Project management:
Team Organization & Teamwork


If you want to go fast, go alone. If you want to go far, you need a team.
John Wooden / @InspiringThinkn
motivational-inspirational-world.blogspot.com

Why work in a team?

(From "Building Blocks for Teams", Penn State University)

Teams are found in many workplace environments because they allow the organization to:

- Accomplish projects an individual cannot do
- Brainstorm More Solution Options
- Detect Flaws in Solutions
- Build a Workplace Community

Exposure to team work is considered valuable in the educational process:

- Exposure to different points of view
- Practice of Communication Skills
- Critical Thinking and Evaluation Skills
- Conflict Resolution Skills

The BCS, The Chartered Institute for IT (formerly British Computer Society) promotes team work as a professional development aspect of computing degrees

Problem: Communication and Team size

2 people

1 line of communication

3 people

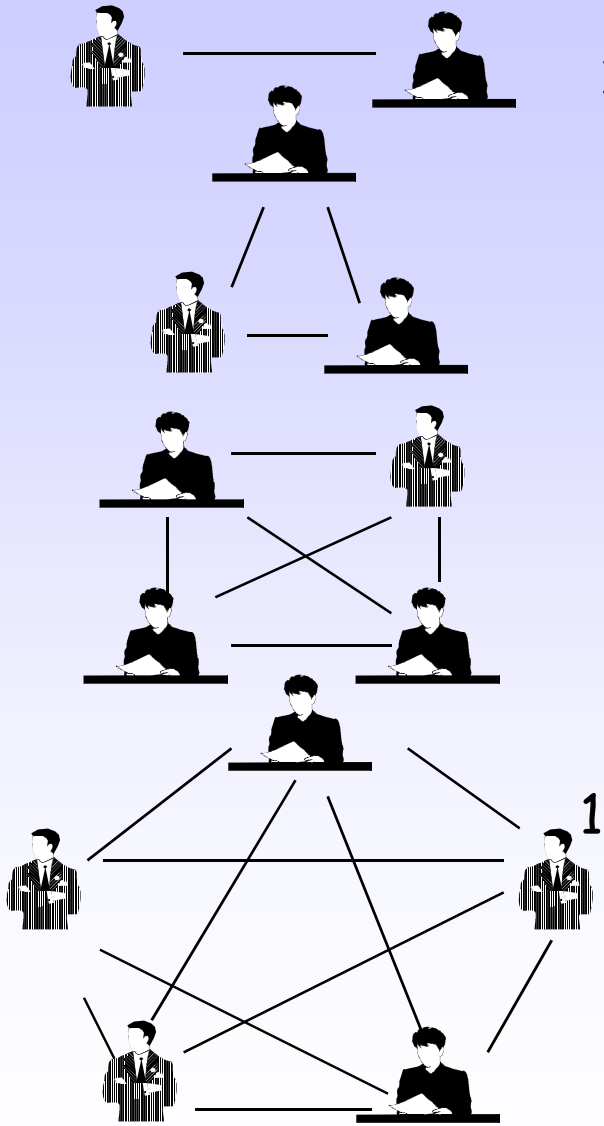
3 lines of communication

4 people

6 lines of communication

5 people

10 lines of communication



n people

n(n-1)/2 lines of communication

Meredith Belbin on team size

See http://www.belbin.com/rte.asp?id=73&pressid=31

"When effective decision-making is required, three selected teams of four are better than one group of twelve. ... small teams deliberating separately can quickly reach significant decisions."

Four "We're well-balanced in our team and good at achieving agreement."

Five "One of us tends to be the odd one out."

Six "It takes longer to reach agreement, but we get there in the end."

