UNIT V STAFFING IN SOFTWARE PROJECTS

Managing People In Software Environments

4 main concerns:

- ❖ Staff Selection
- ❖ Staff Development
- ❖ Staff Motivation
- ❖ Well-being Staff during course of project

Understanding Behavior

- ❖ Identify the handling of people
- ❖ 2 approach:
- ❖ Positivist approach
  - ✓ Based on development of system
  - ✓ Discipline of Organizational behaviour theories *"If A is the situation then B is likely to result"*
- ❖ Interpretivist approach
  - ✓ How software Engineer defined?
    - ➢ Who customize and install package software
    - ➢ Cover the role of ICT business analyst
  - ✓ How successful defined?
- ❖ The 2 viewpoints(positivist and interpretivist) are both valid and useful in managing the people in software field.

POSITIVIST APPROACH

- ❖ Tends to be objective and empirical
  Seeks causes for behaviour
  Conduct studies that can be generalised to larger populations

INTERPRETIVIST METHODOLOGY

- ❖ More qualitative
  Based on smaller samples
  View each consumption situation as unique and non-predictive
  Look for common patterns across consumption situations

ORGANIZATIONAL BEHAVIOR

- The management's action of motivating human beings in the organization, according to Douglas McGregor, involves certain assumptions, generalizations and hypotheses relating to human behavior and human nature
- McGregor has characterized these assumptions in two opposite views, termed **Theory X** and **Theory Y**.

Theory X

This is the traditional theory of human behavior, In this theory, McGregor has certain assumptions about human behavior. These assumptions are as follows

1. Management is a process of directing employees' efforts, motivating them, controlling their actions, modifying their behavior to fit the needs of the organization.
2. Without this active intervention by management, people would be passive— even resistant—to organizational needs. They must be persuaded, rewarded, punished, controlled, and their activities must be directed.
3. The average man is by nature indolent—he works as little as possible.
4. He lacks ambition, dislikes responsibility, prefers to be led.
5. He is inherently self-centered, indifferent to organizational needs.
6. He is, by nature, resistant to change.
7. He is gullible, not very bright, the ready dupe of the charlatan and the demagogue.

These assumptions about human nature are negative in their approach, however much organisational processes have developed on these assumptions.

Theory Y

The assumptions of Theory Y are described by McGregor in the following words:
1. The expenditure of physical and mental effort in work is as natural as play or rest. The average human being does not inherently dislike work. Depending upon controllable conditions, work may be a source of satisfaction or a source of punishment.
2. External control and the threat of punishment are not the only means for bringing about effort towards organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.
3. Commitment to objectives is a function of the reward associated with their achievement. The most significant of such awards, e.g. the satisfaction of ego and self-actualization needs, can be a direct product of effort directed towards organizational objectives.
4. The average human being learns under proper conditions not only to accept, but to seek responsibility. Avoidance of responsibility, lack of ambition, and emphasis on security are generally consequences of experience, not inherent human characteristics.
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly, distributed in the population.

The assumptions of Theory Y suggest a new approach in management. It emphasises on the cooperative endeavour of management and employees.

How do you select the right persons for the job?

There is no perfect answer, but the interview process can be a tremendous help if you use it effectively. In order, the key steps to finding the right person to fill a position in your company include:

- ✓ Determining your need to hire a new employee.
- ✓ Conducting a thorough job analysis.
- ✓ Writing a job description and job specification for the position based on the job analysis.
- ✓ Determining the salary for the position, based on internal and external equity.
- ✓ Deciding where and how to find qualified applicants.
- ✓ Collecting and reviewing a fair amount of applications and resumes and then selecting the most qualified candidates for further consideration.
- ✓ Interviewing the most qualified candidates for the position, based on the job's description and specification.
- ✓ Checking references and Hiring the best person for the job.

THE RECRUITMENT PROCESS

It must be stressed that often project leader have little choice about the people who will make up their team.

A GENERAL APPROACH

- ❖ Create a job specification: advice is often needed as there could be legal implications in an official document.
- ❖ Create a job holder profile: it is used to construct a profile of the person needed to carry out the job.
- ❖ Obtain applicants: an advertisement would be placed, either within the organization in the trade.
- ❖ By giving the salary, location, job scope and any essential qualification, the applicants will be limited to the more realistic candidates.

Examine cvs: these should be read carefully and compared to the job holder profile-nothing is more annoying for all concerned than when people have cvs which indicate clearly that they are not eligible for the job and yet are called for interview.

Selection techniques are aptitude, personality test and the examination of sample of previous work. Any method must test specific qualities detailed in the job holder profile. Interviews are the most commonly used method. An interview might be of a technical nature where the practical expertise of the candidate is assessed.

Other procedures: references will need to be taken up where necessary and a medical examination might be needed.

Steps:

Initial Contact from the Client - Based on the requirement, we assign the right recruitment consultant from day one that runs with the job until completion.

1. **Job Specification** – First steps are all about information gathering and ensuring we receive a detailed job specification - if there is no job description available your recruitment consultant will work with you to understand the role profile and selection criteria.

