

# Teams and Teamwork

# Team formation

- By students
  - Unfair to students who do not have a local network (ex.: Erasmus)
- By teacher
  - Same approach for all students
  - Similar to what happens in work environment

# Catme.org

- Developed by Purdue University
- Used by 2200 instructors, 11M students
- Team formation
- Team evaluation

# Team formation

- Algorithm tries to form teams balanced on a number of factors
  - Age, sex, previous grades
  - Commitment
  - Personal styles
- 1 Questionnaire to collect factors
- 2 algorithm forms teams

Layton, R. A., Loughry, M. L., Ohland, M. W., & Ricco, G. D. (2010). Design and validation of a web-based system for assigning members to teams using instructor-specified criteria. *Advances in Engineering Education*, 2, 1-28.

# Team evaluation

- At end of project
- Peer evaluation
  - Each team member evaluates the other members on a number of factors
- Will be used for individual grade on project
  - Project grade (technical factors only)
  - Individual grade = f (peer evaluation, project grade)

# Typical problems

- (happen rarely, but happen..)
- Team member leaves
  - Grade increased for teams <4 people
- Team member does not work / works less
  - Analysed case by case. Email me soon
- Arguments between team members
  - Try to avoid (see later)
  - Email me

Single person

# Personality

- Persons are different..
- Personality: stable set of characteristics that define a person and her interaction with the environment
- Defined by genetics
- Defined by environment
- Defined by both



# Personality models

- Big five
- Myers Briggs
- ..many more

# Big five

- Openness to Experience: Emphasizes creativity, openness to new ideas, curiosity, and imagination.
- Conscientiousness: Concerns reliability, organization, punctuality, and responsibility.
- Extraversion: Measures comfort level in social situations, positive energy, and the need for social interaction.
- Agreeableness: Reflects kindness, empathy, cooperation, and trust towards others.
- Neuroticism: Indicates emotional instability, anxiety, mood swings, and irritability.

The Big Five model is empirically driven, focusing on quantifying personality traits across a spectrum rather than defining personality types.

# Myers Briggs

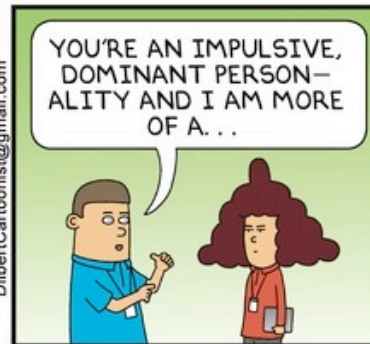
- Introversion (I) vs. Extraversion (E): Source of energy (solitude vs. social interaction).
- Sensing (S) vs. Intuition (N): Information gathering (concrete vs. abstract).
- Thinking (T) vs. Feeling (F): Decision-making process (logic and consistency vs. social considerations and harmony).
- Judging (J) vs. Perceiving (P): Interaction with the outside world (planned and orderly vs. spontaneous and flexible).

The MBTI is based on Carl Jung's theories and classifies personalities into 16 distinct types. It is popular in self-help and corporate settings but is less utilized in academic research due to its categorical approach.

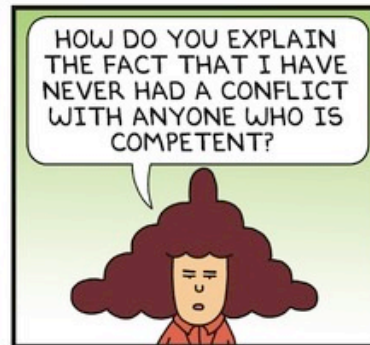
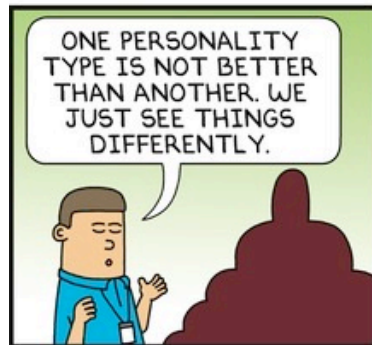
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www.dilbert.com



# Personality and work

- What is best mix of personalities in a team?
- What is best personality for a job function?
  - Ex sales person, extraversion

- Catme uses
  - Leadership role (leading – following)
  - Detail – big picture
  - (commitment level)

