Best methods of staff selection

- Employee Selection is the process of putting right men on right job. It is a procedure of matching organizational requirements with the skills and qualifications of people. Effective selection can be done only when there is effective matching. By selecting best candidate for the required job, the organization will get quality performance of employees.

- Moreover, organization will face less of absenteeism and employee turnover problems. By selecting right candidate for the required job, organization will also save time and money. Proper screening of candidates takes place during selection procedure. All the potential candidates who apply for the given job are tested.

- But selection must be differentiated from recruitment, though these are two phases of employment process. Recruitment is considered to be a positive process as it motivates more of candidates to apply for the job. It creates a pool of applicants. It is just sourcing of data.

- While selection is a negative process as the inappropriate candidates are rejected here. Recruitment precedes selection in staffing process. Selection involves choosing the best candidate with best abilities, skills andknowledge for the required job.

The **Employee selection Process** takes place in following order-

1. **Preliminary Interviews-** It is used to eliminate those candidates who do not meet the minimum eligiblity criteria laid down by the organization. The skills, academic and family background, competencies and interests of the

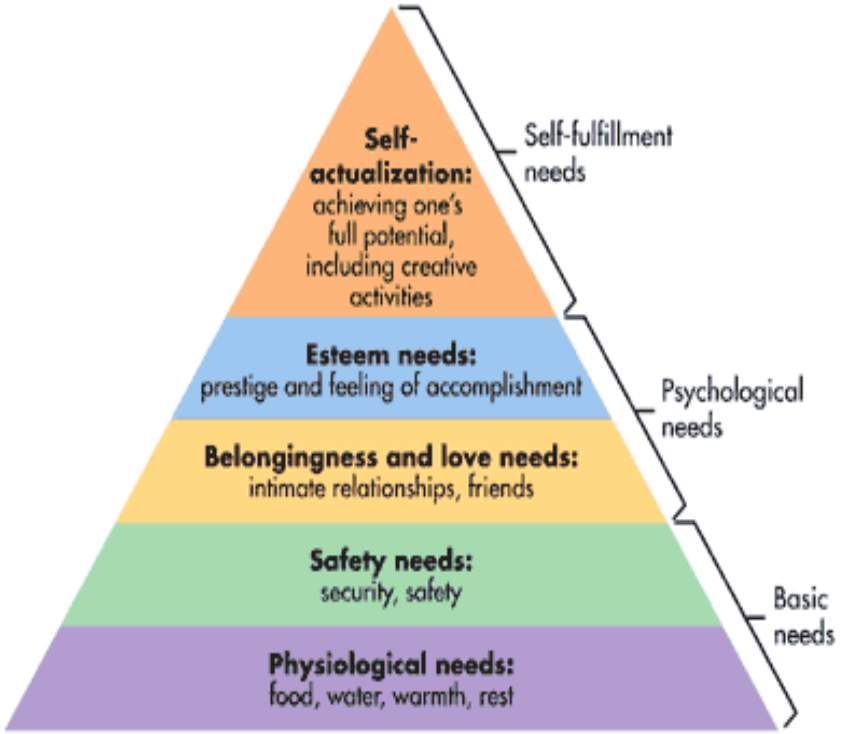
   candidate are examined during preliminary interview. Preliminary interviews are less formalized and planned than the final interviews. The candidates are given a brief up about the company and the job profile; and it is also examined how much the candidate knows about the company.

   Preliminary interviews are also called screening interviews.
2. **Application blanks-** The candidates who clear the preliminary interview are required to fill application blank. It contains data record of the candidates such as details about age, qualifications, reason for leaving previous job, experience, etc.

3. **Written Tests-** Various written tests conducted during selection procedure are aptitude test, intelligence test, reasoning

Motivation

- Motivation and application can often make up for shortfalls in innate skills
- Taylor's approach - financial incentives
- Abraham Maslow (1908-1970)
  - motivations vary from individual to individual
  - hierarchy of needs – as lower ones fulfilled, higher ones emerge
  - Lowest level – food, shelter
  - Highest level – self-actualization