2. **Detailed brief** - Arras then understands the finer details of a job - the key drivers, ways of working and organizational ethos, the personality and softer skills needed for the job. All these details are shared with the candidate at shortlist stage to give them a fuller picture of the job.
3. **Timescales and Process** – By outlining the recruitment timescales and preferred interview process with you; 1st, 2nd, 3rd interviews or assessment Centre, we can plan and manage expectations throughout the process with the shortlisted candidates. We aim to try and avoid those recruitment frustrations like waiting ages for feedback and interview shortlisting.
4. **Search and selection** – The term used is essentially the activities we perform to find the ideal candidates for the job. We encourage candidates to register with us - this is where most of our placed project management candidates originate from. The next step is to advertise on the project management job board. We then use a selection of methods both online (job boards, social media etc.) and offline (networking groups, press etc).
5. **Arras One-to-One interview** – There is an initial screening project management interview with the recruitment consultant for each candidate for each role we recruit for. We have never shortlisted a candidate for a client without carrying out this interview - this works for both parties; we understand more about a candidates skills, experiences and suitably for the job whilst informing about the company and the opportunity they are being interviewed for.
6. **Shortlisting** – Following the project management interview candidates are asked if the role is something that they would like to pursue. Arras People only forward details of candidates to our clients when given expressed permission to do so. When in agreement, the consultant will send the candidate CV and an **individual profile** of skills, experience and capability for the job.
7. **Interview management** – Once the client has reviewed the CV and profile candidates are notified when feedback is available. If a candidate is unsuccessful at this stage, the consultant will give feedback. Feedback obviously comes back in varying degrees of detail but we share everything we know. All candidates selected to attend an interview will be contacted by the consultant straight away with the details. With each interview, the consultant will arrange for an **interview preparation session**, helping candidates get ready for the interview by sharing details about the type of interview, who will be interviewing and any hints and tips which will be useful for that particular job and client. Interview preparation sessions are carried out for each interview - regardless of how many stages. If interviews include a presentation - the consultant will walk through and review that.

8. **Offers** – Each consultant at Arras is here to represent candidates through to the offer and negotiation stage. Following the successful interview candidates are contacted with feedback and the pending offer. By working closely with the Arras consultant, candidates can be assured that the offer stage is managed effectively and smoothly to completion.
9. **Start** – When details of offers and start dates are finalized, the Arras consultant remains in touch throughout. Arras will follow up with brief calls to make sure you are happy in your new job.

MOTIVATION

The various models of motivation are:

- The Taylorist model
- Maslow's hierarchy of needs
- Herzberg's two-factor theory
- The expectancy theory of motivation

The Taylorist model:

Taylor had a simple view about what motivated people at work - money. He felt that workers should get a fair day's pay for a fair day's work, and that pay should be linked to the amount produced (e.g. piece-rates). Workers who did not deliver a fair day's work would be paid less (or nothing). Workers who did more than a fair day's work (e.g. exceeded the target) would be paid more.

The implications of Taylor's theory for managing behavior at work were:

- The main form of motivation is high wages, linked to output
- A manager's job is to tell employees what to do
- A worker's job is to do what they are told and get paid accordingly

Weaknesses in Taylor's Approach:

- The most obvious weakness in Taylor's approach is that it ignores the many differences between people. There is no guarantee that a "best way" will suit everyone.
- Secondly, whilst money is an important motivation at work for many people, it isn't for everyone. Taylor overlooked the fact that people work for reasons other than financial reward.

MASLOW'S HIERARCHY OF NEEDS

The basic human needs placed by Maslow in an ascending order of importance are:

1. Physiological Needs These are the basic needs for sustaining human life itself, such as food, water, warmth, shelter, and sleep. Maslow felt that until these needs are satisfied to the degree necessary to maintain life, other needs will not motivate people.

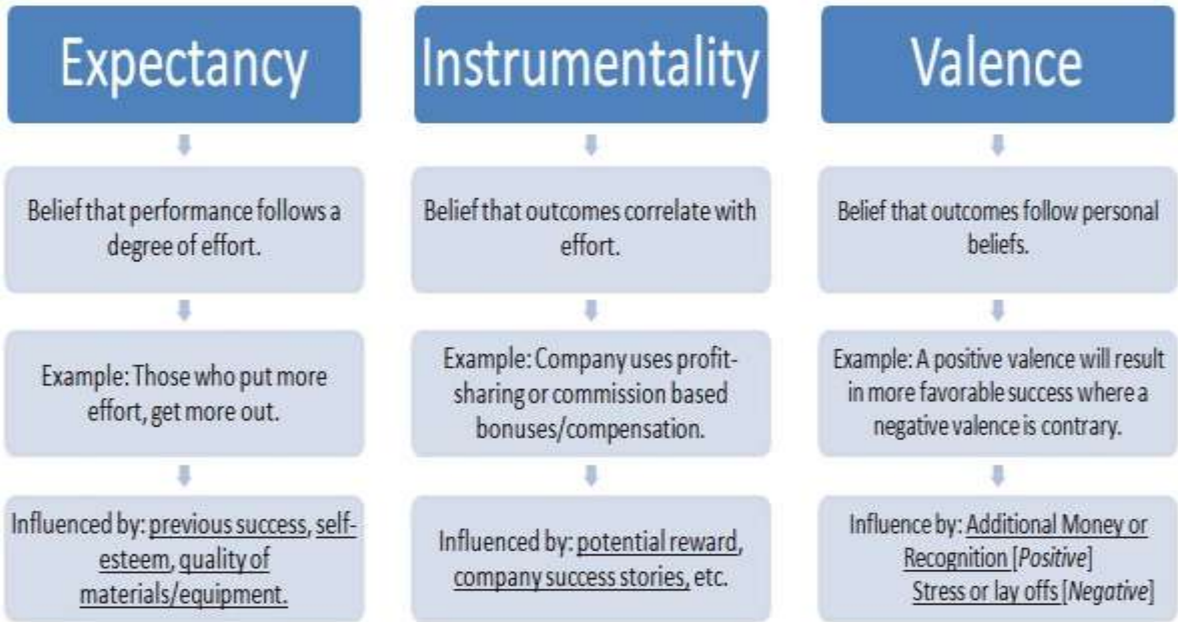
2. Security or Safety Needs These are the needs to be free of physical danger and of the fear of losing a job property, food, or shelter.

