

# **CSE 4016 Software Project Management**

**Managing People**

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4 main concerns:

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



# Understanding Behaviour

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- 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.


- Fredrick Taylor attempted to analyse the most productive way of doing manual tasks.
- Taylor's three basic objectives
  - 1. To select the best man for the job.
  - 2. To instruct them in the best methods.
  - 3. To give incentives in the form of higher wages to the best workers.
- The conditions under which the staff worked also affects productivity.
- OB researchers discovered that the state of the minds of the people influenced productivity.



## Theory X

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- 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

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- 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 right person for the job

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- Besides the s/w tools the individuals selected for a job affect the programming productivity.
- Experience
- Person who can communicate well.



# Recruitment Process

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- Recruitment is often an organizational responsibility.
  - Eligible candidates- have a curriculum vitae which shows the right and required details
  - Suitable candidates- who can actually do the job well.
  - Assesses actual skills rather than experience.
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- 1.Create a job specification.
  - 2.Create a job holder profile.
  - 3.Obtain applicants.
  - 4.Examine CV's.
  - 5.Interviews.
  - 6.Other procedures.

# Motivation



Motivation and application can often make up for shortfalls in innate skills

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- Taylor's approach - financial incentives
- Abraham Maslow (1908-1970)
  - motivations vary from individual to individual. People will be motivated by different things at different times. People will always feel dissatisfied, but the focus of the dissatisfaction changes over time.
  - hierarchy of needs – as lower ones fulfilled, higher ones emerge



# Herzberg

Herzberg suggested two sets of factors affected job satisfaction

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

# Vroom

Vroom and colleagues identified three influences on motivation

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- n ***Expectancy*** – the belief that working harder leads to better performance
- n ***Instrumentality*** – the belief that better performance will be rewarded
- n ***Perceived value*** of the reward

## Oldham-Hackman Job Characteristics

Identified the following characteristics of a job which make it more 'meaningful'

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- Skill variety
- Task identity – the degree to which your work and its results are associated with you
- Task significance

## Methods to improve job satisfaction

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Set specific goals

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- Provide feedback on the progress towards meeting those goals
- Consider job redesign
  - Job enlargement
  - Job enrichment

# **CSE 4016 Software Project Management**

**Working in team**

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# Working in Teams

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- Usually work/task will be divided among the groups.
- Formal Groups will be divided into subgroups
- There are two types
  - Command Group: Formal Mgmt Struct
  - Task Group

# Step wise frame work

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- Identify project scope and objectives
- Identify project infrastructure
- Analyze project characteristics
- Estimate effort for each activity
- Identify activity risks
- Allocate resources
- Review/Publicize Plan

# Becoming a Team

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- There are 5 basic stages of development
  - ▣ Forming
  - ▣ Storming
  - ▣ Norming
  - ▣ Performing
  - ▣ Adjourning

# Balance – Different People

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- The Chair
- The Plant
- The Monitor – Evaluator
- The Sharper
- The Team Worker
- The Resource Investigator
- The Completer – Finisher
- The Company Worker
  - Similar to our institution

# Group Performance

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- One way of categorizing group tasks into:
  - ▣ Additive Tasks
    - Effort to get final result
  - ▣ Compensatory Tasks
    - Judgments of individual group members are pooled
  - ▣ Disjunctive Tasks
    - Only one correct answer
  - ▣ Conjunctive Tasks
    - Progress is governed by the rate of slowest performer



# Decision Making

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- Decisions are categorized as
  - ▣ **Structured:** Simple, Routine Decisions (Rules can be applied in straight forward way)
  - ▣ **Unstructured:** More Complex and often requiring a degree of creativity

# Obstacles to make good decision

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- Faulty Heuristics
  - “Rule of Thumb”
- Escalation of Commitment
  - Difficult to alter
- Information Overload
  - Too much of information

# Obstacles to good **GROUP** decision

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- Groups deal less effectively with
  - ▣ Poor Structures
  - ▣ Problems need Creative Solutions
- Risky Shifts – Making decision on their own

# Methods to reduce the disadvantages of group DM

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- Delphi Technique: Given a problem following procedure have to be 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
  - ▣ If there is any deviation the process will be stopped

# Team Heedfulness

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- Eg: Foot Ball team
- Group members are aware of activities of others that contribute to overall success
- “Collective Mind”
  - Shared Understanding, Familiarity and good communications
- In software development environment
  - Egoless Programming
  - Chief Programmer Teams
  - Extreme Programming
  - Scrum – Similar to Agile Model

# Organization & Team Structure

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- There are two important issues that are critical to the effective functioning of every organization are
  - ▣ Department Structure
    - How is a department is organized into teams?
  - ▣ Team Structure
    - How are project teams structured?

# Department Structure

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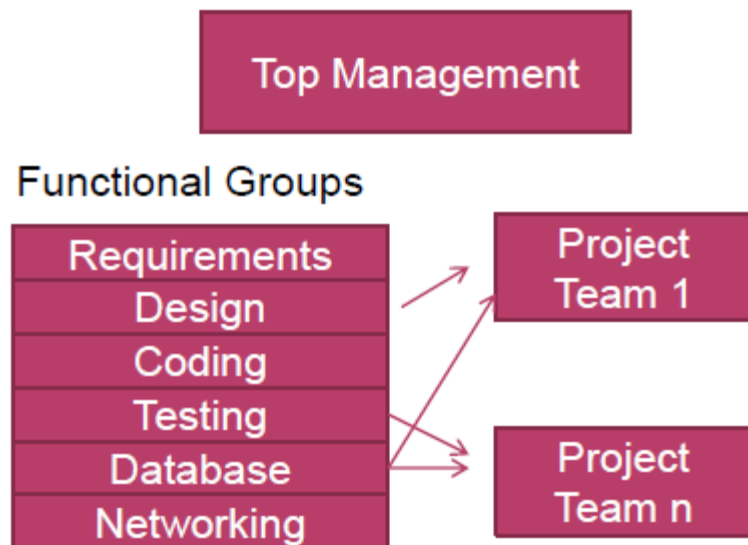
- There are three broad ways in which a software development department can be structured:
  - ▣ Functional Format
  - ▣ Project Format
  - ▣ Matrix Format

# Functional Format VS Project Format

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a. Project Organization



b. Functional Organization



# Team Structure

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- Denotes the reporting, responsibility and communication structures in individual project teams
- There are only three team structures:
  - Democratic
  - Chief Programmer
  - Mixed team organization

End