



Teams Foundations

A Different Approach

Overview



- Introduction
- Detour
 - Teams in prehistoric times
 - Teams in animals and insects
 - Behaviors of social Insects
- Team definition and characteristics
- Stages of team formation
- Teams decisions and Brainstorming
- Conflict Resolution

Introduction



- A generation ago people didn't talk about teams. Or, they existed, but they were conventional, function-bound things. There were:
 - accounting groups,
 - finance groups,
 - production groups,
 - and advertising groups.
- Everyone on a group did pretty much the same thing.



Could we have forgotten something so essential?

Let's Detour from the topic for a moment
Analogies could help understanding

Some Examples of animal diets

- A tiger's favorite prey is deer and wild boar.
- Wolves predominately prey on hoofed animals including Deer, moose, Bison, Elk, and caribou.
- The white-tailed deer is an herbivore or plant eater. It follows well-used trails to its feeding areas. It feeds in the early morning hours and in the late afternoon.

The Human Diet



- Atkins
- Paleo
- The Zone
- Vegetarian
- Vegan
- Weight Watchers
- South Beach
- Raw Food
- Mediterranean
- Low Carb
- Low Fat

http://en.wikipedia.org/wiki/African_Wild_Dog

- The African Wild Dog hunts in packs. Like most members of the dog family, it is a cursorial hunter, meaning that it pursues its prey in a long, open chase.
- Nearly 80% of all wild dog hunts end in a kill; for comparison, the success rate of lions, often viewed as ultimate predators, is only 30%.
- Members of a pack vocalize to help coordinate their movements. Its voice is characterized by an unusual chirping or squeaking sound, similar to a bird.
- Is this teaming?



Were Teams used by humans in Pre
Historic Times?

Mammoth Hunt: 14 000 Years Later

- In September of the past year, Russian scientists made sensational findings on the famous mammoth' burial site Lugovskoe in the Khanty-Mansi Autonomous Area.
- Particularly, about 300 human-shaped stone objects and a mammoth's vertebra pierced by a spear or javelin head were found.
- The pierced vertebra is the first indisputable proof that men hunted mammoths.
 - http://www.innovations-report.com/html/reports/earth_sciences/report-25131.html



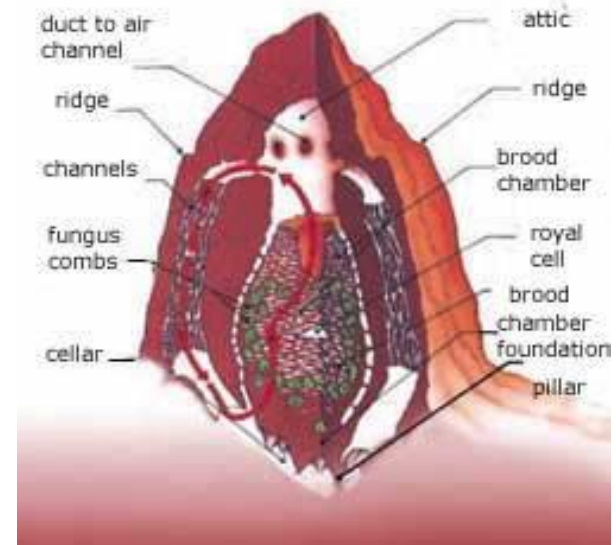
Very old examples of teamwork?

Some Examples

■ In a Bee Colony, who knows the blue print of the nest? The queen or hive?



■ In a Termite Nest knows the blue print of the nest?