3. Affiliation or Social Needs Since people are social beings; they need to belong, to be accepted by others. It includes friendship, the need to love and be loved, socializing, etc.
4. Esteem Needs Once people begin to satisfy their need to belong; they tend to want to be held in esteem both by themselves and by others. This kind of need produces such satisfactions as respect, power, prestige, status, and self-confidence.
5. Self-actualization Needs This as the highest need in the hierarchy. It is the desire to become what one is capable of becoming—to fully realizes one's potential and to accomplish what one is capable of achieving.

Herzberg's two-factor theory:
Job satisfaction by Herzberg and his associates found two sets of factors about a job:

- **Hygiene or maintenance factors**, which can make you dissatisfied if they are not right for example the level of pay or the working conditions
- **Motivators**, which make you, feel that the job is worthwhile, like a sense of achievement or the challenge of the work itself.

The expectancy theory of motivation



It identifies three influences on motivation

- Expectancy: the belief that working harder will lead to a better performances
- Instrumentality: the belief that better performance will be rewarded
- Valence: of the resulting reward.

Expectancy theory proposes that an individual will decide to behave or act in a certain way because they are motivated to select a specific behavior over other behaviors due to what they expect the result of that selected behavior will be.

The Expectancy Theory of Motivation explains the behavioral process of why individuals choose one behavioral option over another. It also explains how they make decisions to achieve the end they value. Vroom introduces three variables within the expectancy theory which are valence (V), expectancy (E) and instrumentality (I). The three elements are important behind choosing one element

over another because they are clearly defined: effort-performance expectancy (E>P expectancy), performance-outcome expectancy (P>O expectancy).
Three components of Expectancy theory: Expectancy, Instrumentality, and Valence
1. Expectancy: Effort → Performance (E→P)
2. Instrumentality: Performance → Outcome (P→O)
3. Valence: V(R)

Expectancy: Effort → Performance (E→P)

Expectancy is the belief that one's effort (E) will result in attainment of desired performance (P) goals.
1. Self-efficacy- the person's belief about their ability to successfully perform a particular behavior. The individual will assess whether they have the required skills or knowledge desired to achieve their goals.
2. Goal difficulty- when goals are set too high or performance expectations that are made too difficult. This will most likely lead to low expectancy. This occurs when the individual believes that their desired results are unattainable.
3. Perceived control - Individuals must believe that some degree of control over the expected outcome. When individuals perceive that the outcome is beyond their ability to influence, expectancy, and thus motivation, is low.

Instrumentality: Performance → Outcome (P→O)

Instrumentality is the belief that a person will receive a reward if the performance expectation is met. This reward may present itself in the form of a pay increase, promotion, recognition or sense of accomplishment. Instrumentality is low when the reward is the same for all performances given.
Factors associated with the individual's instrumentality for outcomes are trust, control and policies.

Valence V(R)

The value an individual places on the rewards of an outcome, which is based on their needs, goals, values and Sources of Motivation. Influential factors include one's values, needs, goals, preferences and sources that strengthen their motivation for a particular outcome. Valence is characterized by the extent to which a person values a given outcome or reward. This is not an actual level of satisfaction rather the expected satisfaction of a particular outcome.

The valence refers to the value the individual personally places on the rewards.
-1 →0→ +1

-1= avoiding the outcome 0 = indifferent to the outcome +1 = welcomes the outcome

In order for the valence to be positive, the person must prefer attaining the outcome to not attaining it.

Motivational Force (MF) = Expectancy x Instrumentality x Valence

When deciding among behavioral options, individuals select the option with the greatest amount of motivational force (MF).
Expectancy and instrumentality are attitudes (cognitions), whereas valence is rooted in an individual's value system. Examples of valued outcomes in the workplace include, pay increases and bonuses, promotions, time off, new assignments, recognition, etc. If management can effectively determine what their employee values, this will allow the manager to motivate employees in order to get the highest result and effectiveness out of the workplace.

