
Project Teams

CSE 403, Spring 2004
Software Engineering

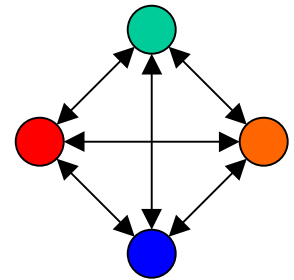
<http://www.cs.washington.edu/education/courses/403/04sp/>

Readings and References

- Readings
 - » *Rapid Development*, Steve McConnell
 - Chapter 4, Software Development Fundamentals
 - Chapter 12, Teamwork
 - Chapter 13, Team Structure
- References
 - » *The Mythical Man-Month*, Brooks
 - Chapter 3, The Surgical Team

Issues

- Most projects need teams of people for success
 - » many skills required
 - » time is limited
- Communication requirements increase with increasing numbers of people
 - » everybody to everybody $\rightarrow \frac{n(n-1)}{2}$
 - » even just somebody to everybody $\rightarrow n-1$
- Every effort at communication is a chance for miscommunication



Take risks, but manage them

- The need for many people exposes us to risk
- What are the tools that we use to manage it?
 - » Good, well-known product definition
 - » Planning and organization
 - » Monitoring and direction as needed
 - we have a plan
 - we'll work to the plan and monitor our performance
 - we'll change the plan if we need to
 - » Transparency - no secrets

Management Fundamentals: Planning

- “We have a plan”
- Estimation and scheduling
- How many people with what skills, when?
- Organization of the team
- Lifecycle events
- Managing the risks
- Strategic decisions
 - » for example, build or buy decisions

Management Fundamentals: Tracking

- “We’ll work to the plan and monitor our performance”
- Some tools
 - » Task lists, status meetings, status reports, milestone reviews, budget reviews
- Management by walking around
- “We’ll change the plan if we need to”
 - » Can only be effective if all the facts are known

Management Fundamentals: Measurement

- Help validate comparisons between this project and previous/future work
- Basic measurements of the code
 - » Non Commenting Source Statements (NCSS)
 - » Number of modules, packages
- Project build: success and frequency
- Change and defect data
- Be careful: we optimize to the metric in use

Teamwork and Organization

- Teams of people can achieve big goals
 - » Panama Canal, man in space, Mt. Everest
 - » but it ain't easy
- The members of a good team
 - » know what the goals of the team are
 - » know what their own task responsibilities are
 - » have the tools they need to accomplish their tasks
 - » have reason to believe that the team will succeed