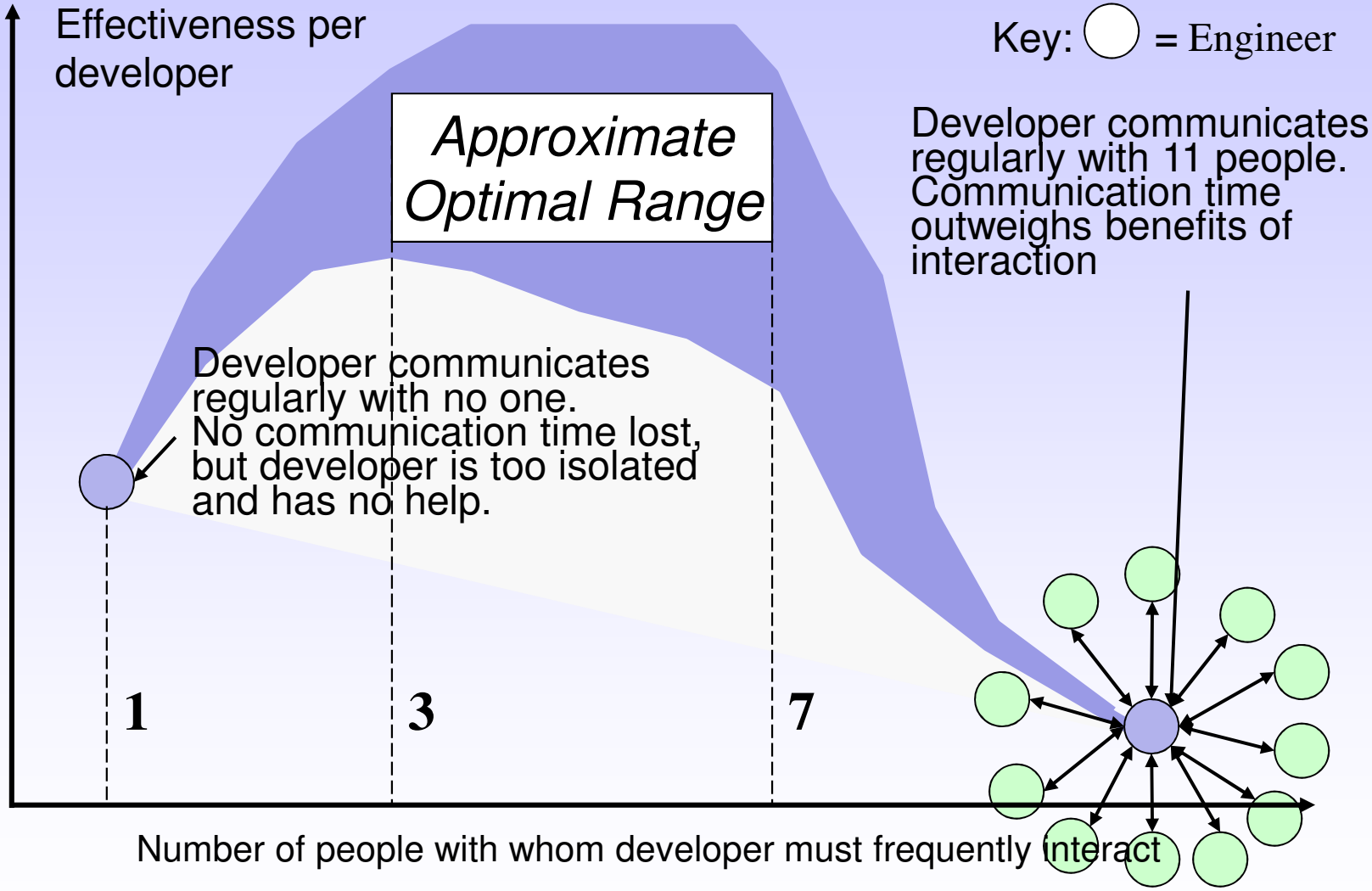
Seven "Rather too many random contributions float about."

Eight "People speak freely but no one listens."

Nine "We could do with someone taking control."

Ten "We now have a leader, but their ideas are the only ones with a chance of acceptance."

Optimal Size for Interaction (Approximate)



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A manager's dilemma: Adding more people to a late project

In theory, increase in people $\Rightarrow$ increase in work rate

- Problem: More people
  - » higher communication, training cost
  - » lower project team productivity
  - » lower progress rates
  - » delay to already late project
  - » additional round of loop
  - » more people
  - » ...

