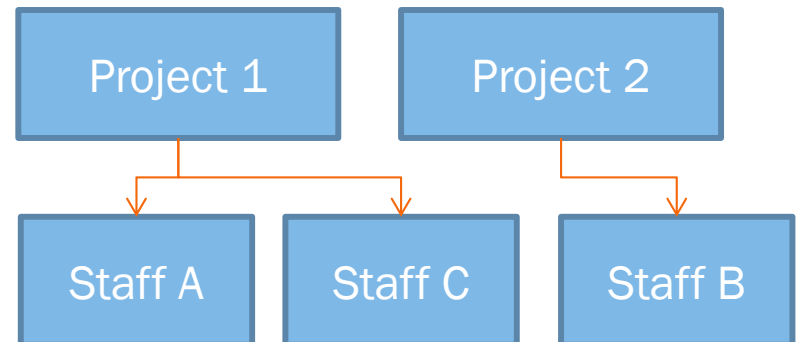
Functional

- Most Common “Classic”
- Grouped by specialization
- Team members have both departmental and project work



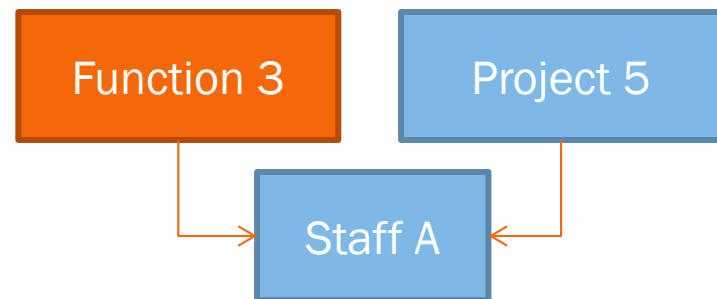
Projectized

- Project is king
- Staff are moved from project to project

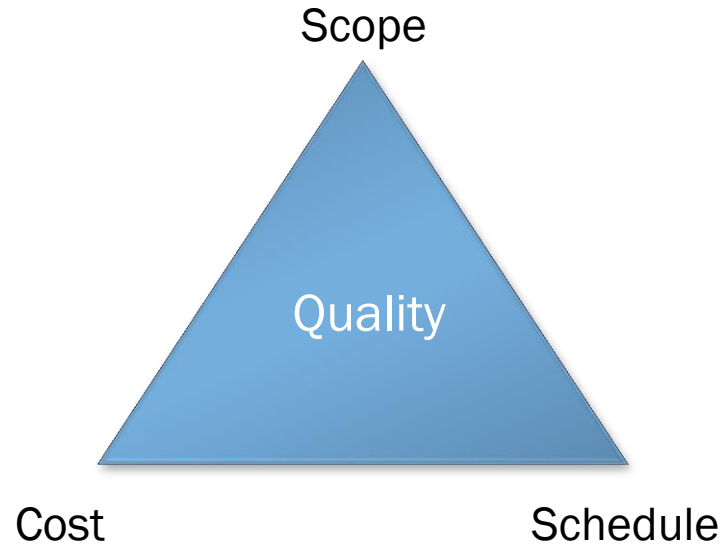


Matrix

- The two types mixed
- Two bosses, Project Boss and Functional Boss

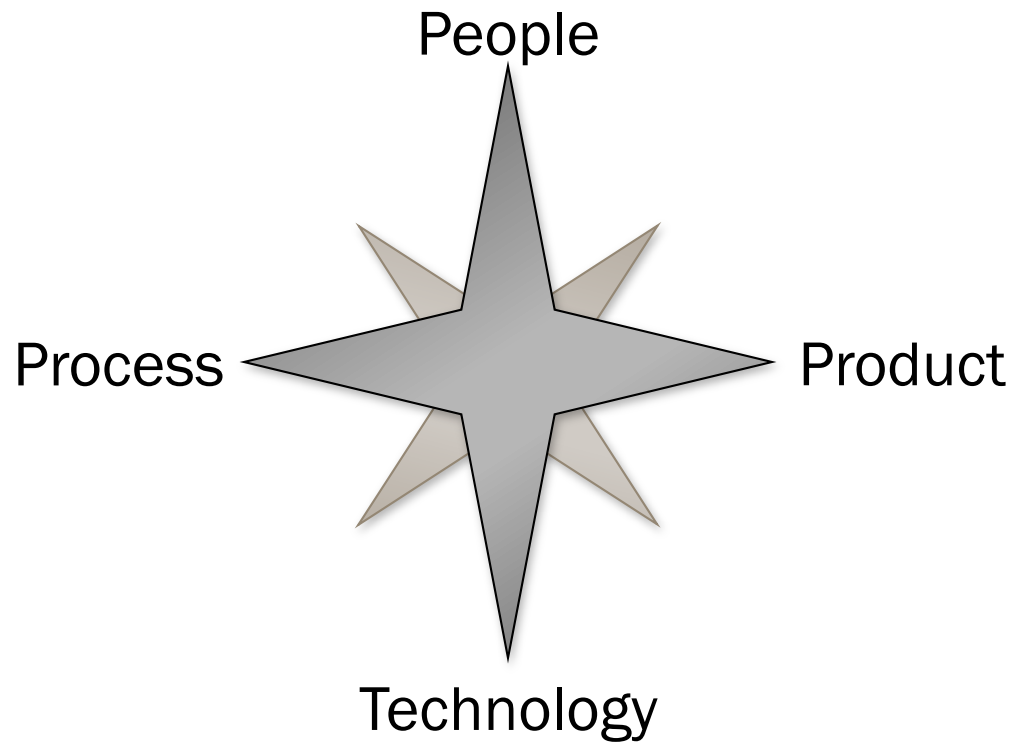


The Project Triangle



- ∞ AKA: Good, Fast, Cheap – Pick 2
- ∞ AKA: Quality, Resources, Schedule

Project Dimensions



What is Project Management?

- ∞ A Discipline
- ∞ Planning, Organizing, Motivating, and Controlling resources to achieve defined goals.
- ∞ Requires the Development of Distinct Technical and Management Skills
- ∞ Projects
 - Have a Beginning and End
 - Have Unique Goals/Objectives
 - Are Not Business as Usual

Managing Engineering Processes

∞ Traditional Engineering

- Developing Schedules
- Establishing Budgets
- Securing & Allocating Resources
- Managing Risks
- Tracking Progress
- Coordinating Teams (often across organizational boundaries)

∞ Software Engineering

- Formulate the problem
- Design, Modeling, Prototyping
- Evaluate different solutions / trade-offs
- Detailed Technical Specifications
- Construction or Manufacturing
- Testing / Evaluation
- Delivery & Maintenance

How Do Projects Succeed?

- ☞ Executive support
- ☞ Experienced project manager
- ☞ Clear business objectives and priorities
- ☞ Minimized scope
- ☞ Standardized infrastructure
- ☞ Firm basic requirements
- ☞ Predictable costs
- ☞ Communication between parties
- ☞ Formal methodology
- ☞ Reliable estimates

Questions / Discussion