OLDHAM-HACKMAN JOB CHARACTERISTICS MODEL

The job characteristics model, designed by Hackman and Oldham, is based on the idea that the task itself is key to employee motivation. Specifically, a boring and monotonous job stifles motivation to perform well, whereas a challenging job enhances motivation. Variety, autonomy and decision authority are three ways of adding challenge to a job. Job enrichment and job rotation are the two ways of adding variety and challenge.

It states that there are five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback) which impact three critical psychological states (experienced meaningfulness, experienced responsibility for outcomes, and knowledge of the actual results), in turn influencing work outcomes (job satisfaction, absenteeism, work motivation, etc.). The five core job characteristics can be combined to form a motivating potential score (MPS) for a job, which can be used as an index of how likely a job is to affect an employee's attitudes and behaviors. Hackman and Oldham's job characteristics theory proposes that high motivation is related to experiencing three psychological states whilst working:

Meaningfulness of work: That labor has meaning to you, something that you can relate to, and does not occur just as a set of movements to be repeated. This is fundamental to intrinsic motivation, i.e. that work is motivating of itself (as opposed to motivating only as a means to an end).

Responsibility: That you have been given the opportunity to be a success or failure at your job because sufficient freedom of action has given you. This would include the ability to make changes and incorporate the learning you gain whilst doing the job.

Knowledge of outcomes: This is important for two reasons. Firstly to provide the person knowledge on how successful their work has been which in turn enables them to learn from mistakes. The second is to connect them emotionally to the customer of their outputs, thus giving further purpose to the work (e.g. I may only work on a production line, but I know that the food rations I produce are used to help people in disaster areas, saving many lives).

Oldham and Hackman suggest that the satisfaction that the job gives is based on 5 factors. They are

- ❖ Skill variety: - the number of different skills that the job holder has the opportunity to exercise.
- ❖ Task identity: - the degree to which your work and its results are identifiable as belonging to you.
- ❖ Task significance: - the degree to which your job has an influence on others
- ❖ Autonomy: - the discretion you have about the way you to the job.
- ❖ Feedback: - the information you get back about results of your work.

Methods of improving motivation

- Set specific goal: These goals need to be demanding and yet acceptable to staff. Involving staff in the setting goal helps to gain acceptance for them
- Provide feedback :Not only do goals have to be set but staff need regular feedback about how they are progressing
- Consider job design: Jobs can be altered to make them more interesting and give staff more feeling of responsibility.

Various measurements of job design:

Simplification of Job:

In job simplification jobs are broken in to very small parts as in assembly line operations and work can be done by same individual repeatedly and it will increase productivity and proficiency of individual.

Job Enlargement:

Job enlargement expands job horizontally. It increases job scope; that is, it increases the number of different operations required in a job and the frequency with which the job cycle is repeated. By increasing the number of tasks an individual performs, job enlargement, increases the job scope, or job diversity.

Job Rotation:

Job rotation is the systematic and planned rotation of individuals in pre-determined jobs (other than their own) so they can gain additional knowledge or skills. It is done quite a bit for developing managers (because they need to be familiar with operations overall) and also used with others who want to advance to a new role or become more knowledgeable in their current job role.

Job Enrichment:

The job holder carries out that are normally done at a managerial or supervisory level. With programmers in a maintenance team they may given authority to accept requests for changes that involve then five day's work without the need for their manager's approval. It is different from job enlargement (which focuses on increasing the number of tasks a job holder is responsible for performing more work /tasks to do).

ETHICAL AND PROFESSIONAL CONCERNS

Ethics relates to the moral obligation to respect the rights and interests of others – goes
beyond strictly legal responsibilities

Three groups of responsibilities:

√ Responsibilities that everyone has
√ Responsibilities that people in organizations have
√ Responsibilities relating to your profession or calling

Organizational ethics

There are some who argue that ethical organizational ethics are limited:

√ Stockholder theory (e.g. Milton Friedman). An employee's duty is to the owners of the business (which often means the stakeholders) above all others – although legal requirements must be met.
√ Competitive relationships between businesses.
√ Competition may cause you to do things that could have a negative impact on the owners or employees of competitive businesses

Uniform Treatment

One example of organizational ethics is the uniform treatment of all employees. Small business owners should treat all employees with the same respect, regardless of their race, religion, cultures or lifestyles. Everyone should also have equal chances for promotions. One way to promote uniform treatment in organizations is through sensitivity training. Some companies hold one-day seminars on various discrimination issues. They then invite outside experts in to discuss these topics. Similarly, small company managers must also avoid favoring one employee over others. This practice may also lead to lawsuits from disgruntled employees. It is also counterproductive.

Social Responsibility

Small companies also have an obligation to protect the community. For example, the owner of a small chemical company needs to communicate certain dangers to the community when explosions or other disasters occur. The owner must also maintain certain safety standards for protecting nearby residents from leaks that affect the water or air quality. There are state and federal laws that protect people from unethical environmental practices. Business owners who violate these laws may face stiff penalties. They may also be shut down.