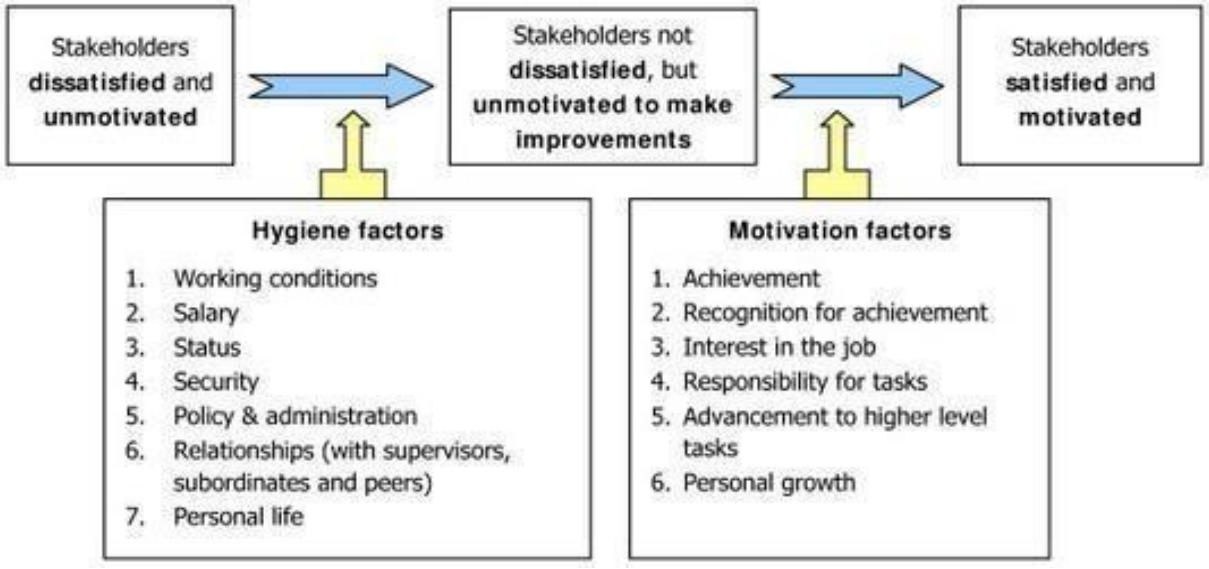


- Maslow's model implies that people will be motivated by different things at different times. Also that people always feel dissatisfied, but the focus of the dissatisfaction changes over time.

Herzberg's two factor theory

Herzberg suggested two sets of factors affected job satisfaction

1. Hygiene or maintenance factors – make you dissatisfied if they are not right e.g. pay, working conditions
2. Motivators – make you feel the job is worthwhile e.g. a sense of achievement



Vroom's expectancy theory of motivation

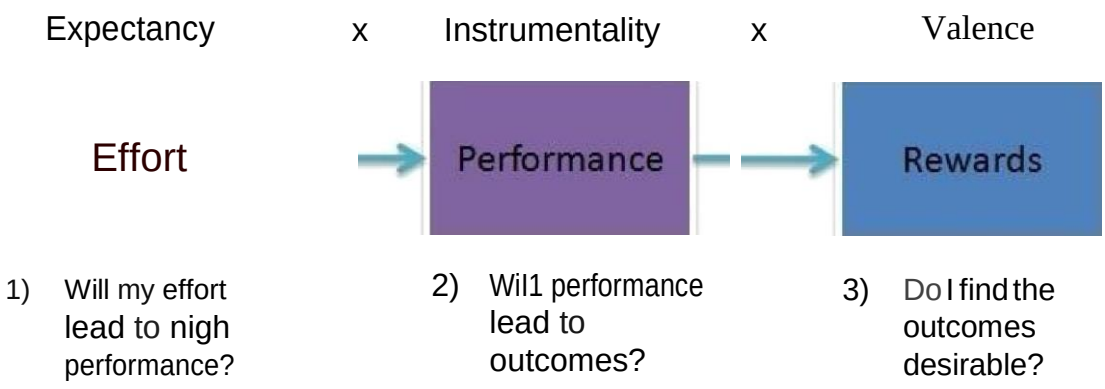
Vroom and colleagues identified three influences on motivation

1. **Expectancy** – the belief that working harder leads to better performance
2. **Instrumentality** – the belief that better performance will be rewarded
3. **Perceived value** of the resulting reward

Note: if any of the factors has a zero value, then motivation will be zero.

Example from the text book: expectancy – trying to use a compiler to compile software code; the code has a bug which causes a compilation error regardless of what you do. In this case motivation will collapse.

Instrumentality – you are working on removing a fault from a software tool used by a client; you find that the client has given up using the tool and has acquired a different one to do the job. Low perceived value of reward: a reward that everyone gets is less highly regarded than one which only outstanding people get. Getting a first is more valuable if only 5% of students get a first compared to where 90% get a first!



Dispersed & Virtual Teams

Dispersed and Virtual Teams

- Team members need to communicate
- Concentration needed for effective flow
- Flow is what you get when you concentrate for 15 minutes
- IBM:
  - 100 square feet of dedicated space
  - 30 square feet of work surface
  - Noise protection in the form of enclosed offices or partitions atleast 6 feethigh
- 77% - atleast some staff – Work From Home
  - Internet based communications
  - Broadband
- Temporary Teams
  - Contract Employees
  - Short time
  - Cost effective
  - Graphic designer
- OffShore

  Advantages
  - ✓ Reduction in staff cost- salary lower
  - ✓ Overheads reduction-accomodation, social security payments, training
  - ✓ Flexible use of staff
  - ✓ Productivity higher
  - ✓ Specialized staff
  - ✓ Different time zones-(code n test)

Challenges

- Work distributed to contractors- Careful
- Procedures-formally expressed
- Coordination- difficult
- Payment(fixed price/piece-rate)
- Lack of trust
- Quality Assesment
- Differenct time zones Communication and coordination

Communication plan

Communication is important in all projects but a vital matter in case of dispersed projects. Because of this, consideration of the way that project stakeholders will communicate ought to be a part of the project planning process.

- **Communication Genre**
  - Refers to the method of communication
- Communication Plan
  - Arrangements for communication between project stakeholders can be documented

Time/place constraints on communication

- One way of categorizing types of communication.