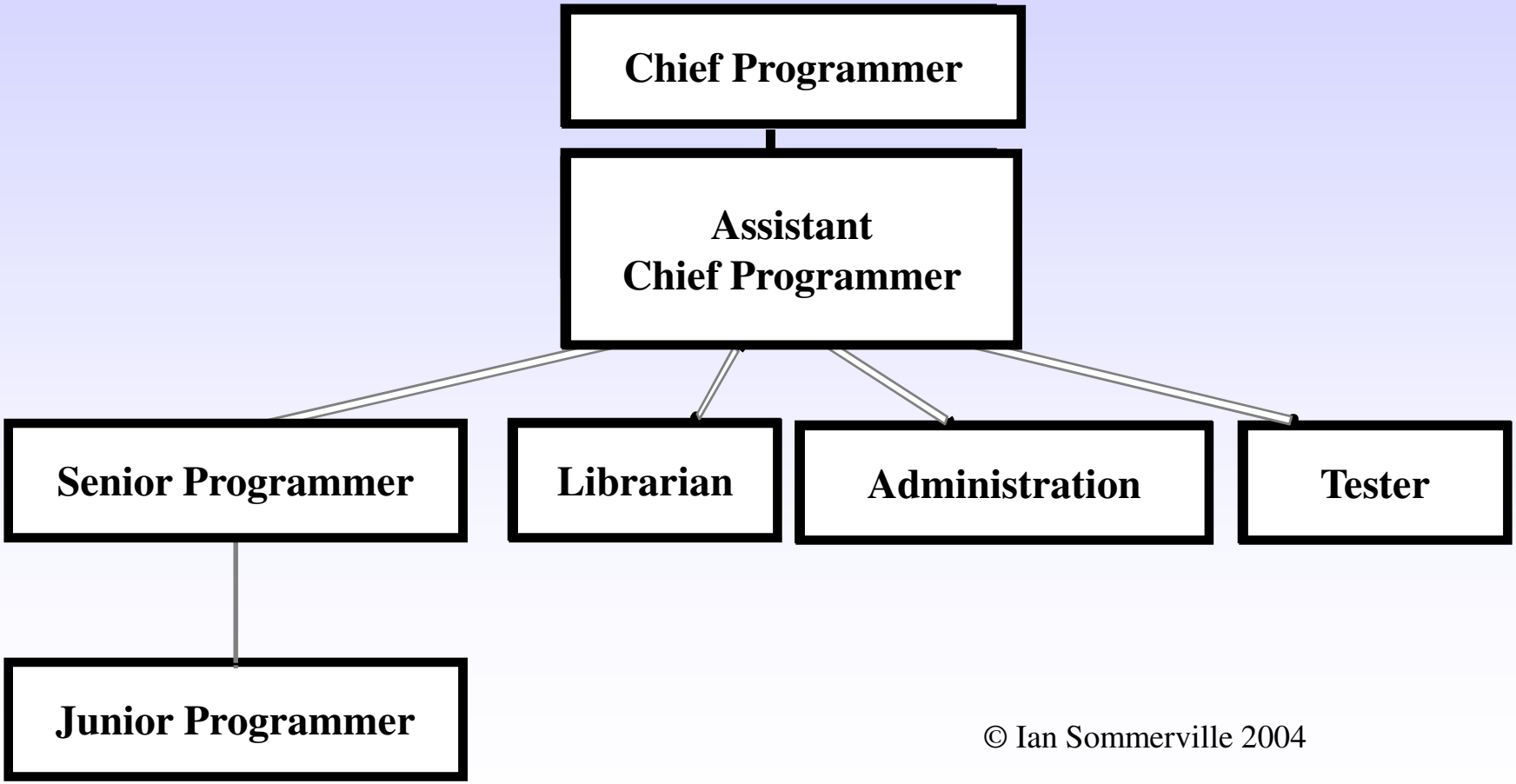
Brook's Law (F P Brooks, *The Mythical Man-Month)*

"Adding more people to a late project makes it later"

Very careful management is required!