Financial Ethics

Business owners must run clean operations with respect to finances, investing and expanding their companies. For example, organizations must not bribe state legislators for tax credits or special privileges. Insider trading is also prohibited. Insider trading is when managers or executives illegally apprise investors or outside parties of privileged information affecting publicly traded stocks, according to the Securities and Exchange Commission. The information helps some investors achieve greater returns on their investments at the expense of others. Executives in small companies must strive to help all shareholders earn better returns on their money. They must also avoid collusive arrangements with other companies to deliberately harm other competitors.

Considerations

A small company's organizational ethics can also include taking care of employees with mental illnesses or substance abuse problems, such as drug and alcohol dependency. Ethical business owners help their employees overcome these types of problems when possible. They often put them through employee advisor programs, which involves getting them the treatment they need. Employees may have issues that lead to these types of problems. Therefore, they deserve a chance to explain their situations and get the help they need.

Professional ethics

Professionals have knowledge about the technical domain that the general public does not. Ethical duty of the expert to warn lay people of the risks involved in a particular course of action. Many professions, or would be professions, have codes of conduct for their members.

Important characteristics of a good team

By teams we usually mean groups of people who are working together. A team is created to carry out a joint assignment. The important characteristics of a good team are

- Everyone participates actively and positively in meetings and projects.
- Team goals are understood by everyone.

- Individual members have thought hard about creative solutions to the problem.
- Members are carefully listened to and receive thoughtful feedback.
- Everyone takes initiative to get things done.
- Each teammate trusts the judgment of the others.
- The team is willing to take risks.
- Everyone is supportive of the project and of others.
- There is plenty of communication between team members.
- Team decisions are made using organized, logical methods.
- Full team acceptance is expected as decisions are made.
- Dissenting opinions are recorded, and may be revisited if future situations dictate.
- Team goals are given realistic time frames.
- Everyone is focused on the ultimate goal of the project, while also digging into the underlying details.

The Five Stages of Team Development

Every team goes through the five stages of team development. First, some background on team development. The first four stages of team growth were first developed by Bruce Wayne Tuckman and published in 1965. His theory, called "Tuckman's Stages" was based on research he conducted on team dynamics. He believed (as is a common belief today) that these stages are inevitable in order for a team to grow to the point where they are functioning effectively together and delivering high quality results. In 1977, Tuckman, jointly with Mary Ann Jensen, added a fifth stage to the 4 stages: "Adjourning." The adjourning stage is when the team is completing the current project. They will be joining other teams and moving on to other work in the near future. For a high performing team, the end of a project brings on feelings of sadness as the team members have effectively become as one and now are going their separate ways.

The five stages:

- Stage 1: Forming
- Stage 2: Storming
- Stage 3: Norming
- Stage 4: Performing
- Stage 5: Adjourning

Stage 1: Forming

The "forming" stage takes place when the team first meets each other. In this first meeting, team members are introduced to each. They share information about their backgrounds, interests and experience and form first impressions of each other. They learn about the project they will be working on, discuss the project's objectives/goals and start to think about what role they will play on the project team. They are not yet working on the project. They are, effectively, "feeling each other out" and finding their way around how they might work together.

During this initial stage of team growth, it is important for the team leader to be very clear about team goals and provide clear direction regarding the project. The team leader should ensure that all of the members are involved in determining team roles and responsibilities and should work with the team to help them establish how they will work together ("team norms".) The team is dependent on the team leader to guide them.

Stage 2: Storming

As the team begins to work together, they move into the "storming" stage. This stage is not avoidable; every team – most especially a new team who has never worked together before – goes through this part of developing as a team. In this stage, the team members compete with each other for status and for acceptance of their ideas. They have different opinions on what should be done and how it should be done – which causes conflict within the team. As they go progress through this stage, with the guidance of the team leader, they learn how to solve problems together, function both independently and together as a team, and settle into roles and responsibilities on the team. For team members who do not like conflict, this is a difficult stage to go through.

The team leader needs to be adept at facilitating the team through this stage – ensuring the team members learn to listen to each other and respect their differences and ideas. This includes not allowing any one team member to control all conversations and to facilitate contributions from all members of the team. The team leader will need to coach some team members to be more assertive and other team members on how to be more effective listeners.

This stage will come to a closure when the team becomes more accepting of each other and learns how to work together for the good of the project. At this point, the team leader should start transitioning some decision making to the team to allow them more independence, but still stay involved to resolve any conflicts as quickly as possible.

Some teams, however, do not move beyond this stage and the entire project is spent in conflict and low morale and motivation, making it difficult to get the project completed. Usually teams comprised of members who are professionally immature will have a difficult time getting past this stage.

Stage 3: Norming

When the team moves into the “norming” stage, they are beginning to work more effectively as a team. They are no longer focused on their individual goals, but rather are focused on developing a way of working together (processes and procedures). They respect each other’s opinions and value their differences. They begin to see the value in those differences on the team. Working together as a team seems more natural. In this stage, the team has agreed on their team rules for working together, how they will share information and resolve team conflict, and what tools and processes they will use to get the job done. The team members begin to trust each other and actively seek each other out for assistance and input. Rather than compete against each other, they are now helping each other to work toward a common goal. The team members also start to make significant progress on the project as they begin working together more effectively.

