

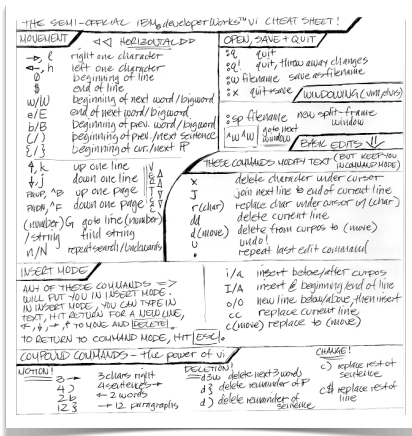
Managing Technical People

Rahul Premraj + Andreas Zeller

Credits: Randall B. Dunham

1

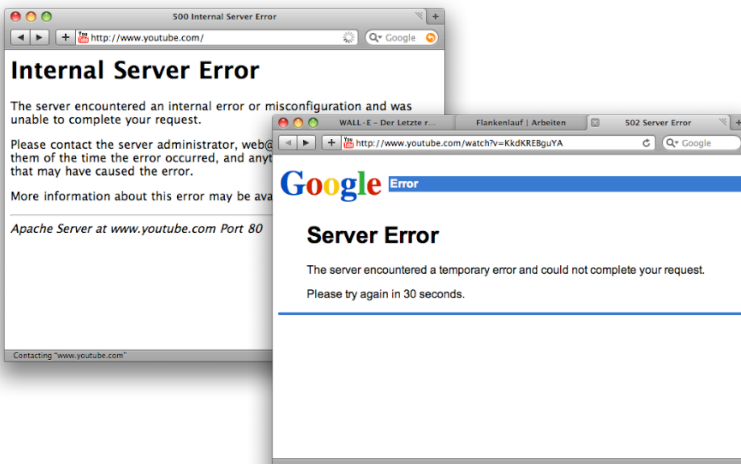
Exam Material



- One A4 page (“cheat sheet”), handwritten
- A pen
- Nothing else (no books, PDAs, etc.)
- Reference material (e.g. Z operators) provided with exam

2

Bugs of the Week



3

Eingereicht von Florian Gross

The Twitpocalypse

2,147,483,647 1

Each message on Twitter is assigned a unique identification number. On Friday evening, the number of tweets exceeded 2,147,483,647. While that doesn't seem like a round number, it's the largest number that can be stored as the data type known as a "signed integer." Once that number was exceeded, some versions of some Twitter client apps could break in a fashion similar to what was

4

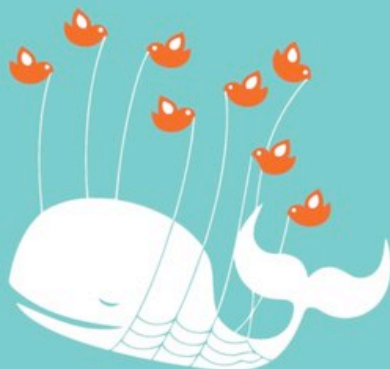
The Twitpocalypse



http://www.macworld.com/article/141146/2009/06/twitpocalypse_twitter.html

5

Fail Whale



6

Technical People

- What are these computer scientists like?

10



- short-sighted
- grinning
- talks through headset
- lazy
- addicted to soft drinks
- fuzzy

What is a computer scientist? In the movie “Jurassic Park”, Wayne Knight plays the hacker **Dennis Nedry**. He is fat. He is anti-social. He is the villain. In the end, he gets

11



“So what do you do?”
“Computer science.”

This, as Herr Lehmann decided, must be true. He could not imagine anything more boring, weirder, dumber, or less glamorous than being a computer scientist.

12



13

A computer scientist is perceived as an autistic nerd who spends his time in a symbiotic relationship with his dream machine.



14

But how do these folks manage to build such systems?



15

Indeed, what computer scientists do most of the day is talking - and working in teams.