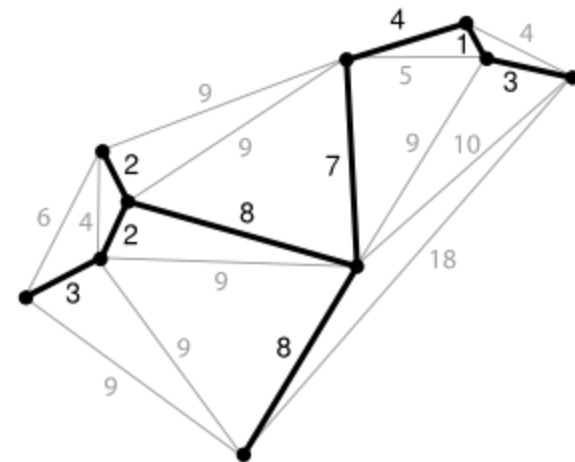




- Stigmergy is a mechanism of indirect coordination between agents or actions.
- The principle is that the trace left in the environment by an action stimulates the performance of a next action, by the same or a different agent.
- In that way, subsequent actions tend to reinforce and build on each other, leading to the spontaneous emergence of coherent, apparently systematic activity

Self-organizing processes exhibit emergent properties.

- The resulting structures appear to be more complex than what could be provided by individual contributions.
- Given a connected, undirected graph, a spanning tree of that graph is a subgraph that is a tree and connects all the vertices together
- A minimum spanning tree (MST) or minimum weight spanning tree is then a spanning tree with weight less than or equal to the weight of every other spanning tree.
 - http://en.wikipedia.org/wiki/Minimum_spanning_tree





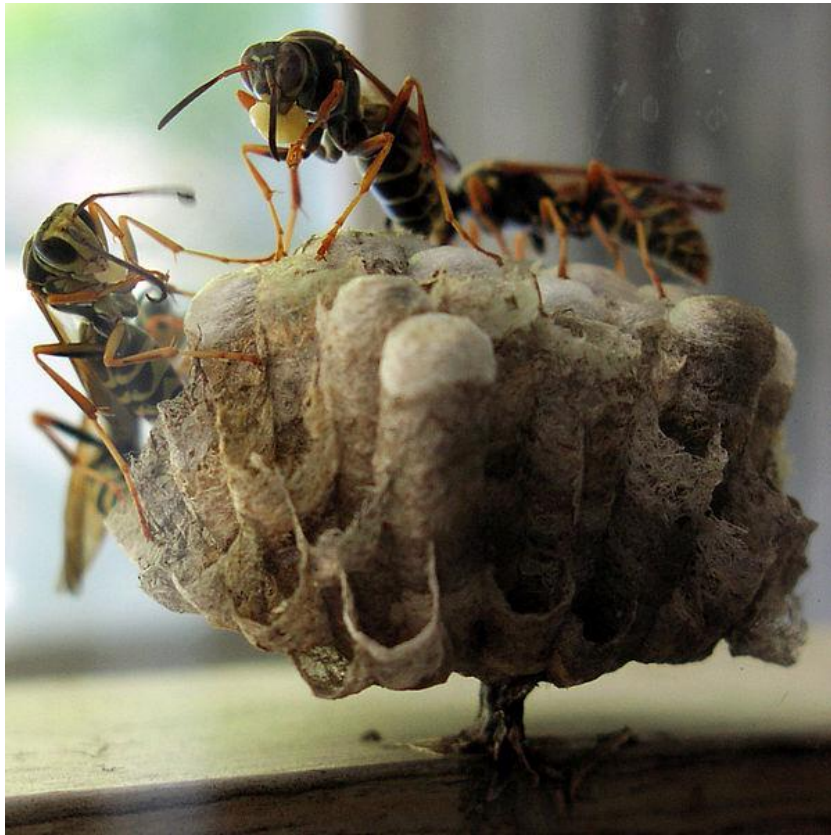
Categorizing the Collective Behavior of Social Insects