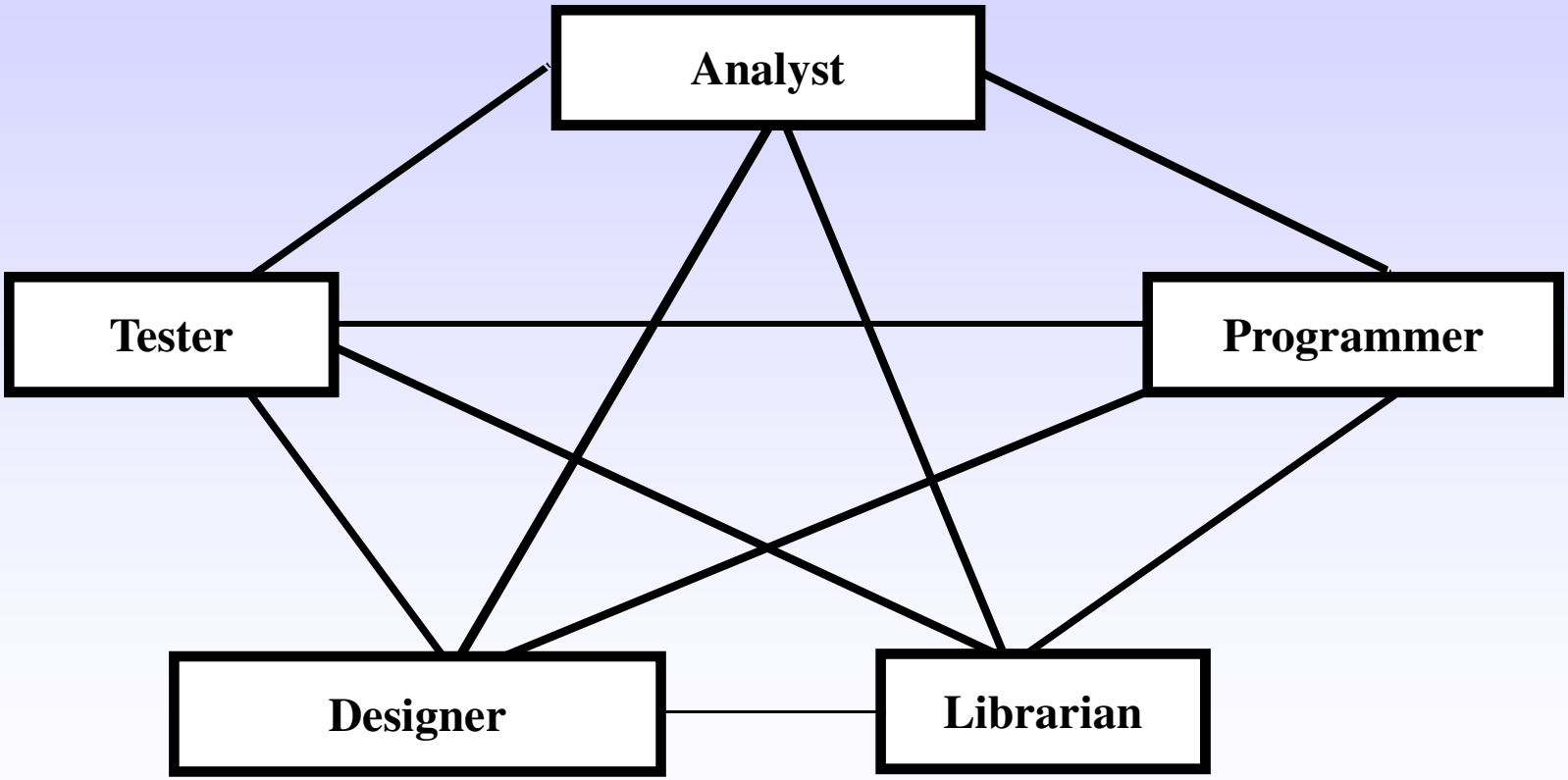
Team organization: Options

Example of *Hierarchical Organization*: Chief Programmer Team (Brooks, The Mythical Man-Month)