In this stage, the team leader may not be as involved in decision making and problem solving since the team members are working better together and can take on more responsibility in these areas. The team has greater self-direction and is able to resolve issues and conflict as a group. On occasion, however, the team leader may step in to move things along if the team gets stuck. The team leader should always ensure that the team members are working collaboratively and may begin to function as a coach to the members of the team.

Stage 4: Performing

In the "performing" stage, teams are functioning at a very high level. The focus is on reaching the goal as a group. The team members have gotten to know each other, trust each other and rely on each other.

Not every team makes it to this level of team growth; some teams stop at Stage 3: Norming. The highly performing team functions without oversight and the members have become interdependent. The team is highly motivated to get the job done. They can make decisions and problem solve quickly and effectively. When they disagree, the team members can work through it and come to consensus without interrupting the project's progress. If there needs to be a change in team processes – the team will come to agreement on changing processes on their own without reliance on the team leader.

In this stage, the team leader is not involved in decision making, problem solving or other such activities involving the day-to-day work of the team. The team members work effectively as a group and do not need the oversight that is required at the other stages. The team leader will continue to monitor the progress of the team and celebrate milestone achievements with the team to continue to build team camaraderie. The team leader will also serve as the gateway when decisions need to be reached at a higher level within the organization.

Even in this stage, there is a possibility that the team may revert back to another stage. For example, it is possible for the team to revert back to the "storming" stage if one of the members starts working independently. Or, the team could revert back to the "forming" stage if a new member joins the team. If there are significant changes that throw a wrench into the works, it is possible for the team to revert back to an earlier stage until they are able to manage through the change.

Stage 5: Adjourning

In the "adjourning" stage the project is coming to an end and the team members are moving off into different directions. This stage looks at the team from the perspective of the well-being of the team rather than from the perspective of managing a team through the original four stages of team growth.

The team leader should ensure that there is time for the team to celebrate the success of the project and capture best practices for future use. (Or, if it was not a successful project – to evaluate what happened and capture lessons learned for future projects.) This also provides the team the opportunity to say good-bye to each other and wish each other luck as they pursue their next endeavor. It is likely that any group that reached Stage 4: Performing will keep in touch with each other as they have become a very close knit group and there will be sadness at separating and moving on to other projects independently.

DECISION MAKING

Decisions can be categorized as being,

- ❖ Structured: simple, routine decisions where rules can be applied in a fairly way.
- ❖ Unstructured: more complex and often requiring a degree of creativity.

Some mental obstacles to good decisions making:

- ❖ Faulty heuristics: it can be useful but there are dangers.
- ❖ They are based on information, stereotypes.
- ❖ Escalation of commitment
- ❖ Information overloaded

Group decision making:

With a project team different specialists and points of view can be brought together. Decisions made by the team as a whole are more likely to be accepted than those that are imposed. Assuming that the meetings are genuinely collectively responsible and have been properly briefed, research would seem to show that groups are better at solving complex problems when the members of the group have complementary skills and expertise. The meeting allows them to communicate freely and to get ideas accepted. Groups deal less effectively with poorly structured problems needing creative solutions. Brainstorming techniques can help groups in this situation but research shows that people often come up with more ideas individually than in a group. Where the aim is to get the involvement of end users of a computer system, then prototyping and participatory approaches such as Joint Application Development might be adopted.

Obstacles to good group decision making:

It is time consuming

- ❖ It can stir up conflicts within the group
- ❖ Decisions can be unduly influenced by dominant personalities

Conflict can, in fact, be less than might be expected. People will modify their personal

judgments to conform to group norms, common attitudes developed by a group over time. In fact, people in groups sometimes make decisions that carry more risk than where they make the decision on their own. This is known as the risky shift.

Measures to Reduce the Disadvantages of Group Decision Making:

One method of making group decision making more efficient and effective is by training members to follow a set procedure. The Delphi technique endeavors to collate the judgments of a number of experts without actually bringing them face to face. Given a problem, the following procedure is carried out:

The cooperation of a number of experts is enlisted

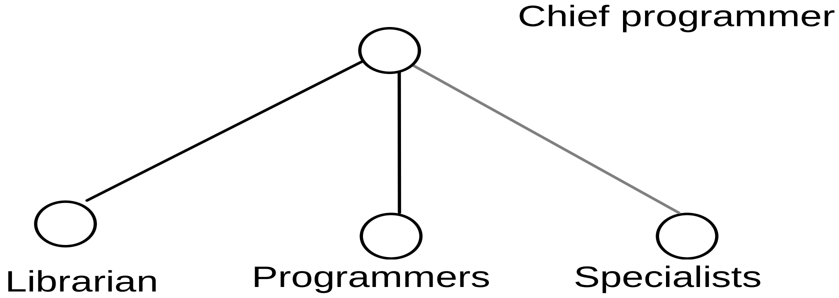
- ❖ The problem is presented to the experts
- ❖ The experts record their recommendations
- ❖ These recommendations are collated and reproduced
- ❖ The collected responses are re-circulated
- ❖ The experts comment on the ideas of others and modify their recommendations if so moved. If the leader detects a consensus then the process is stopped, otherwise the comments are re-circulated to the experts.

