

Professional Practices

**“Human Resource
Management and
Software Engineering”**

Contents

- A model of HR management-salient features for software engineering
- The software factory

Human Resource Management

- **Human resources** are the people who make up the workforce of an organization, business sector, or economy.
- A human resource is a single person or employee within an organization. Human resources refer to all of the people of that organization.

Human Resource Management

- A human-resources department (HR department) of an organization performs human resource management i.e. overseeing various aspects of employment such as
 - compliance with labor law and employment standards, administration of employee benefits
 - some aspects of recruitment and dismissal.

Human Resource Management

- **Human resource management** is the strategic approach to the effective management of organization workers so that they help the business gain a competitive advantage
- Commonly known as the *HR Department*, it is designed to maximize employee performance in service of an employer's strategic objectives.
- HR is primarily concerned with the management of people within organizations, focusing on policies and systems.
- HR departments are responsible for overseeing employee-benefits design, employee recruitment, training and development, performance appraisal and rewarding.

Model of human resource management

- Model of human resource management constitutes a broad collection of features.
- In this section we will discuss only some features salient for software engineering.

Model of human resource management

Long term, strategic and proactive in style

- HR planning is of great significance for managers responsible for locating and managing resources.
- Their duties include
 - Establishing number of staff
 - Maximum utilization of personnel
 - Development and education of employees
 - A projection of future staff needs

Model of human resource management

Commitment to the organization

- Two approaches
 - Complete control through reliance on the rules governing employment.
 - Empowering employees with status and responsibility for quality production.

Model of human resource management

Commitment to the organization

- Real challenge is to shift employee attitudes from mere compliance with rules at work to commitment and self motivation.
- Skill is now not much the technical qualifications of employees but their qualities in terms of attendance, flexibility, responsibility, discipline, identification with the company and work rate.

Model of human resource management

Self-management

- Self management is a form of organizational management based on self-directed work processes on the part of an organization's workforce.

Model of human resource management

Self-management

- There are two variations of self-management
 - All the workers manage the enterprise directly through assemblies
 - workers exercise management functions indirectly through the election of specialist managers.
- The goals of self-management are to improve performance by granting workers greater autonomy in their day-to-day operations, boosting morale, reducing alienation, and when paired with employee ownership, eliminating exploitation.

Model of human resource management

Unitary Perspective

- The unitary perspective is based on the assumption that the organization is an integrated group of people with single authority/ loyalty structure and a set of common values, interests and objectives shared by all members of the organization.
- Management's prerogative is regarded as legitimate, rational and accepted and any opposition to it is seen as irrational.

Model of human resource management

Unitary Perspective

- There is no conflict between the interests of those supplying capital to the enterprise and their managerial representatives, and those contributing their labor.
- The underlying assumption of this view is that the organizational system is in basic harmony, and conflict is unnecessary and exceptional.

Model of human resource management

Unitary Perspective

- Managements clings to this view because
 - It legitimizes its authority role by projecting the interests of management and employees as being the same and by emphasizing managements role of governing in the best interest of organization as a whole.
 - It reassures managers by confirming that conflict, where it exists, is largely the fault of the government rather than management.

Model of human resource management

Flexible Work Roles

- Idea behind flexible work roles is that rather than the organization being centralized , with job roles formally defined, the roles should be flexible with devolution of decision making and a fluid organizational structure.

Model of human resource management

Flexible Work Roles

- Four main characteristics of the management structure of well established firms are
 - Motivate and retain technical talent
 - Decentralization
 - Looser authority structure
 - Matrix organization

Model of human resource management

Maximum utilization of human resources

- Human resource utilization is the extent to which available human resources are deployed effectively for the maximum achievement of individual, collective and organizational goals and objectives.
- Examples

The Software Factory

- A **software factory** is a structured collection of related software assets that aids in producing computer software applications or software components according to specific, externally defined end-user requirements through an assembly process.
- A software factory applies manufacturing techniques and principles to software development to mimic the benefits of traditional manufacturing.
- Software factories are generally involved with outsourced software creation.

The Software Factory

- Managers can control the process of software development by setting out the three key elements of
 - Methods
 - Tools
 - procedures

The Software Factory

- Methods refer to the wide range of tasks in building software. These include
 - Project planning and estimation
 - System and software requirement analysis
 - Design of data structure
 - Coding, testing and maintenance

The Software Factory

- Tools provide automated support for methods.
- They may be integrated so that the information created by one tool can be used by another, thus establishing a system for the support of software development.
- CASE (Computer-aided **software engineering**).

The Software Factory

- Procedures hold the methods and tools together and control timing by defining a sequence in which methods will be applied.