	Same place	Different place
Same time	**Meetings, interviews**	**Telephone, Instant messaging**
Different times	**Notice boards** **Pigeon-holes**	**Email** **Voicemail** **Documents**

Other factors influencing communication genres

- Size and complexity of information – favours documents
- Familiarity of context e.g. terminology – where low, two-way communication favoured
- Personally sensitive – it has to be face-to-face communication here

Best method of communication depends on stage of project

- Different stages of a project would favour different modes of communication
- Early stages
  - Need to build trust
  - Establishing context
  - Making important 'global' decisions
  - *Favours same time/ same place*
- Intermediate stages
  - Often involves the paralled detailed design of components
  - Need for clarification of interfaces etc
  - *Favours same time/different place*
- Implementation stages
  - Design is relatively clear
  - Domain and context familiar
  - Small amounts of operational data need to be exchanged
  - Favours different time/different place communications e.g. e-mail
- Face to face co-ordination meetings – the 'heartbeat' of the project

Communications plans

- As we have seen choosing the right communication methods is crucial in a project
- Therefore, a good idea to create a communication plan
- Stages of creating a communication plan
  - Identify all the major stakeholders for the project
  - Create a plan for the project
  - Identify stakeholder and communication needs for each stage of the

project

– Document in a communication plan

Content of a communication plan

For each communication event and channel, identify:

- ***What.*** This contains the name of a particular communication event, e.g, 'kick-off meeting', or channel, e.g. 'project intranet site'.
- ***Who/target***. The target audience for the communication.
- ***Purpose.*** What the communication is to achieve.
- ***When/frequency.*** If the communication is by means of a single event, then a date can be supplied. If the event is a recurring one, such as a progress meeting then the frequency should be indicated.
- ***Type/method***. The nature of the communication, e.g., a meeting or a distributed document.
- ***Responsibility.*** The person who initiates the communication.

Ethical and Programmed concerns

- Centre for Computing and Social Responsibility, De Montfort University, UK Software project management is the collection of techniques used to develop and deliver various types of software products. This developing discipline traditionally includes technical issues such as the choice of software development methodology, how to estimate project size and schedule, how to ensure safety, what resources to reuse and which programming environment to use for the development.
- The discipline also includes management issues such as when to train personnel, what are the risks to the project success, and how to keep the project on schedule. These choices are then embodied in a software project management plan. None of the traditional software project management materials address the ethical issues that arise because of the choices made during software development.
- Consequently, these materials do not provide any insights as to how to address these issues. In this paper we identify several critical ethical issues that arise in most software projects and provide a proactive way of addressing these issues which is consistent with most professional software development standards. Software project management is the collection of techniques used to develop and deliver various types of software products.

- This developing discipline traditionally includes technical issues such as the choice of software development methodology, how to estimate project size and schedule, how to ensure safety, what resources to reuse, and which programming development environment to use. The discipline also includes management issues such as when to train personnel, what are the risks to the project success, and how to keep the project on schedule.
- These choices are then embodied in a software project management plan. Software project management addresses both the process of software development and the desired functional characteristics of the final software product. A complete software project management plan is the design, implementation, control and test strategy for a software development process.
- Developing software is frequently complicated involving many people from different areas and with different skills, experiences and social attitudes. There are many

operational decisions to be taken during this extended activity. There are many different approaches to control the complexity of this activity which can be viewed at two levels.

- There are those approaches which are concerned with high level decisions and processes such as the Capability Maturity Model and the ISO series, and there are methods which deal with the details of the day to day activities of the project managers and software development teams.
- These latter methods include COCOMO, PRINCE and Function Point Analysis. Relevant ethical principles must be established in order to identify the ethical issues associated with software project management.
- Ethics comprises both practice and reflection van Luijk, It is sufficient to consider only ethics practice in this paper because software project management is concerned primarily with action that guides others towards some common goal rather than conceptual reflection of the role and value of project management.
- An interesting list of generic questions was devised by John McLeod in Parker et al, pp to help determine the ethical nature of actions within IT. These are relevant to software project management because they address many of the project management tasks with the exception of full consideration of the supplier customer relationship.
- The software project is concerned with the delivery of an output by a supplier the project team to a customer under some agreement. It is irrelevant whether this is an inhouse arrangement or whether it is between two independent organisations or whether it is a combination of both. According to Velasquez, , such an agreement is concerned with output quality and moral liability.
- Velasquez argues that the principles of due care and social cost must take effect in these situations so that suppliers accept their obligations to customers and the wider community to provide goods and services that are adequate and beyond moral reproach. Whilst it is recognised that the development of a piece of software might have its own special set of problems and challenges that have to managed there are many similarities in all software projects that means it is worth considering a generic approach which will lay down foundations for the management of all software

projects.

- How to Run Successful Projects, in the British Computer Society Practitioner Series, OConnell, provides details of the Structured Project Management SPM approach. He explains that SPM is a practical methodology that, as De Marco and Lister, state, is a quotbasic approach one takes to getting a job donequot. This appears to be a generic approach which is practical rather than conceptual and provides practitioners with realistic guidance in undertaking the complex activity of project management. SPM comprises ten steps as shown in Figure .
- The first five steps are concerned with planning and the remaining five deal with implementing the plan and achieving the goal.
- OConnell states that most projects succeed or fail because of decisions made during the planning stage thereby justifying the fact that half of the effort expended in the SPM approach is on preparation.
- As mentioned previously, establishing the right scope of consideration is essential in defining acceptable project goals. The scope of consideration is influenced by the identification and involvement of stakeholders.
- In traditional software project management the stated needs of the customer are the primary item of concern in stating the project objectives. Recently, there has been some recognition that in defining how software will address those needs the customer is also presented with a predefined set of constraints which limit the customers freedom of expression McCarthy, .
- There is a mutual incompatibility between some customer needs, for example, the amount of code required to make a system easy to use makes a system difficult to modify. The balancing of these items is an ethical dimension in the development of a software product. But such considerations are limited in scope to the customer.
- Investigating organisational I Srelated projects led Farbey, Land and Targett, to conclude that regarding evaluation of IT investment, quot... the perception of what needed to be considered was disappointingly narrow, whether it concerned the possible scope and level of use of the system, or the range of people who could or should have been involved ...quot.

hey discovered, with the exception of vendors, all stakeholders involved in evaluation were internal to the organisations. The reason for this restricted involvement is that these are the only stakeholders originally identified in the traditional project goals

Leadership

Leadership is generally taken to mean the ability to influence others in a group to act in a particular way to achieve group goals. A leader is not necessarily a good manager or vice versa, as managers have other roles such as organizing, planning and controlling.