TEAM STRUCTURES

Team structure addresses the issue of organization of the individual project teams. There are mainly three formal team structures:

- ❖ Chief programmer,
- ❖ Democratic, and
- ❖ The mixed control team organizations

Chief Programmer Team



- In this team organization, a senior engineer provides the technical leadership and is designated as the chief programmer.
- The chief programmer partitions the task into small activities and assigns them to the team members.
- He also verifies and integrates the products developed by different team members.

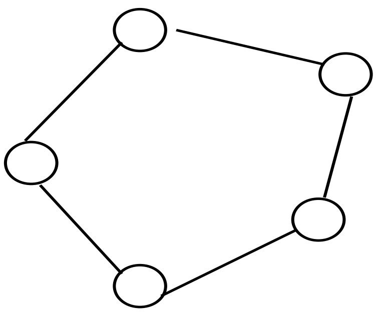
Advantage

- The chief programmer provides an authority, and this structure is arguably more efficient than the democratic team for well-understood problems.

Disadvantage

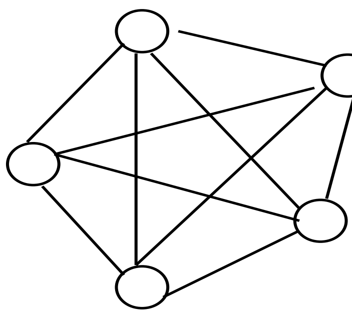
- However, the chief programmer team leads to lower team morale, since team-members work under the constant supervision of the chief programmer.
- This also inhibits collective and their original thinking.
- The chief programmer team is subject to single point failure since too much responsibility and authority is assigned to the chief programmer.
- Since the chief programmer carries out many tasks individually, there is a danger of information overload on the chief programmer

Democratic Team



(a)

Management structure



(b)

Communication path

- The democratic team structure, as the name implies, does not enforce any formal team hierarchy. Decisions are taken based on discussions, where any member is free to discuss with any other matters.
- Typically, a manager provides the administrative leadership. At different times, different members of the group provide technical leadership.

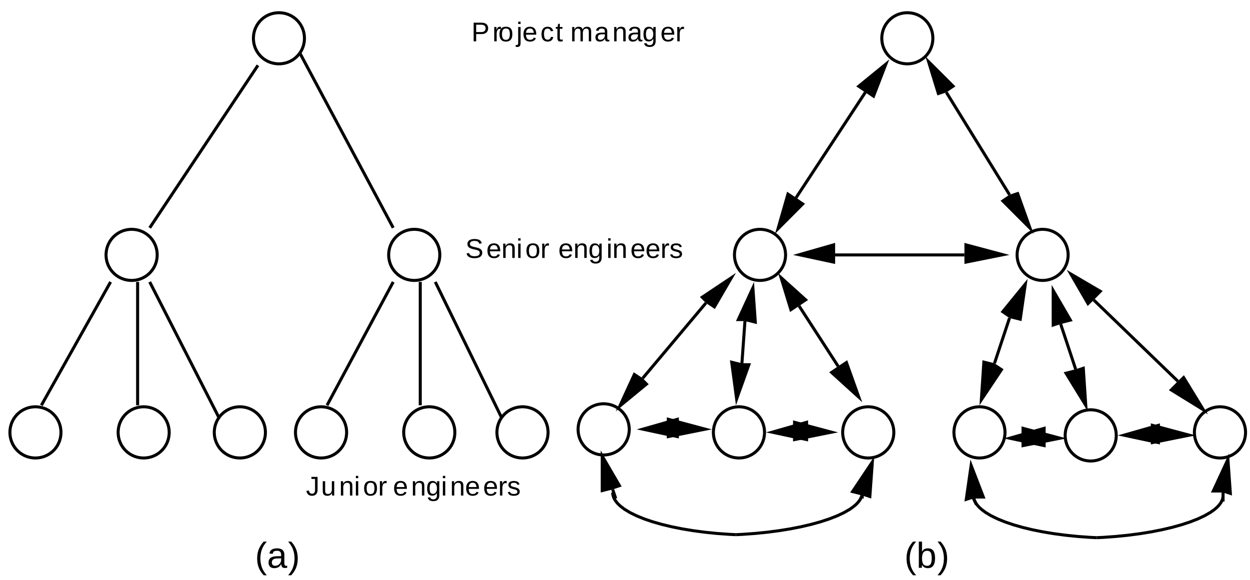
Advantages:

- ❖ The democratic organization leads to higher morale and job satisfaction.
- ❖ Democratic team structure is appropriate for less understood problems, since a group of engineers can invent better solutions than a single individual as in a chief programmer team.
- ❖ A democratic team structure is suitable for projects requiring less than five or six engineers and for research-oriented projects. For large sized projects, a pure democratic organization tends to become chaotic.
- ❖ The democratic team organization encourages egoless programming as programmers can share and review one another's work.