Categorizing the Collective Behavior of Social Insects

- *Coordination*
- Cooperation
- *Deliberation*
- *Collaboration*

Categorizing the Collective Behavior of Social Insects

- *Coordination.*



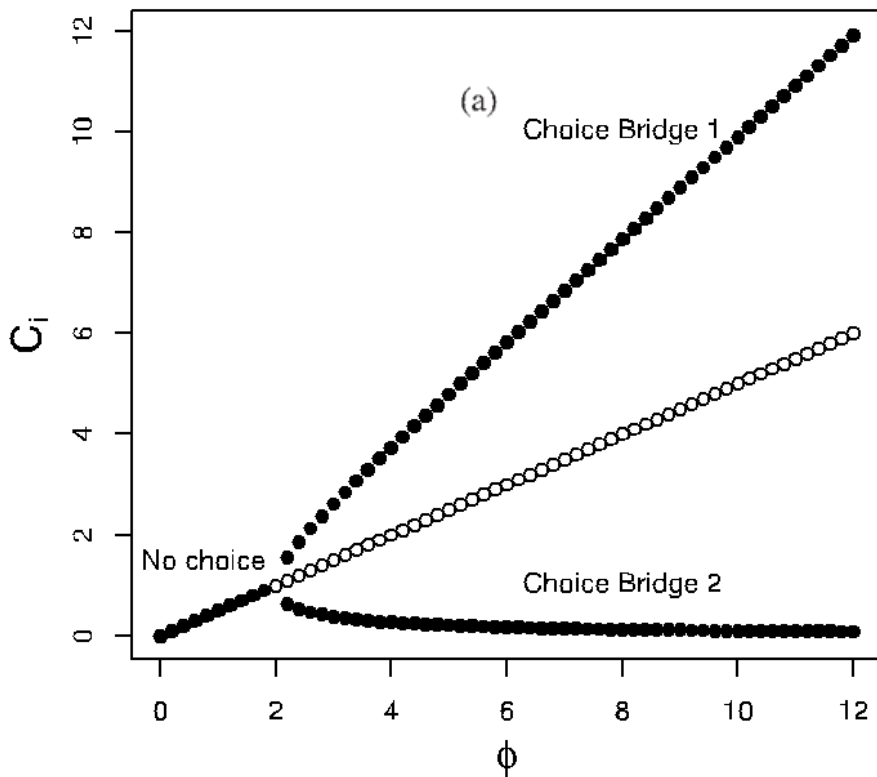
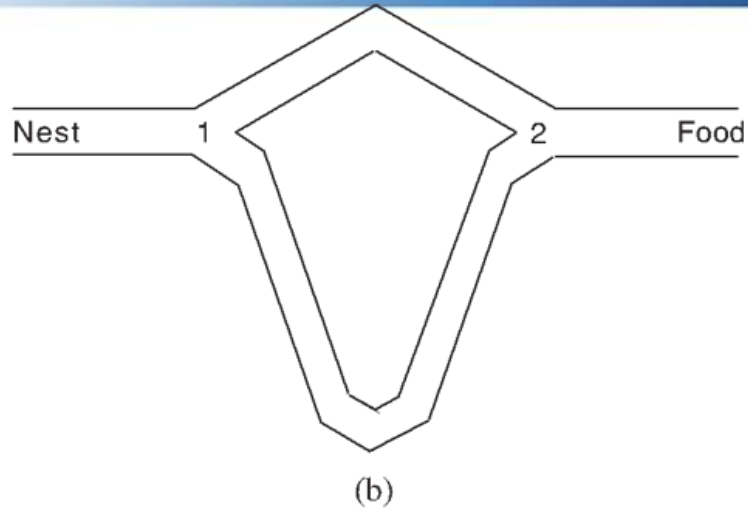
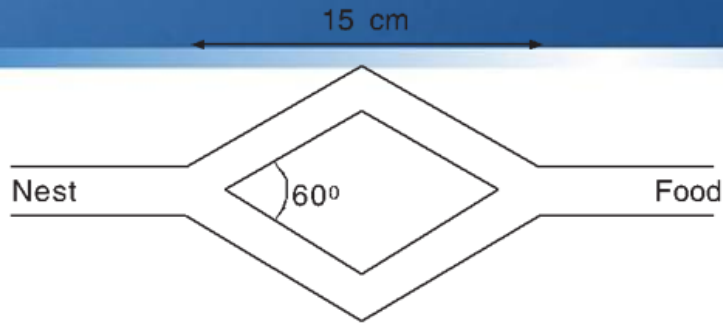
- Is the correct organization in space and time to solve a specific problem. In the case of nest constructions of some species of wasps, some individuals may complete structures that were initiated by another member of the colony.