Types of authority/power

Position power

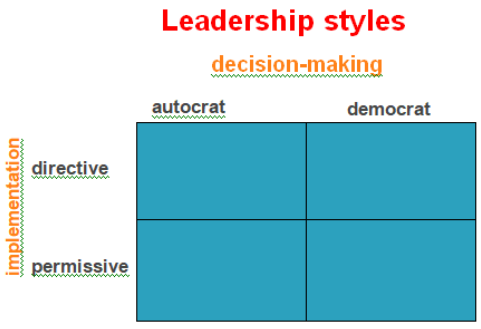
- Coercive power – able to threaten punishment
- Connection power – have access to those who do have power
- Legitimate power – based on a person's title conferring a special status
- Reward power – able to reward those who comply

Personal power

- Expert power: holder can carry out specialist tasks that are in demand
- Information power: holder has access to needed information
- Referent power: based on personal attractiveness or charisma

Leadership styles

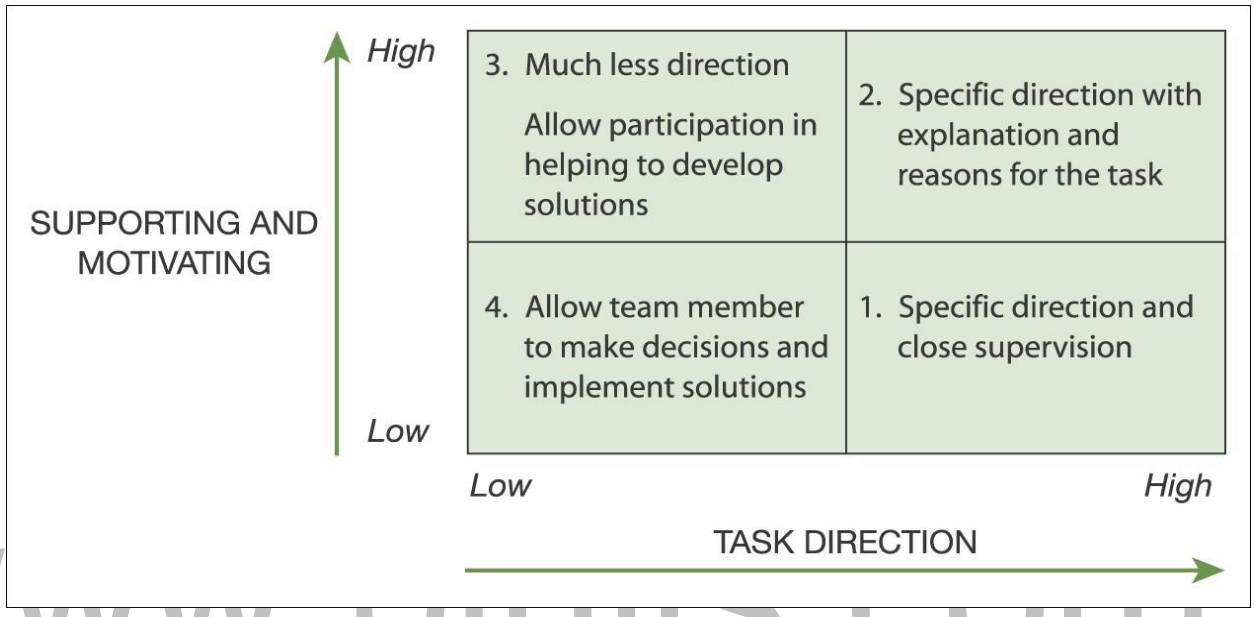
- Directive autocrat: makes decisions alone: close supervision of implementation
- Permissive autocrat: makes decisions alone: subordinates have latitude inimplementation
- Directive democrat: makes decisions participatively: close supervision Of implementation
- Permissive democrat: makes decisions participatively: subordinates have latitude in implementation