Disadvantages:

- ❖ Consequently, it suffers from less man-power turnover

The mixed control team organizations



Management structure **Communication path**

- ❖ The mixed team organization, as the name implies, draws upon the ideas from both the democratic organization and the chief-programmer organization. This team organization incorporates both hierarchical reporting and democratic set up.
- ❖ The democratic connections are shown as dashed lines and the reporting structure is shown using solid arrows.
- ❖ The mixed control team organization is suitable for large team sizes.
- ❖ The democratic arrangement at the senior engineer's level is used to decompose the problem into small parts. Each democratic setup at the programmer level attempts solution to a single part. Thus, this team organization is eminently suited to handle large and complex programs.

This team structure is extremely popular and is being used in many software development companies.

Virtual Teams

A Virtual Team – also known as a Geographically Dispersed Team (GDT) – is a group of individuals who work across time, space, and organizational boundaries with links strengthened by webs of communication technology. They have complementary skills and are committed to a common purpose, have interdependent performance goals, and share an approach to work for which they hold themselves mutually accountable. Geographically dispersed teams allow organizations to hire and retain the best people regardless of location. A virtual team does not always mean teleworkers. Teleworkers are defined as individuals who work from home. Many virtual teams in today's organizations consist of employees both working at home and small groups in the office but in different geographic locations.

Why Virtual Teams?

- Best employees may be located anywhere in the world.
- Workers demand personal flexibility.
- Workers demand increasing technological sophistication.
- A flexible organization is more competitive and responsive to the marketplace.
- Workers tend to be more productive – less commuting and travel time.
- The increasing globalization of trade and corporate activity.
- The global workday is 24 vs. 8 hours.
- The emergence of environments which require inter-organizational cooperation as well as competition.
- Changes in workers' expectations of organizational participation.
- A continued shift from production to service/knowledge work environments.
- Increasing horizontal organization structures characterized by structurally and geographically distributed human resources.

COMMUNICATION GENRES

	Same place	Different places
Same time	Meetings, Interviews	Telephone, instant messaging
Different times	Noticeboards, pigeon-boards	E-mail, voicemail, documents

- The nature of the information to be conveyed:
  - ✓ What is the extent and complexity of the information to be conveyed?
    - A phone conversation if message is simple

  - ✓ Is it easy to understand? Is the context well known to both the sender and the recipient?
    - ➢ Two way communication
  - ✓ Where the communication is personally sensitive
    - ➢ Face-to-face contacts
- ❖ At different stages of a project – different communication genres will be preferred
- ❖ Early stages – meeting(s)
  - ✓ Team members need to build up their trust and confidence in their co-workers
  - ✓ Decision making
- ❖ Intermediate stages (design) – teleconferencing
  - ✓ Activities executed in parallel
  - ✓ Some points needs to be clarified
- ❖ Implementation stages - emails
  - ✓ Everyone knows his role, work can progress
  - ✓ Face to face meetings – helps coordination and maintain motivation.

COMMUNICATION PLANS

A communications plan, in project management, is a policy-driven approach to providing stakeholders with information about a project. The plan formally defines who should be given specific information, when that information should be delivered and what communication channels will be used to deliver the information.
An effective communications management plan anticipates what information will need to be communicated to specific audience segments. The plan should also address who has the authority to communicate confidential or sensitive information and how information should be disseminated (email, web sites, printed reports, and/or presentations). Finally, the plan should define what communication channels stakeholders should use to provide feedback and how communication documentation will be archived as part of the project records.
In some organizations the communications management plan may also include a glossary of common project terminology that will be used within the project. This glossary may define and include samples of templates, reports and forms that the project manager will use to communicate information.

Audience

The project team must identify all audiences that will receive communications. In a large company, information technology project communications delivered to technical and development teams would vary widely from information provided to senior management, middle management or administrative staff. Other examples of various audiences within a large organization would be staff appointed to conduct end user testing or to write end user documentation.

Information Needs

Whether communications are distributed only to technical or functional teams, or address a wider audience, each message delivered should be prepared for a specific target audience. If a number of different audiences with different needs exist, the content of each message should also be varied for the intended recipients. An example in information technology would be communications of technical specifications that would be delivered to developers. This same information would not be delivered to all end user systems testers, only those responsible for documentation.

Media

Though electronic communications such as email may be the most efficient means of communication, it is not always the most effective in communications of project information or to deliver training. The project team should also consider newsletters, video feeds or webinars. Group presentations and town hall meetings to provide for question-and-answer sessions can also be provided to communicate project goals, user training or project results.

Timing

Communications for any project should start in the planning stages. Though the initial phases of communication will not be as robust as those near the end of a project, the initial step of broadcasting planned changes to any infrastructure or process is critical to receive buy-in from all parties. Information flow should be handled by the project team in coordination with senior management of an organization. This coordination is to define what information is to be delivered at various points during project progression.

Responsibilities

The project team may be responsible for all project communications, or a corporate communications unit could be called upon to provide assistance. However communications are handled, specific communications tasks should be assigned starting in the planning phase of a project. Though roles may change during the life of a project, a plan for delegating communications duties must be crafted in advance.