16

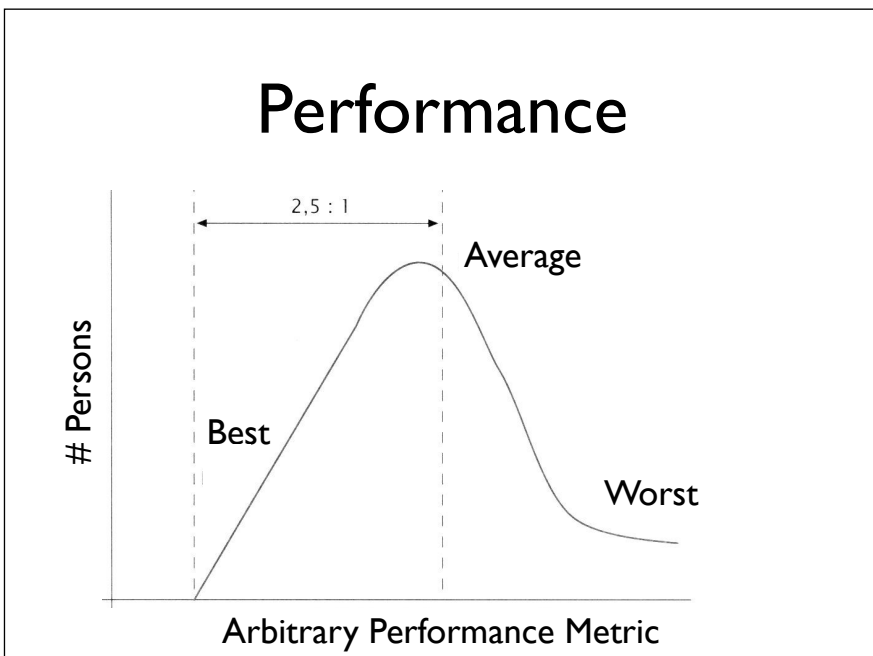
Here's a few real computer scientists.

Technical People

- Smart
- Seldom motivated by money or status
- Motivated by *unique achievements* – opportunity, responsibility, visibility
- Need appreciation + recognition

If technical people were motivated by money, we'd have to pay people who are ten times as productive ten times as much – but we don't. See the recipe?

17



18

Team

- How to group a number to engineers into teams?
- Team size should be chosen to minimize overhead and maximize productivity.
- Small, but not too small; and large, but not too large.
- Optimal size – 3 to 8 members per team.

22

Organizing Teams

- Use fewer and better people.
Large groups need more communication and reduce productivity
- Do not make people indispensable.
Avoid a programmer becoming the only expert in a certain system
- Keep up the expertise.
Avoid rising people in an organisation to a level their expertise becomes obsolete within short time

23

Organizing Teams

- Keep up the balance.
It is wise to select people such that a well-balanced and harmonious team results, i.e. not too many stars
- Remove outsiders.
Someone who does not fit the team should be removed

24

Which structure is better?

- Experimental assessment of different structures is difficult.
- Different cost models can be assessed on the same project - different org. structures cannot be assessed for the same project.

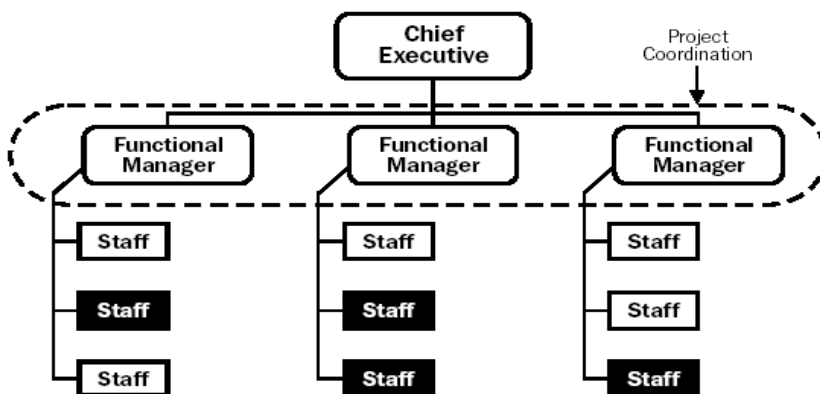
37

Which structure is better?

- No team organisation appropriate for all tasks.
- Decentralized control is best when communication amongst engineers is important for achieving a good solution.
- Centralized control is best when speed of development is most important and the project is well-understood.
- Limit communication to appropriate levels - no more or no less.
- Many other goals such as development of junior engineers into senior engineers, lower life cycle costs, reduced personnel turnover and repeatability of goals.