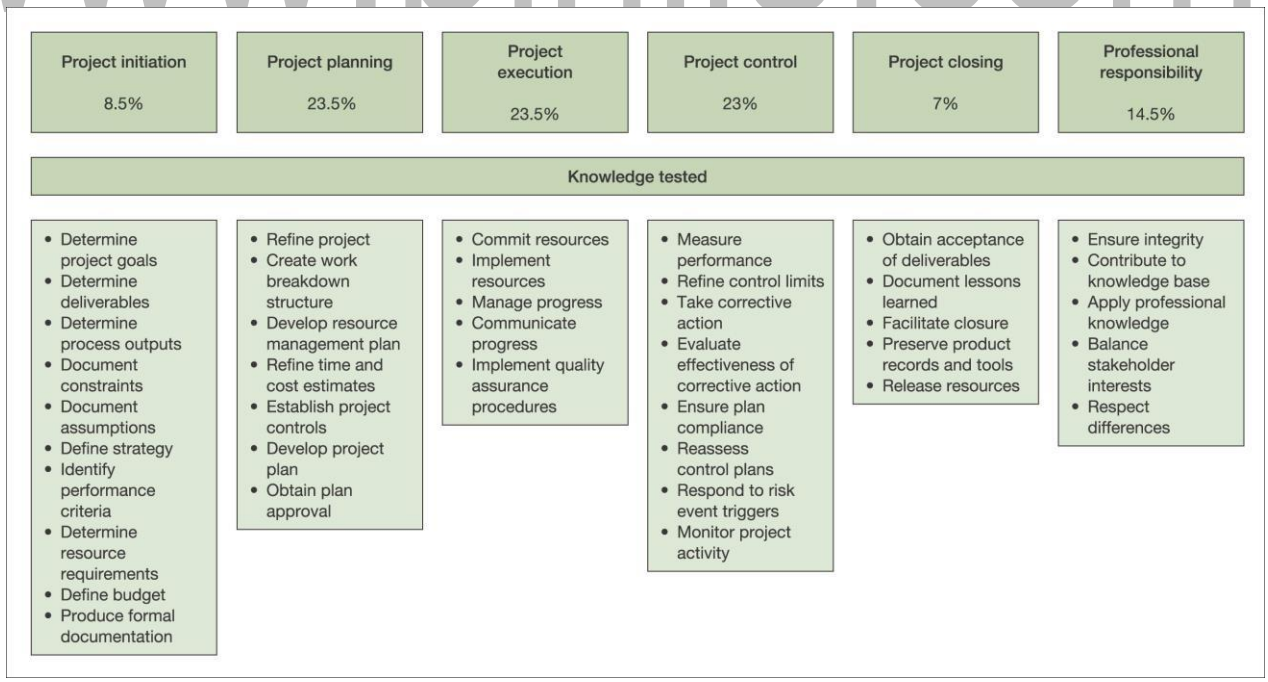


- ❖ Task orientation – focus on the work in hand
- ❖ People orientation – focus on relationships

- Where there is uncertainty about the way job is to be done or staff are inexperienced they welcome task oriented supervision
- Uncertainty is reduced – people orientation more important
- Risk that with reduction of uncertainty, managers have time on their hands and become more task oriented (interfering)

Essentially staff want hands-on management when they need guidance. Once they know the job they want to be left to get on with it!





PMI qualification examination content

Managing people

Managing People and Organizing Teams

- Often the most difficult areas in managing software development projects
- "Most managers are willing to concede the idea that they've got more people worries than technical worries. But they seldom manage that way." (DeMarco & Lister, Peopleware)
- One reason: technical experts become managers
- Important areas:
  - Selectingright people for the job
  - Motivating people
  - Working as a team
  - Suggested Skills for a Project Manager
- Communication skills: listening, persuading
- Organizational skills: planning,goal-setting, analyzing
- Team building skills: empathy, motivation
- Leadership skills: set example, energetic, positive, delegates, vision (big picture)
- Coping skills: flexibility, creativity, patience, persistence
- Technological skills: experience, project knowledge
- Negotiation skills: negotiates with management to get good team members, enough resources and reasonable goals and schedule.

PM's Role between Management and Project Team

- Management/customer might set conflicting/impossible requirements and goals forthe project
- Project team needs goals that are reachable within project schedule
- Project manager is a link between the groups and negotiates the resources and the goals.

How to Build Effective Teams

- Team cohesion
- Kick-off meeting
- Collocation

- Sense of team identity
- Frequent and free communication
- Trust building (e.g. role based, achievement based)
- Give frequent, easy opportunities for the team to succeed together and celebrate the achievement (e.g., team dinner after achieving a milestone)
- Jelled teams have funworking together

Organizational behaviour

- Frederick Taylor (1856-1915) 'the father of scientific management'
- Taylor's three basic objectives
  - To select the best people for the job;
  - To instruct them in the best methods;
  - To give financial incentives in the form of piece work
- One problem: 'group norms'
- Much of the work of Taylor was in factories and mines, working with manual workers. The 'instruction in best methods' involved breaking down a manual task into its component activities, identifying the best way of carrying out those activities and then teaching the workers to copy the approved method.
- This can be seen as treating the workers as little better than automatons – but it is also the way the sporting coaches often work
- The individual workers were encouraged to maximize output by paying them piece-rates e.g. by the units processed.
- One difficulty with this is that workers learn that increasing output can in fact lead to the piece-rate being adjusted in a downward direction. Maximizing output can also be physically and mentally exhausting. Groups of workers therefore tend to converge on an agreed output rate which does not require a constant 100% effort.

➢ **Hawthorne effect**

- 1920's – series of experiments at the Hawthorne Plant of Western Electric, Chicago
- Found that simply showing an interest in a group increased productivity
- Theory X: there is a need for coercion, direction, and control of people at work
- Theory Y: work is as natural as rest or play

- The Hawthorne experiments investigated the effect of various factors such as improved lightning on productivity. It was found that the productivity of the control group (whose working conditions such as lighting were not changed) increased – the fact that someone singled them out for observation improved their motivation.

Theory X

- The average human has an innate dislike of work
- There is a need therefore for coercion, direction and control
- People tend to avoid responsibility

Theory Y

- Work is as natural as rest or play
- External control and coercion are not the only ways of bringing about effort directed towards an organization's end
- Commitment to objectives is a function of the rewards associated with their achievement
- The average human can learn to accept and further seek responsibility
- The capacity to exercise imagination and other creative qualities is widely distributed.

Selecting the best people

- Belbin distinguishes between **eligible** (having the right qualifications) and **suitable** candidates (can do the job).
- Eligible candidates- have a curriculum vitae which shows the right and required details
- Suitable candidates- who can actually do the job well.
- The danger is employ someone who is eligible but not suitable
- The best situation is to employ someone who is suitable but not eligible! For example, these are likely to be cheaper and to stay in the job.
- 1968 study – difference of 1:25 in time taken by different programmers to code program

- Other research found experience better than maths skills as a guide to software
- skills
  - Some research suggested software developers **less sociable** than other workers
  - Later surveys have found no significant social differences between IT workers and others – this could be **result of broader role** of IT in organizations

There is some evidence that there is a very wide variation in software development skills – going back many years. Some research found that computer people had fewer social needs than other professionals. Later research has not found any significant difference – this may be because the 'ICT profession' has become broader in scope.