Cooperation



- Is the combination of efforts in order to solve a problem. One typical example of cooperation is large prey retrieval where a single individual would not be strong enough to transport a prey and a cooperative effort is required.

Deliberation



■ Is the mechanisms by which insects make choices when they are presented with different alternatives. One example of this type of task is the source of food selection by some types of ants based on the scent intensity of the different trails.

Collaboration



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- Is the simultaneous execution of tasks of different nature like foraging for prey and tending brood inside the nest. Usually this mechanism is based on behavioral or morphological differentiation but age of the individuals could also be a factor.

Collective Behavior of Social Insects

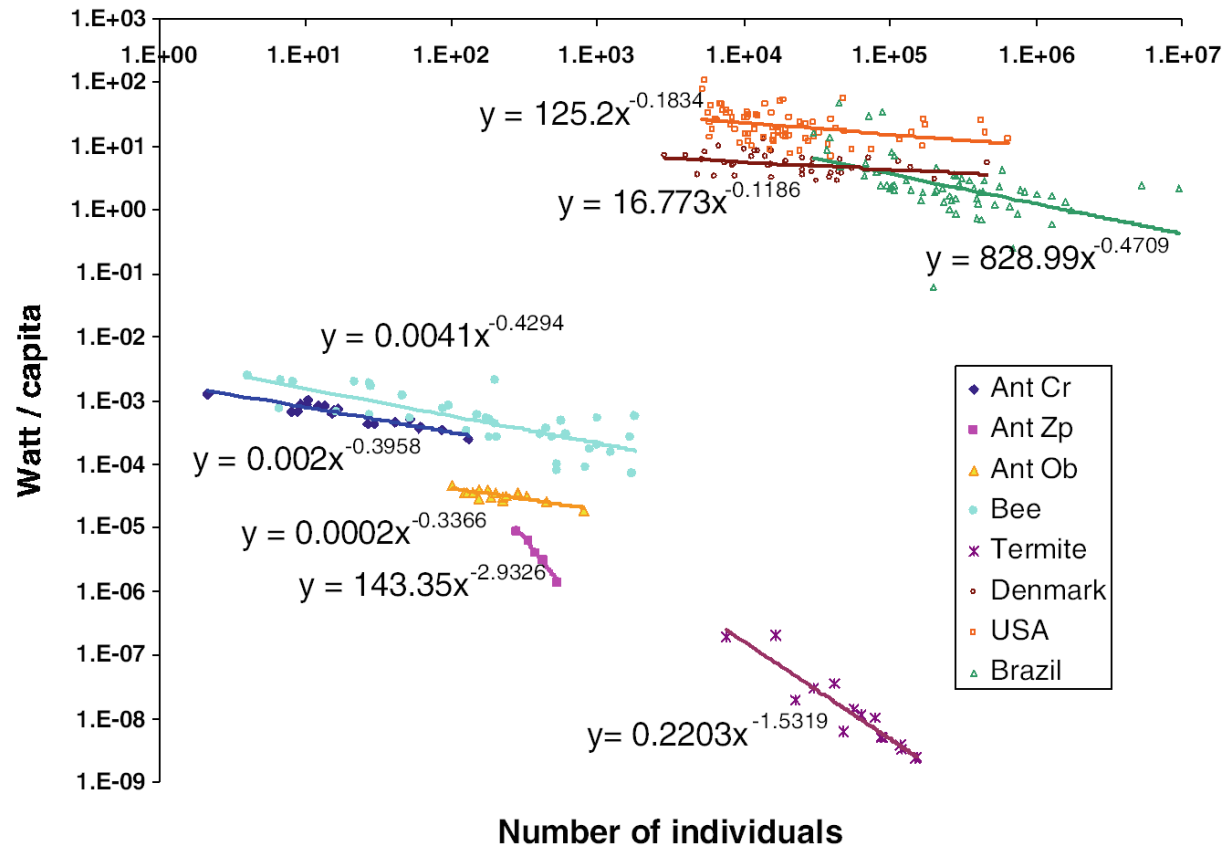
- Usually the actions performed by insects are the combination of two or more of the previously described tasks.
- In the case of the bees when the colony outgrows the hive the mother queen and half of the workers form a cluster in a tree branch from where they start a search for a new nest.
- Three different types of tasks are observed in this process:

Collective Behavior of Social Insects

- Collaboration. 5% of the workers leave in search of a new site while the remaining bees take care of the energy sources by maintaining a right temperature.
- Deliberation. From the different choices presented by the dances of the different groups of scouts a decision is made to select the new place.
- Coordination. Once the decision is taken there is a quasi simultaneous liftoff which is preceded by three signals that coordinate the action: activation of the quiescent bees, warm-up of the flight muscles and the go signal.

The Reason for working in teams

Fig. 1 Energy consumption in watt per capita vs. number of individuals in the society. Energy data for cities are calculated from electricity consumption whereas that for insect colonies is calculated from oxygen consumption. Data for ant colonies (Fonk and Jaffe 1996) are from *C. rufipes* (Cr), *Z. pusillus* (Zp), and *O. bauri* (Ob); the termite colonies from *Nasutitermes corniger* (Muradian et al. 1999); and honeybees from *Apis mellifera* (Heinrich 1981). Electricity consumption is from cities in Denmark, Georgia and Tennessee in the USA, and Brazil (Cabrera and Jaffe 1998)



Categorizing the Collective Behavior of Social Insects

- *Coordination*
- Cooperation
- *Deliberation*
- *Collaboration*

What is a Team?



- A team is:
 - a small number of people with
 - complementary skills who
 - are committed to a common purpose, performance goals, and approach for which
 - they hold themselves mutually accountable
- Team members also share a common fate

Use of Teams



▪ *“If you can’t operate as a team player, no matter how valuable you’ve been, you really don’t belong at GE”*

- John F. Welch
- CEO, General Electric
- (1993)

INTERVIEW RATING SHEET

(Actual rating form used by employer of engineers)