# Teams

# Factors affecting teams

- Size
- Norms
- Specialization
- Status
- Leadership
- Mood



# Size and group dynamics

- 2 people: in case of conflict no third person to arbitrate discussion
  - Either conflicts are hidden or avoided
  - Or conflicts get to explode(avoid 2 people teams)
- 3 people: in case of conflict possible coalition 2 to 1
  - Stress, frustration of the isolated person(avoid 3 people teams)

# Size

- 4 people. ( ABCD)
  - 7 possible configurations (group dynamics)  
A – BCD   B – ACD   C-ABD   D – ABC  
AB-CD   AC-BD   AD – BC

# Size

- 8-10 people
  - Communication problems (not all speak out)
  - Subgroups can form
  - Individualities prevail
  - Need of more formalization
  - Less participation

# Size

- Recommended size: 4 to 7

# Size and our project

- 4 people
- Risk: 1, 2 team members leave

# Norms

- Work hours and punctuality
- Etiquette and social norms
  - How to greet
  - How to clean
  - How to interact (who starts interaction and how)
- Control (on rules, on work)

# Norms

- Productivity
  - What is too much / too little work
- Protest
  - How and when to express discomfort / conflict

# Norms and our project

- Define clearly your norms, upfront!
- Speak up and do not allow hidden stress to explode too late
- Be flexible, too

Postel's Law: Be conservative in  
what you do, be liberal in what you  
accept from others.



# Status

- Relative position of person vs others in team (vs others in society)
- More status → more respect from others, more influence
- Should depend on actual skills, contribution to group

# Status

- Formal status (ex leader)  
vs  
actual status recognized by others
- If formal status is not consistent with actual status then conflicts arise

- Recognize actual status, make formal status follow actual status

# Specialization

- Team members do all tasks vs team member specialized in a task
  - Ex testing, configuration management, requirements
- No specialization: members are interchangeable, no delays if one member cannot work
- Specialization: more productivity

- Specialization can be a plus sometimes.
- For this project I hope you do not apply it, otherwise you do not learn all parts of the course

# Leadership

- Some activities may (or may not) be delegated to one recognized person in the team
  - Strategic decisions
  - Coordination decisions (who does what)
  - Information collection and sharing
  - Spokesman to outside team (presents results, asks resources)
  - Conflict resolution, motivation, trust

# Leadership

- One person (team leader) can be in charge of all of them
- Or different people can be in charge, in function of their skills and experience
- Situational leader: leader is not defined from outside, but emerges in the team

# Leadership

- Hierarchical style
  - Activities completely in charge of leader  
(may generate conflicts and dissatisfaction)
- Democratic style
  - Decisions discussed by team and taken together  
(may result in excessive compromise or long delays)



- Find a reasonable compromise between the two styles
- The leader has high formal status, his/her actual status should correspond to the formal status

# Mood

- Perceptions of team members, about team, about context, about leader
- Negative
- Positive
  - Leadership is recognized, roles are recognized, goals are shared, communication is effective, feedback is requested and useful

# The fearless organization

- Psychological safety [Edmonson 2019]
- Organizations where members can express critiques, ideas, proposals, succeed
  - Google (2017)
- Organizations where members cannot, on the long run, fail
  - VW, Dieselgate

# Groupthink

- (opposite of fearless organization)
- All team members think (decide, work) in the same way
  - No diversity
  - No discussions
  - Risk of not recognizing bad decisions
- Depends on 'bandwagon' cognitive bias
  - As humans we are less anxious if our thoughts and behaviour follow the trend of the majority

# Lifecycle of team

- **Initial:** 'chaos', analysis, socialization to define roles and relationships
- **Storming:** more confidence, possible conflicts arise
- **Cohesion:** issues are recognized, discussed and solved without personal conflicts
- **Performing:** team is conscious of being an entity, with proven skills and capacities

- Aim to 'cohesion'
- Always express issues, avoid to transform them in personal issues

# Indicators of trouble

- Dependence from leader: leader must solve all problems, without leader's input no work is done
- Defense mode: the group has to fight an (invisible) enemy, most effort is on (talk about) fighting the enemy
- Fatalism: the solution will come, someday, somehow
- Groupthink: all group members always have same opinions

# Summary

- Working in teams is a necessity
- Issues and conflicts are the norm, not the exception
  - Define rules and norms and expectations upfront
  - Recognize conflicts, discuss them openly
- Awareness and soft skills can make working in teams pleasurable and productive