A selection process/Recruitment Process

1. **Create a job specification.**
2. **Formally or informally the requirement of the job**
   a. Content includes types of task to be carried out.
3. **Create a job holder profile**
   a. Describes the characteristics of the person who could do the job, quality, qualification, education and Experience
4. **Obtain applicants**
   a. Identify the media that potential job holders are likely to consult. Elicit CVs
5. **Select potential candidates from CVs.**
   a. Do not waste everybody's time interviewing people whose CV clearly indicates are unsuitable.
6. **Further selection, including interview**
   a. Selection processes could include aptitude tests, examination of work portfolios. Make sure selection processes map to the job holder profile
7. **Other procedures.**
   a. e.g. taking up references, medicals etc

Organizational Structures

Objectives

- Organization and Team Structures
  - Department Structures
  - Team Structures
- Coordination Dependencies
  - Tools Used for managing dependencies
- Dispersed & Virtual Teams
  - Advantages
  - Challenges

Organization and Team Structures

- Departments
  - Criteria: Staff Specialization, Product Lines, Categories of Customers, Geo. Location
  - Banking, Embedded application, Telecom

- Verticals
  - Projects and Teams
    - Every department several projects
    - Each project has a separate team of developers

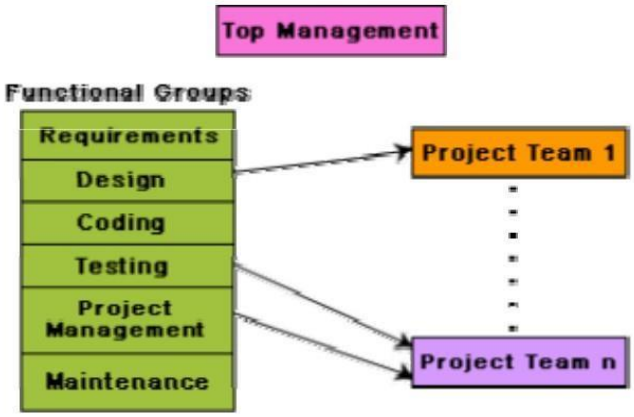
Department Structure - How is a department organized into Teams?

Team Structure - How are project teams structured?

Department Structure

- Functional Format
- Project Format
- Matrix Format

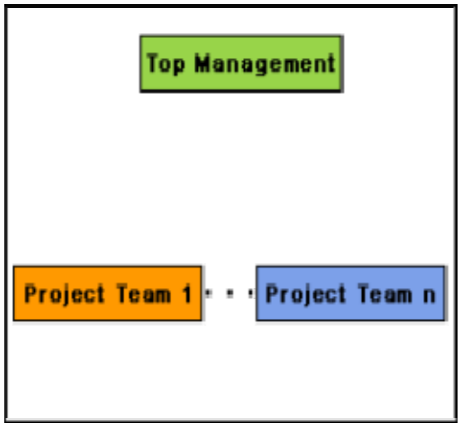
- **Functional Format**



- Developers are divided into functional groups
- specialization and experience
- Database, Networking, Req. Analysis, Design, Testing.
- Different projects follow borrow developers from corresponding functional group.
- Upon completion ,developers are returned to the respective functional groups
- Partially completed product passes from one team to another
- Documents
- Mandates production of good quality documentation

Project Organization

- Designed for realizing task-oriented teams.
- At the start of every project, a set of developers are assigned to it.
- Developers remain with the project until the completion of the project.
- Same team carries out all the project activities.



Functional vs Project Format

- Team members do not meet- Communication Gap
- Users prefer project team because they have a group dedicated to it
- Project team members build up familiarity
- Maintenance Activities

Functional Advantages:

- Ease of Staffing
- Production of good quality documents
- Job Specialization
- Efficient handling of the problems associated with manpower turnover
- Career Planning

Matrix Format

- Extension of functional format
- Provide advantage of both functional and Project structures
- Pool of functional specialists is assigned to different projects as needed
- The member assigned to a project has to report to both the managers (functional and project)
- Weak or Strong
- Depending upon the relative authority of the functional managers and the project managers
- Strong – Functional Managers authority
- Weak – Project Managers authority

Disadvantages:

- Multiplicity of authority – Conflicts
- In Strong Matrix Organization
  - Frequent shifting of workers
  - Firefighting mode
  - Tackle Crisis

Team Structure

- Denotes
  - Reporting
  - Responsibility
  - Communication Structures (in Individual projects)
- Different project different styles
- Team Structures
  - Chief Programmer
  - Democratic
  - Mixed Team Organization

Chief Programmer Team

- Senior Member provides technical leadership
- Brooks- " The design activity should be carried out by a small team to maintain designconsistency"
- Productive – by support from other members
- Partitions the tasks (coding, testing, documentation) to team membersAdvantages
  - More efficient for completing simple and small projects
  - Quickly work out design, assign-code, testDisadvantages
  - Authority- Lower Team Morale
  - Decisions by himself
  - Subject to single point of failure
  - Danger of information overload.