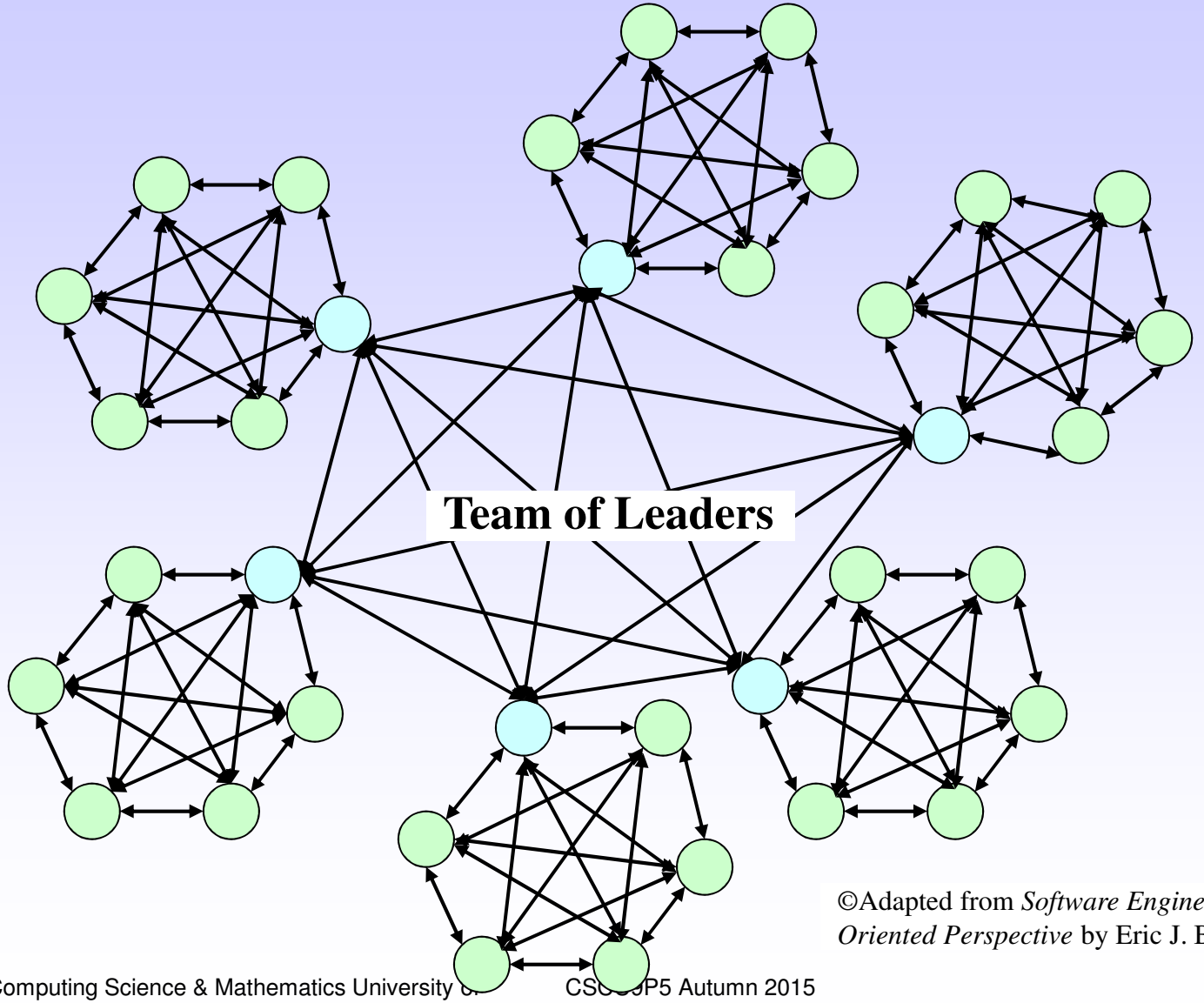


A small non-hierarchical team of equal peers: Egoless Programming Team

(Weinberg, The Psychology of Computer Programming, 1971)



Peer Organizations for Larger Projects



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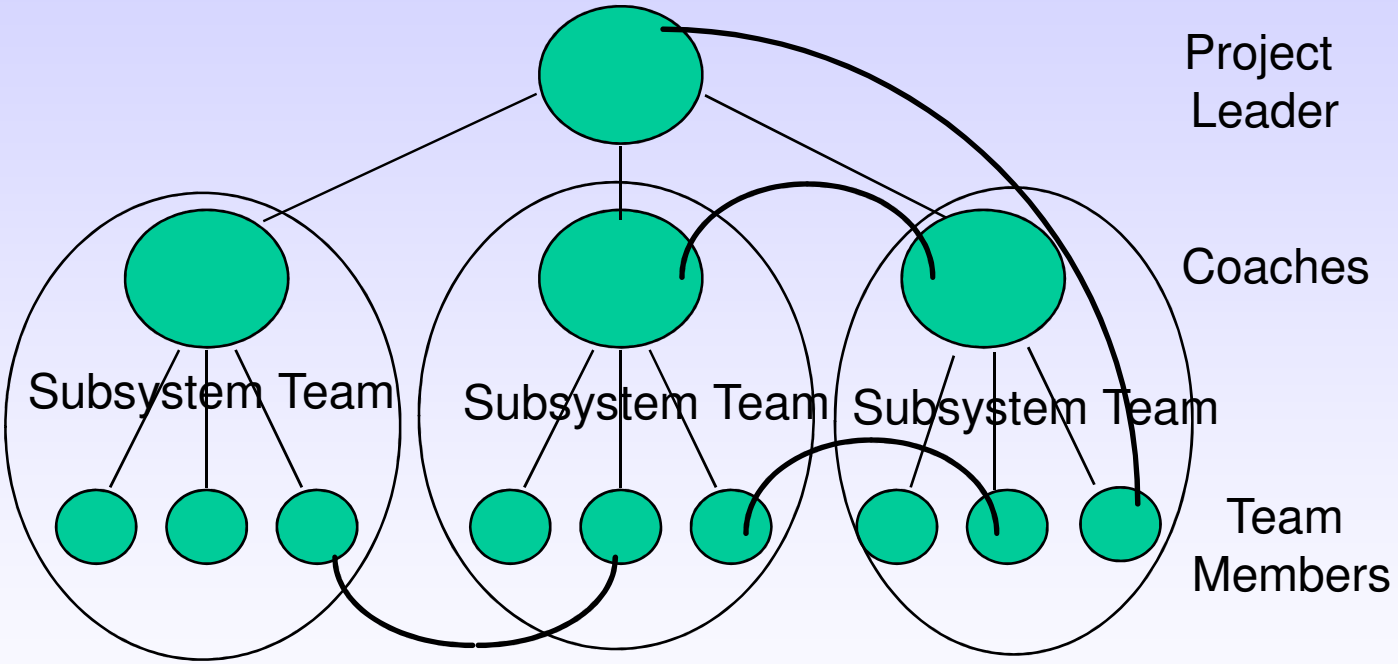
Another Organization: Project-Based Project Organization