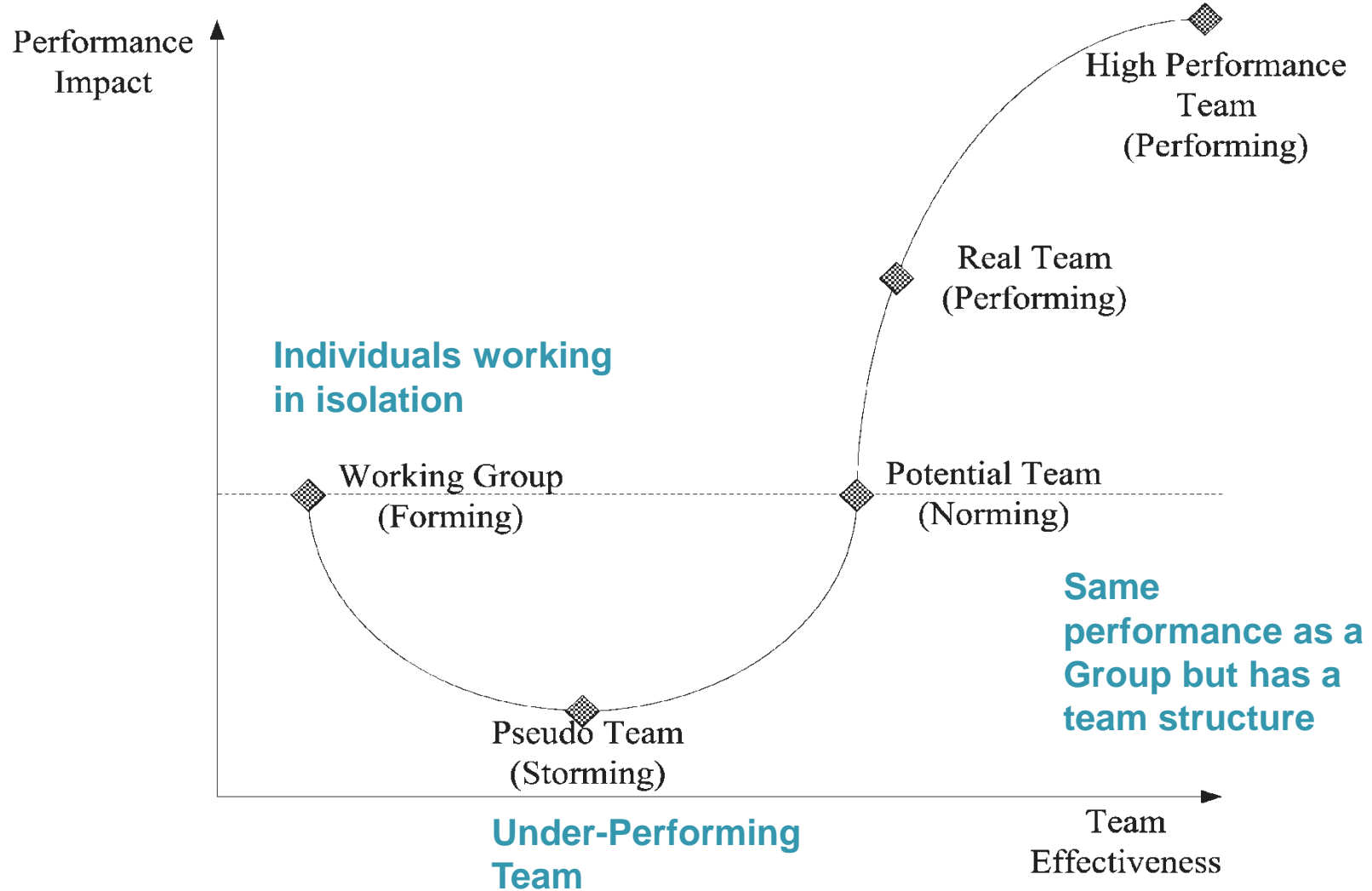
The Performance Skills to be evaluated	Evidence skill NOT present	Evidence Some skill present	Evidence Adequate Skill Present	Evidence Adequate Skill Present	Evidence Superior skill present	Insufficient evidence for or against skill
RISK-TAKING/INNOVATION	①	②	③	④	⑤	
TEAM SKILLS	①	②	③	④	⑤	
LEADERSHIP	①	②	③	④	⑤	
PROBLEM-SOLVING SKILL	①	②	③	④	⑤	

Stages of team formation



- *Forming* stage: getting acquainted and oriented, some testing behavior
- *Storming* stage: resistance to task demands, interpersonal conflict likely, struggle for group leadership
- *Norming* stage: emergence of informal leadership, consensus on group behaviors and norms, and on group's purpose
- *Performing* stage: clearly understood tasks and roles, productive work to accomplish team goals.
- *Adjourning*.

Stages of team formation



Those unwelcome team members



▪ Nola No-Can-Meet.

- Here's the group member who can't make the meeting, no matter when the others schedule it. He/she's willing to contribute, but he/she has a busy schedule and lots to do. The group should carry on without him/her, and he/she will do his/her part, as long as somebody lets him/her know.

▪ Do-It-All Dottie.

- Dottie doesn't much trust other people and their ability to do things the way she thinks they ought to be done or to her standards, so she does it all herself. If somebody offers to help, she puts them at ease: it's no problem, everything is under control, and they shouldn't worry. The less others in the group are involved, the happier Dottie is.

Those unwelcome team members



▪ Seldom-Seen Steve

- Nobody has seen him nor heard of Steve. He isn't coming to class, he hasn't tried to contact anybody else in the group, and nobody knows how to get in touch with him. The project is just about due. What should the other members do about Steve?

▪ Always-Right Artie

- Artie definitely contributes to the group. His ideas are good and he's always ready to offer them. The problem: he doesn't listen very well to the ideas of others and he tends to force his solutions on the group. He takes charge and pushes the others in the direction that he thinks is best, even though some in the group may not agree.

Those unwelcome team members



■ Quiet Quentin

- Quentin is so quiet that the others often forget he's there, although he/she comes to the meetings quite well prepared. His/her ideas would really help the group, but, unless they call on him, Quentin is unlikely to speak up.