Democratic Team

- Does not enforce any formal team hierarchy
- Decisions are taken based on discussions
- Free to discuss
- Members of team provide technical leadership at different times
- Offers high morale & job satisfaction

- Less productive compared to Chief Programmer
    - Small teams- Effective (5-6).Larger Team-Chaotic

Mixed Control Team

- Software Development Companies
- Extremely popular
- Ideas of both democratic and chief programmer team structure
- Both hierarchical and democratic setup
- Suitable for large teams

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:

1. **Meaningfulness of work**

   That labour 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 in an of itself (as opposed to motivatingonly as a means to an end).

2. **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 abilityto make changes and incorporate the learning you gain whilst doing the job.

3. **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).

In turn, each of these critical states are derived from certain characteristics of the job:

1. **Meaningfulness of work**

The work must be experienced as meaningful (his/her contribution significantly affects the overall effectiveness of the organization). This is derived from:

- **Skill variety**

  Using an appropriate variety of your skills and talents: too many might be overwhelming, too few, boring.

- **Task Identity**

  Being able to identify with the work at hand as more whole and complete, and hence enabling more pride to be taken in the outcome of that work (e.g. if you just add one nut to one bolt in the same spot every time a washing machine goes past it is much less motivating than being the person responsible for the drum attachment and associated work area (even as part of a group).

- **Task Significance**

  Being able to identify the task as contributing to something wider, to society or a group over and beyond the self. For example, the theory suggests that I will be more motivated if I am contributing to the whole firm's bonus this year, looking after someone or making something that will benefit someone else. Conversely I will be less motivated if I am only making a faceless owner wealthier, or am making some pointless item (e.g. corporate give-away gifts).

2. **Responsibility**

   Responsibility is derived from autonomy, as in the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out)

3. **Knowledge of outcomes**

   This comes from feedback. It implies an employee awareness of how effective he/she is converting his/her effort into performance. This can be anything from production figures through to customer satisfaction scores. The point is that the feedback offers information that once you know, you can use to do things differently if you wish. Feedback can come from other people or the job itself. Knowing these critical job characteristics, the theory goes, it is then possible to derive the key components of the design of a job and redesign it:

1. Varying work to enable skill variety
2. Assigning work to groups to increase the wholeness of the product produced and give a group to enhance significance
3. Delegate tasks to their lowest possible level to create autonomy and hence responsibility

4. Connect people to the outcomes of their work and the customers that receive them so as to provide feedback for learning

Stress, Health & Safety

WHAT IS STRESS?

- Stress is your mind and body's response or reaction to a real or imagined threat, event or change.
- The threat, event or change are commonly called stressors. Stressors can be internal (thoughts, beliefs, attitudes or external (loss, tragedy, change).

EUSTRESS

Eustress or positive stress occurs when your level of stress is high enough to motivate you to move into action to get things accomplished.

DISTRESS

Distress or negative stress occurs when your level of stress is either too high or too low and your body and/or mind begin to respond negatively to the stressors.

ALARM STAGE

As you begin to experience a stressful event or perceive something to be stressful psychological changes occur in your body. This experience or perception disrupts your body's normal balance and immediately your body begins to respond to the stressor(s) as effectively as possible.

EXAMPLES

Cardiac - increased heart rate

Respiratory - increased respiration

Skin - decreased temperature

Hormonal - increased stimulation of adrenal genes which produce an adrenal rush.

RESISTANCE STAGE

During this stage your body tries to cope or adapt to the stressors by beginning a process of repairing any damage the stressor has caused. Your friends, family or co- workers may notice changes in you before you do so it is important to examine their feedback to make sure you do not reach overload.

EXAMPLES

Behavior indicators include: lack of enthusiasm for family, school, work or life in general, withdrawal, change in eating habits, insomnia, hypersomnia, anger, fatigue.
Cognitive Indicators include: poor problem solving, confusion, nightmares, hyper-vigilance.

EXHAUSTION STAGE

During this stage the stressor is not being managed effectively and the body and mind are not able to repair the damage.

Health & Safety

Mechanisms for Effects of Exercise on Stress Reduction

- Distraction
- Endorphin
- Thermogenic
- Self-esteem

Types of Social Support

- Informational
- Material
- Emotional

Coping with Stress

- **Problem-focused**
  - Problem Solving
  - Assertiveness
  - Seeking active social support
- **Emotion-focused**
  - Praying
  - Relaxing
  - Exercising
  - Seeking passive social support
- **Avoidant**
  - Ignoring

- Escaping
- **Appraisal-focused**
- Cognitive restructuring
- Knowledge/skills

Other Stress Reduction Techniques

- Quick "time out"
- Jacobson's progressive relaxation
- Autogenic training
- Biofeedback
- Meditation / imagery
- Exercise

Quick "Time Out"

- Deep breathing
- Take mind off of problems

Jacobson's Progressive Relaxation Technique

- Involves alternate contraction and relaxation of muscles
- Teaches person to identify stress-related tension in the body

- Autogenic Relaxation Training
- Combines deep rhythmic breathing with soothing imagery
- Feelings of heaviness and warmth facilitate process

Biofeedback

- Utilizes machines that monitor physiological responses
- Useful for decreasing tension headaches, asthma attacks, hypertension and phobias.

Meditation / Imagery

- Relies on deep breathing
- Facilitated by images of peace and relaxation

Working in teams

Introduction:

Θ Software based systems will be huge, also software tool contains five million lines of code.

Θ So that the work is shared between individual software developers within teams and betweengroup of developers.

Θ Team working will enhance the communication between individual developers and withinteams and across teams.

Θ Team - Group of people who are working together.

- Small group environment

Θ The term Project Team refers all the people working on a project.

Θ The people who are working in project team may sit in different workgroups at some distance from each other.

Θ These groups can also change over time.

Θ Thus individual developers are transfer between teams during the period of project start andfinish.

