Project teams

Why teams?

Team size
- Bigger is better
- Smaller is better

Team structure
- Many different models

Software development teams
- Brooks
  - Surgeon team

Diagram:
- Chief Programmer
- Copilot
- Administrator
- Editor
- Secretary
- Toolsmith
- Language Lawyer
- Tester

Chief programmer team
- Key points
  - Technical leadership
  - Technical lead has direct development responsibilities

Diagram:
- PM
- Dev Lead
- Dev
- Test
- Test/Build
- Doc/UI
Successful software teams

- Studies show a 10 to 1 difference in productivity of programmers
- Equal differences observed in productivity of teams
- Substantial differences observed in performances of teams even when the strength of the programmers is equivalent

What makes a successful team?

- Shared, elevating vision or goal
- Team identity
- Results driven structure
- Competent team members
- Commitment to the team
- Mutual trust
- Interdependence among team members
- Effective communication
- Sense of autonomy
- Sense of empowerment
- Small team size
- High level of enjoyment

Team building

- Team members derive satisfaction from the team’s accomplishments
- Important to both
  - Reward the team’s success
  - Maintain individual accountability

Motivation

- Motivation is undoubtedly the single greatest influence on how well people perform. Most productivity studies have found that motivation has a stronger influence on productivity than any other factor. (Boehm 1981)

What motivates developers?

<table>
<thead>
<tr>
<th></th>
<th>Programmer Analysts</th>
<th>Managers of Programmers</th>
<th>General Population</th>
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<tbody>
<tr>
<td>Achievement</td>
<td>Responsibility</td>
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<tr>
<td>Possibility for growth</td>
<td>Achievement</td>
<td>Recognition</td>
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<td>Work itself</td>
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<td>Interpersonal relations, subordinates</td>
<td>Salary</td>
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Rest of the table

(Boehm 1981)

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Top five motivation factors

- Achievement
- Ownership
- Goal setting
- Possibility for Growth
- Work itself
  - Skill variety
  - Task identity
  - Task significance
  - Autonomy
  - Job feedback

Top five motivation factors

- Opportunity to focus on the work itself
- Reduce administration
- Remove obstacles
- Personal life
- Technical-supervision opportunity
  - Assign each developer to be technical lead for some particular product area

How not to manage:
Morale killers

- Management manipulation
- Excessive scheduling pressure
- Lack of appreciation for team member's efforts
- Inappropriate involvement of technically inept management
- Not involving team members in decisions that affect them
- Productivity barriers
- Low quality
- Heavy handed motivation campaigns
- Frequent changes in direction