38

Functional Organisation

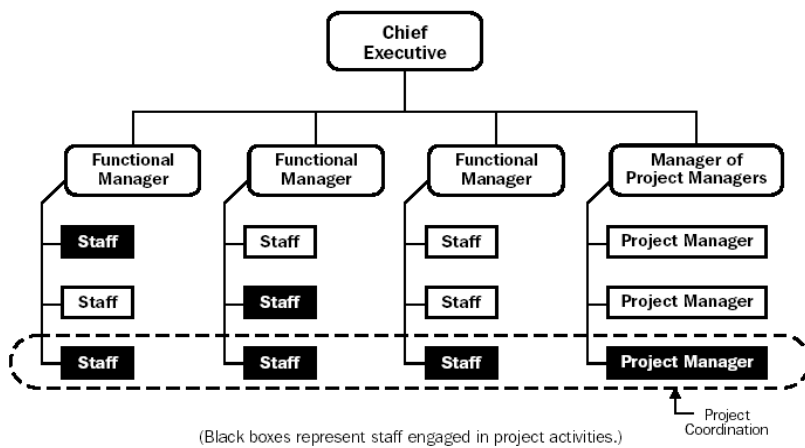


(Black boxes represent staff engaged in project activities.)

39

A Guide to the Project Management Body of Knowledge (PMBOK®), 2004, pp. 28--32

Strong Matrix Organisation



43

If technical people were motivated by money, we'd have to pay people who are ten times as productive ten times as much – but we don't. See the recipe?

44

Motivating Teams

Technical People

- Smart
- Seldom motivated by money or status
- Motivated by unique achievements – opportunity, responsibility, visibility
- Need appreciation + recognition

Motivating Teams

- Set up clear *success criteria* rather than vague mission statements
- Every team is an *elite team* and has something unique to that team
- Only the *best* is good enough
Give the team *challenges* – but avoid *overengineering*
- Foster *diversity*
Men and women; clients, programmers, and artists...
- Never change a winning team

45

Motivating Teams

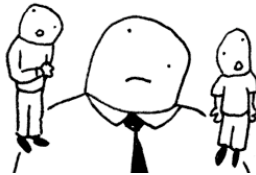
- Rely on *trust* rather than *control*
Produce strategies, but do not involve into tactics
- Avoid red tape (bureaucracy)
Do what you believe in, avoid the rest
- Stick together
Try to be co-located in one place (or meet at least once)
- One team per member
- Real deadlines
rather than psychological tricks

46

Decision Making

take a
two hour
lunch break

no way dude
just go home



The process of specifying a problem/opportunity, identifying alternatives, evaluating them, and selecting from among the alternatives.

47

Group Decision Making

Assets

- Greater knowledge & facts
- Broader perspective on issues
- More alternatives considered
- Greater satisfaction with & support of decisions
- Better problem comprehension
- Serves communication & political functions

Liabilities

- Less speed
- Compromise may damage decision quality
- Negative social pressure
- Premature decisions
- Individual domination
- Interference of personal goals

48

Why do Conflicts Occur?

- Worker needs/values
- Personality
- Job assignments
- Scarce resources
- Job design
- Organisational structure
- Culture differences

61

Compromising

Conflict Resolution



- Point out to the other person that if you both will make a few concessions, the conflict can be resolved quickly.
- Point out that if the disagreement is to be resolved, some sacrifices must be made by both of you.

62

Collaborating

Conflict Resolution

- Try to sort out where each of you stands and identify options available to meet both parties' needs.
- Suggest that you take your ideas and the other person's ideas and put them together to make an even more workable idea.
- Express your concern for the differences between you and let the other person know you want a resolution that satisfies both of you.

63

Accommodating

Conflict Resolution

- Offer to handle the problem any way the other person wants.
- Go along with whatever the other person requests, rather than get into the difficulties of direct confrontation.

64

Avoiding

Conflict Resolution

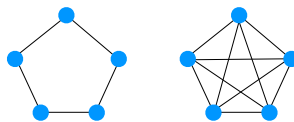
- Downplay the seriousness of the problem and suggest the two of you not waste time with the matter.
- Tell the other person that the problem does not concern you.
- Explain that there is no point in trying to resolve a conflict between two people with such basically different personalities.

65

Team



Decentralised-Control Team Structure



Summary

Decision Making



The process of specifying a problem/opportunity, identifying alternatives, evaluating them, and selecting from among the alternatives.

Conflict Management



Exists when two or more people have incompatible goals and one or both believe that the behavior of the other prevents their own goal attainment.

66