Θ Team is created to do joint assignment

Θ To perform the work assignments which are allocated to the staff, the organization needs oneform of coordination between groups and individuals within a project.

Θ Communication genres

- refers Method of Communication
- It is selected and developed to deal with particular need for project coordination.
- The arrangements for communication between stakeholders are documented in communication plan

Θ This Team work has an influence on all stages of step wise project planning framework.

1. Identify Project scope and objectives
2. Identify Project Infrastructure
3. Analyze project characteristics

4. Estimate effort for each activity
5. Identify activity risks
6. Allocate resources
7. Review/publicize plan

Becoming a Team

- The organization first analyzes how the small work groups are formed.
- While forming a team it has five basic stages of development:
  - Forming - Members of the group get to know each other
    - Try to set up some rules about behavior
  - Storming - Conflicts arise to get leadership
    - Group's methods of operation are established
  - Norming - Conflicts are largely settled
    - Group identity emerges
  - Performing - Now tasks are at the hand
  - Adjourning (Suspend or Stop)- Group disperse
- Some training activities such as management games are needed to promote team building andto people in the team work together.
- The team may consists of different types of people such as
  - The chair - Good at running meetings
    - Strong but tolerant
  - The plant - Good at generating ideas and solutions to the problems
  - The monitor-evaluator - Good at evaluating ideas and solutions
    - Think well at selecting best one
  - The shaper - Who helps to direct team's attention to the important issues
  - The team Worker - Good at creating a good working environment
  - The resource investigator - Skilled person to find resources ie) both physical

resources and information

- The completer-finisher - Anxious (Worried) with completing tasks
- The company worker - Should be a good team player
  - Willing to take tasks for team success

- Problems occur when there is an imbalance between the role types of people in a group.

Group Performance`

- In many projects, some solutions are needed about which tasks are carried out collectively asa team and which are allotted to individuals.
- It is defined by "Some work yields better results if carried out as a team while some thingsare slowed down if the work is not partitioned on an individual basis".
- The group tasks are categorized into:
  - Additive Tasks - Effects of each participant are added to get final result
    - People involved are interchangeable
  - Compensatory Tasks - Solutions of individual group members are pooled
    - Errors of some are compensated by the inputs from others
  - Disjunctive Tasks - Means there is only one correct answer.
    - It depends on someone coming up with one right answer and others recognizing it as being correct
  - Conjunctive Tasks - Means joining the tasks
    - Progress is governed by the rate of slowest performer
    - The overall task is not completed until all participantshave completed.

Decision Making

- Decision can be categorized as
  - Structured
    - Simple
    - Routine
    - Straightforward rules
  - Unstructured
    - More complex
    - Requires degree of creativity

Mental Obstacles to good decision making

- Many decisions are made under pressure
- With incomplete information
  - Faulty Heuristics (Rule of thumb) – dangers are there
  - Information in hand-misleading
  - Stereotypes (well-known fact)
  - Escalation of commitment(difficult to alter once made a commitment)
  - Information Overload

Group Decision Making

- Decisions made by the team as a whole are more likely to be accepted that those that areimposed
- Complementary skills and expertise
- Communicate freely/get ideas
- Brainstorming techniques
- Aim is to have involvement of end users?
  - Prototyping and participatory approaches
  - JAD(Joint Application Development)

Barriers to good team decisions

- Inter-personal conflicts –team formation
- Conflicts tend to be a dampened by emergence of *group norms* – shared group

opinions andattitudes

- *Risky shift* – people in groups are more likely to make risky decisions than they would asindividuals

Delphi approach

To avoid dominant personalities intruding the following approach is adopted

1. Enlist co-operation of experts
2. Moderator presents experts with problem
3. Experts send in their recommendations to the moderator
4. Recommendations are collated and circulated to all experts
5. Experts comment on ideas of others and modify their own recommendation if so moved
6. If moderator detects a consensus, stop; else back to 4

Team 'heedfulness'

- Football Team.
- Where group members are aware of the activities of other members that contribute to overallgroup success
- Impression of a 'collective mind'
- Some attempts to promote this:
  - Egoless programming
  - Chief programmer teams
  - XP
  - Scrum

Egoless programming

- Gerry Weinberg noted a tendency for programmers to be protective of their code and to resistperceived criticisms by others of the code
- Encouraged programmers to read each others code
- Argued that software should become communal, not personal – hence 'egoless programming'

Chief programmer teams

- Fred Brooks was concerned about the need to maintain 'design consistency' in large

softwaresystems

- Appointment of key programmers, Chief Programmers, with responsibilities for definingrequirements, designing, writing and test software code
- Assisted by a support team: co-pilot – shared coding, editor who typed in new or changedcode, program clerk who write and maintain documentation and tester
- Problem – finding staff capable of the chief programmer role

Extreme programming

XP can be seen as an attempt to improve team heedfulness and reduce the length of communication paths (the time between something being recorded and it being used)

- Software code enhanced to be self-documenting
- Software regularly refactored to clarify its structure
- Test cases/expected results created *before* coding – acts as a supplementary specification
- Pair programming – a development of the co-pilot concept

Scrum

- Named as an analogy to a rugby scrum – all pushing together
- Originally designed for new product development where 'time-to-market' is important
- 'Sprints' increments of typically one to four weeks
- Daily 'scrums' – daily stand-up meetings of about 15 minutes
- Unlike XP, requirements are frozen during a sprint
- At the beginning of the sprint there is a sprint planning meeting where requirements areprioritized
- At end of sprint, a review meeting where work is reviewed and requirements may be changedor added to.