Teamwork – some practical issues

For the group project…

Team dynamics

A commonly accepted model of how teams form and become productive is due to Tuckermann and Jensen (1965); this is a 4-stage model:

- **Forming**: the initial stage when the individual groups try to determine the purpose of the group and what role they will play
- **Storming**: a conflict-filled stage in which the individuals try to form a group by resolving differences in goals and perspectives. The individuals struggle for status and power within the team
- **Norming**: having come to a common understanding of the goals and functioning of the team, the conflict disappears and members focus on the work at hand
- **Performing**: the team has developed a clear identity with loyal team members who have a clear understanding of how the team operates and how they will interact as individuals

Individual contributions

Differing skills and contributions:

- Everyone has their own skills, interests, strengths, weaknesses and can be deployed accordingly
- Identify activities: analysing, diagramming, checking, explaining, documenting, organizing, managing, …
- Everyone does not have to do everything!
- The best/most confident/most comfortable designers could perhaps/should advise/guide/lead others, but…
- … everyone should be given a chance to contribute
- It's OK for different members to contribute different amounts – be open, honest and organize accordingly
- … and complete the contribution assessment forms fairly at the end

Belbin's roles

From research in management, Meredith Belbin identified nine "team roles"

- Each role is a "pattern of behaviour" or personality type, "a tendency to behave, contribute and interrelate with others in a particular way"
- Each role has a combination of strengths and "allowable weaknesses"

The roles are:

- Plant, Coordinator, Monitor/Evaluator, Implementer, Completer/Finisher, Resource investigator, Shaper, Teamworker, Specialist
- For details see:
  http://www.belbin.com/content/page/5538/BELBIN%28uk%29-2011-TeamRoleSummaryDescriptions.pdf

Balanced Team Composition

Understand the preferred roles of people on the team

Play to people's strengths

Get a good balance of people on a team, not just one type

Leadership

The team leader:

- You *do not have to have* a team leader/manager
  … though it is highly recommended
  … and may well arise naturally
- **The team leader is leading *on behalf of* the team**
  … but they are **also** a **member** of the team!
  … **and should not use too heavy a hand in controlling the team!**
- The best designer is not necessarily the first/best choice for team leader
- The team leader may set the agenda, facilitate meetings, monitor progress
  - » But actions should be agree by the team
  - » and direction should be a compromise

General Project Control and Organization

Project control:

- Explicit (written?) agreements on who is doing what for when may be a good idea
- Do not do other peoples' work!
- *Stay in touch*, even if there are technical or personal problems
- Be honest about progress or lack of it
- Agree deadlines, monitor progress, review honestly, adjust plans

General:

- Design and documentation "walk throughs"/reviews are a good idea
- Do not feel *over protective* "ownership" of your work…
- … and do not trample on the work of others!

More information and advice

Belbin's analysis of team roles/character types and team formation:

http://www.belbin.com/rte.asp?id=8

http://www.belbin.com/content/page/5538/BELBIN%28uk%29-2011-TeamRoleSummaryDescriptions.pdf

http://changingminds.org/explanations/preferences/belbin.htm

http://changingminds.org/explanations/preferences/margerison_mccann.htm

"Building Blocks for Teams" at Penn State University:

Student guide:
http://archive.tlt.psu.edu/suggestions/teams/student/index.html

Staff guide: **http://archive.tlt.psu.edu/suggestions/teams/**

End of lecture