Team Decisions



■ Majority

- This is the popular, "democratic" default option. When a team is unable to resolve a conflict, there is almost always a suggestion to "take a vote, majority wins."
- Majority rule has the illusion of fairness, but it cuts off discussion, thereby reducing decision quality. It also elicits no commitment to the decision from the losing minority. The "loyal opposition" is often a myth. Super-majorities of $2/3$ or $3/4$ do not solve the problems associated with voting.

Team Decisions



■ Unanimity

- Solves the problem of commitment, but is very cumbersome because now everyone has a veto.
- The U. N. Security Council is a good (horrible?) example.

Team Decisions



■ Minority

- Several members make a decision and impose it upon the majority, who have been disenfranchised. In the hands of skilled practitioners, this can look like participatory decision making, but it is only a handclasp among a few members.
- Decision quality suffers because of the lack of input from the majority, and commitment to the decision is low among those outside the minority.

Team Decisions



■ Consensus

- Difficult to achieve, but results in the best decision quality and the highest level of commitment to the team decision.
- The alternatives are discussed and refined until a consensus is attained. That may mean that no one gets exactly what he or she wanted, but everyone is able to say, "I might take a different course of action if it were entirely up to me, but I commit my support to the plan we have all agreed upon." Achieving consensus involves compromise on the part of all members, but it is each member's responsibility to present her/his position as effectively as possible. Only then does consensus lead to high quality decisions.

Team Composition and Roles

- As part of the collaboration behavior we discussed earlier, the team needs to divide roles
- There are key roles that are essential to the overall team's success.

Team Composition and Roles

■ Team leader / Team Member

- Leads team through problem solving process
- Maintains accurate records of team activities and results
- Prepares for each team meeting
- Provides structure and guidance to allow maximum participation
- Is committed and fully involved in project
- Invests appropriate amount of time on the project
- Participates equally in:
 - Defining problems
 - Investigating problems
 - Defining solutions
 - Documenting solutions
 - Making decisions

Possible Positive Roles of Team Members

- Administrator – provides the team's interface with corporate management.
- Application expert – identifies uses for an idea.
- Balloon popper – bring the team back to earth when it gets carried away.
- Bookkeeper – watches the expenditures and keeps the project within budget.
- Cheerleader – keeps saying that it can be done.
- Coach – motivates the team and its members.
- Coordinator – brings it all together.
- Entrepreneur – obtains the necessary financial backing.
- Expediter – locates the necessary materials, expertise, and equipment.
- Expert – knows everything about a particular topic
- Fence mender – fixes broken personal relationships
- Inspector – identifies flaws in the end product
- Investigator – probes a specific area or topic.
- Researcher – searches for needed information
- Reviewer – keeps an eye on the “big picture” and edits documentation
- Salesperson – sells people on the project and its importance

Guidelines for productive meetings

■ Comply with Team Norms

- Is everyone participating?
- Is no one dominating?
- Are team roles being followed?
- Is the team staying on task?
- Is the team reaching consensus?
- Are team members coming prepared to work?
- Are team members arriving on time?
- Do the team members understand the decision tools being used?

Constructive Conflict



- *Avoidance* – ignoring the conflict and hoping it will go away;
- *Smoothing* - allowing the desires of the other party to win out in order to avoid the conflict;
- *Forcing* - imposing a solution on the other party;
- *Compromise* - attempting to meet the other party “halfway”; and
- *Constructive engagement* - determining the underlying desire of all the parties and then seeking ways to realize them.

Team dynamics and brainstorming

- It is important to develop respect for the ideas and talents early in the process. One formal technique for generating ideas (and getting to know one another in a fun and respectful environment) is brainstorming.
- Brainstorming is a classic technique for generating ideas and solutions to problems. Brainstorming consists of the members of a group offering individual ideas without any concurrent evaluation. 'Typically, a team will form a circle or sit around a table and, after a brief review of the problem for which ideas are being sought, offer ideas about the problem. One or more members of the team acts as the "scribe," writing down each idea offered for later discussion and review.

Review



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Trust your Genetics

Avoid extinction, work in teams





Q&A *Questions* *Answers*