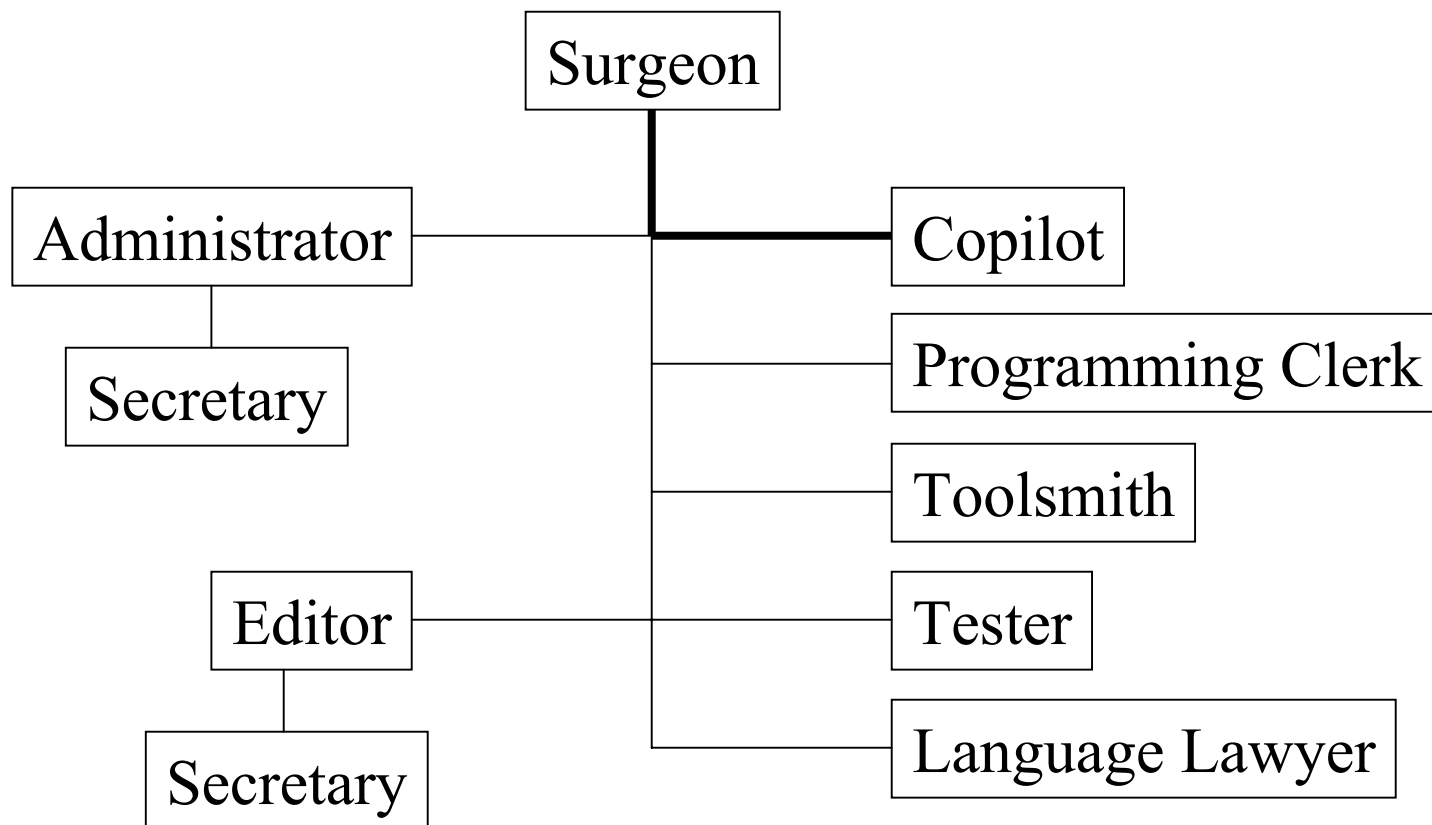
Results-driven Structure

- Roles are clear within the team
 - » Each person is accountable for their work
- Effective communication system
 - » Change management, schedule, tracking, decisions
- Monitor individual performance
 - » Who is doing what, are we getting the work done?
- Fact based decisions
 - » Focus on the facts, not the personalities

Team Models

- Business Team
 - » peer group headed by technical lead
- Chief Programmer Team
 - » Brooks' surgical team - surgeon plus support
- Skunkworks team
 - » Black box, creative but maybe ad-hoc
- Feature team, Search-and-Rescue team, SWAT team, Professional Athletic team, Theater team, etc, etc

Brooks: Surgical Team



Managers and Technical Leads

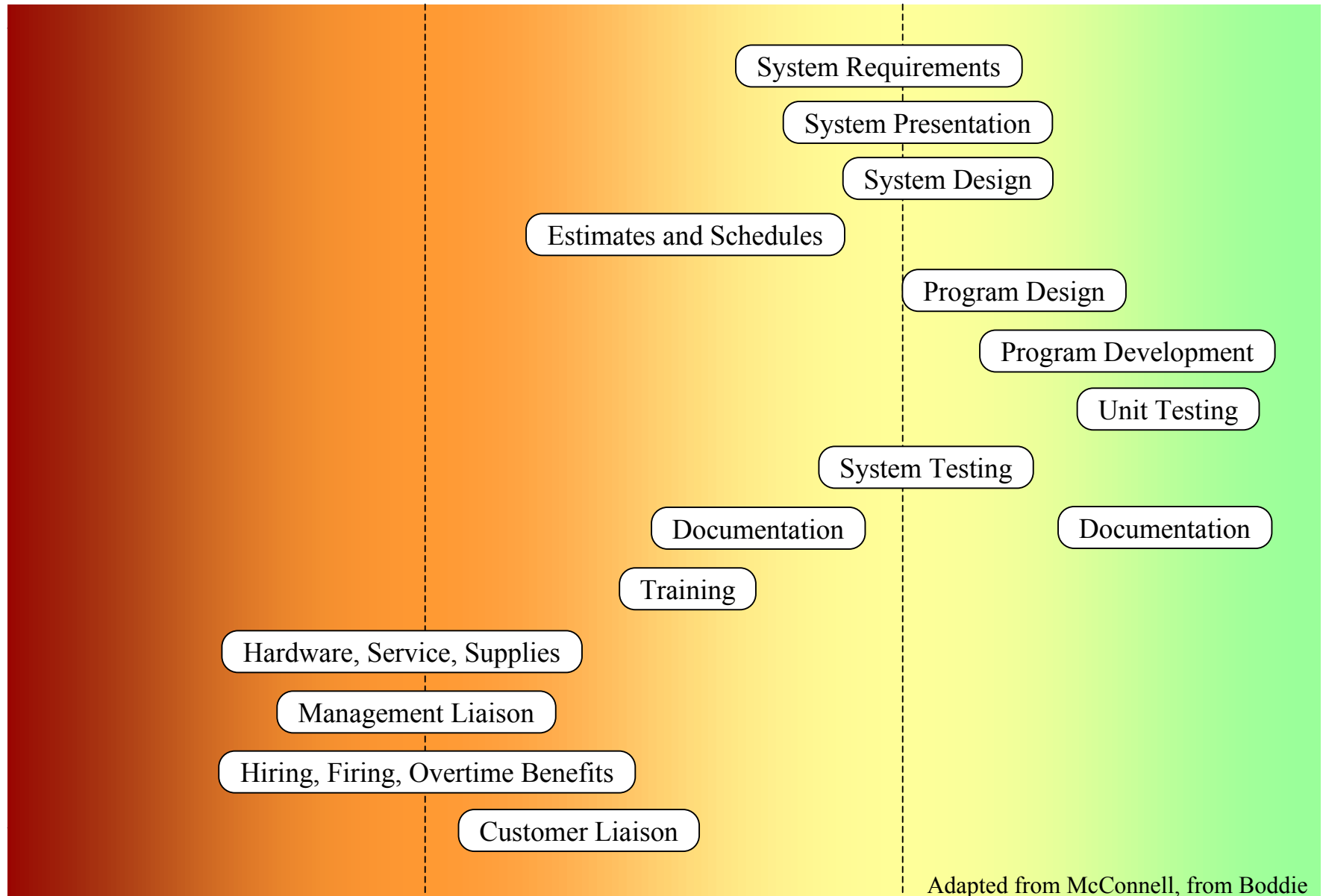
- No matter what you call the structure, teams usually have:
 - » several “regular” developers
 - » a technical lead developer
 - » a project management function, assigned to:
 - the technical lead
 - a separate project manager
 - the group supervisor
 - ...

Supervisor

Project Manager

Technical Lead

Developer



Responsibility

- Take individual responsibility for your tasks
- In order to succeed, the team must
 - » Decide what the tasks are
 - task content, interfaces, order, ...
 - » Clearly define who is going to do each task
 - » “Sign up” to do them
 - » Let ‘er rip
- Communicate as you go